

City of Fremont Update

Date: February 26, 2021

To: City Employees/ City Boards/ Mayor & City Council

Last Week's Extreme Cold Wreaked Havoc with Power Prices

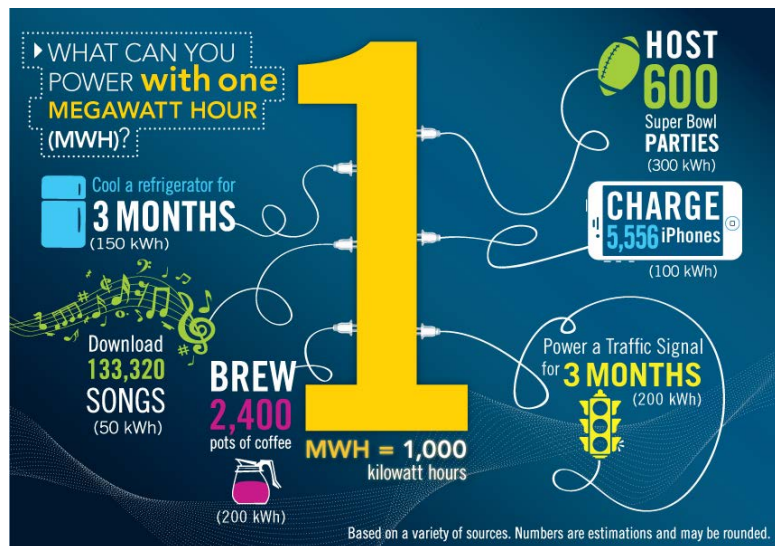
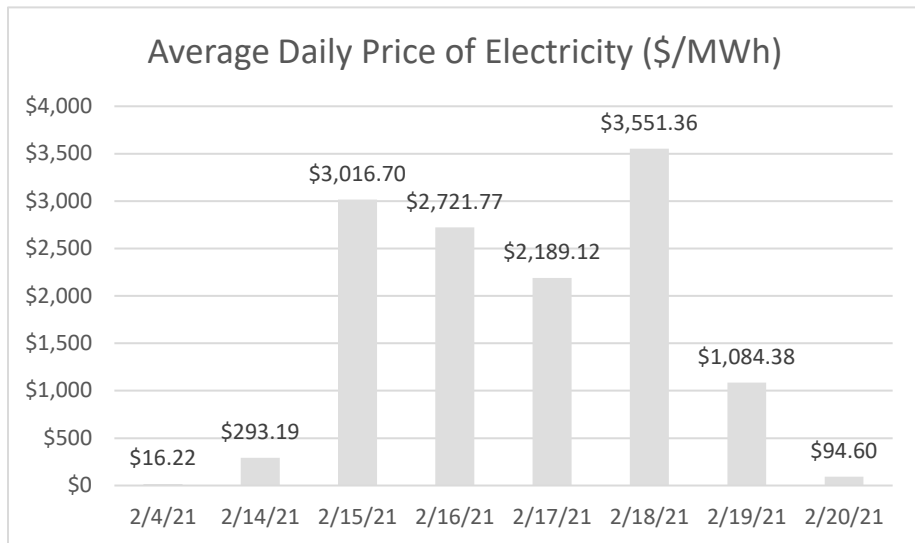
In last week's Update, I wrote about the massive price spikes we saw in natural gas prices that were caused by an increase in demand for gas as well as problems with frozen wellheads in Texas. This week, I want to focus on the massive price spikes we also saw in the

prices for electricity, some of the causes for the price spikes, and several things Fremont can do to minimize effects from market price spikes in the future.

The chart on the right shows the average cost of electricity on 8 different days over the last couple of weeks. The graph starts on February 4, with what is a typical cost of electricity, \$16 per MWh. The price then jumped to \$293.19 on February 14, (a whopping 1700% increase) and if that wasn't enough it jumped another 1000% to \$3,016 per MWh on the following day, Monday, February 15. And finally, the price hit a peak of \$3,551 per MWh on Thursday, February 18. This price is a 22,100% increase or 221 times the normal cost of a megawatt-hour of electricity.

Before I explain these costs, let me describe a megawatt of electricity. A megawatt is a unit of electricity equal to one million watts or 1,000 kilowatts. A typical hairdryer is 1,000 watts or one kilowatt. If you run one hairdryer for one hour, an electric meter would record one kilowatt-hour. If you ran 80,000 hairdryers for one hour, they would consume the amount of electricity that Unit #8 produces (80 megawatt-hours) in one hour. That is a lot. It just so happens that is also the amount of electricity that Fremont's

customers need on a cold winter day, like last week. So, in other words, if Unit #8 tripped offline on February 18, and the City was forced to buy replacement electricity at the market



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price of \$3,551 per MWh (from the graph above), it would have cost us \$6,301,724. Conversely if we bought that same amount of electricity on February 4, at \$16.22 per MWh, it would have cost us \$31,142. See the massive difference in price!

Luckily, and thanks to the hard work by our power plant staff, Unit #8 did not trip offline last week, so the City did NOT have to buy any electricity at the outrageous market prices. Instead, we self-generated all the electricity our customer's needed. That is also the reason why Fremont did not have rolling blackouts—we were self-sufficient, operating independently from the Southwest Power Pool grid.

So...what caused the massive price spikes? Again, as I explained last week, it was a trifecta of increased demand for electricity caused by extreme cold temperatures, lack of natural gas caused by wellhead freezing as well as price spikes for natural gas, and little or no electricity from renewable energy (wind and solar).

So...what can Fremont do to avoid market price risk in the future? In regards to electricity, Fremont will need to join a consortium of utilities to bring in more electricity to town to meet Fremont's growth. As our coal-fired power plants age, we cannot enlarge them nor can we simply convert them to another fuel source. Instead, we will have to partner with other utilities to build a reliable and economically priced source of electricity to power our growth. In regards to natural gas, we can avoid market price risk if we continue and possibly expand what we do today. That is to inject propane during periods of high demand for natural gas and offer incentives to customers to curtail their natural gas usage. As I reported in last week's Update, both of these measures saved Fremont's natural gas customers millions of dollars in excessively high market prices for natural gas last week.

Lastly, it is worth noting that the Federal Energy Regulatory Commission (FERC) announced today that FERC's Office of Enforcement will be examining wholesale natural gas and electricity market activity following last week's price runups to determine if any market participants engaged in market manipulation or other violations. The commission will also open up a proceeding to examine the threat that climate change and extreme weather events pose to electric reliability.

Fire Department Receives Gift from Board of Realtors

The picture on the right is Fire Chief, Todd Bernt, accepting a \$500 check from the Fremont Board of Realtors to aid the Fire Department in purchasing smoke detectors. Each year the Fire Department installs free standard smoke detectors as well as replaces batteries in existing smoke detectors in homes of senior citizens and low-income and physically challenged residents in Fremont. Anyone



meeting these criteria should call the Fire Department at 402-727-2688 to get help with their smoke detector. Thank you to the Board of Realtors for your help in saving lives!

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