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COMMENTARY

LIGHTS OUT FOR VARIABLE PRICING?

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In February 2021, Texas experienced extraordinary winter weather for four days. As a result of the freezing temperatures, Texans faced rolling blackouts across the state. Current reports estimate that over sixty percent of Texans lost power at some point during the winter storm.[1] Public outrage was severe, and lawmakers vowed to pass new regulations to ensure the power supply will not be impacted by winter weather again.[2] Other states will certainly study what went wrong in Texas to ensure their electric grid is able to withstand winter weather.

An underdiscussed lesson of the blackouts is consumers' inability to respond to price signals under variable pricing plans. There are many types of variable pricing for energy consumption but all attempt to provide price signals to customers in attempt to discourage energy use at peak usage times.[3] Although there is some variance, energy use is greatest in the evening hours.[4] Variable pricing models try to encourage consumers to use energy at times when demand is lower.[5] Dispersing energy use throughout the day reduces the amount of energy required at a given time reducing the need for generating facilities and costs to consumers.[6] Further, shifting energy use to daytime hours can allow for greater utilization of solar energy.[7]

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[1] Neelam Bohra, *Almost 70% of ERCOT customers lost power during winter storm, study finds*, TEX. TRIBUNE (Mar. 29, 2021), https://www.texastribune.org/2021/03/29/texas-power-outage-ERCOT/.

[2] *Id.*

[3] *Time-variant electricity pricing can save money and cut pollution*, ENVTL. DEF. FUND, https://www.edf.org/sites/default/files/time-variant_pricing_fact_sheet_-_april_2015.pdf.

[4] *Daily energy demand curve*, ENERGYMAG, https://energymag.net/daily-energy-demand-curve/.

[5] ENVTL. DEF. FUND, *supra* note 3.

[6] *Id.*

[7] *Id.*

Many Texans have the option of selecting a variable rate plan.[8] Understandably, during the blackouts these customers saw their rates rise in response to decreased supply. In theory, when faced with significant increases in rates these customers should have decreased their energy consumption.

However, despite having access to real-time data on rates and usage, some customers increased their power consumption. One customer's consumption doubled when compared to the week before the storm.[9] For other customers it was unclear if their consumption increased during the storm but their consumption from February 1 – 18 was significantly higher than the average monthly consumption in the United States of 877 kWh.[10] One consumer posted their electricity bill to Twitter showing 1,956 kWh used from February 1- 18.[11] Another consumer used 2,568 kWh over the same period while another used 3,417 kWh.[12]

These increases are not entirely explained by increased heating demands. A typical space heater consumes roughly 1.5 kWh of electricity for every hour it is continuously in use.[13] A central electric furnace consumes more but still accounts for only slightly more than 200 kWh a day if used continuously for a twenty-four-hour period.[14] These appliances' energy consumptions are not significant enough to explain the high overall power usage.

The response of Texas consumers does not bode well for the future of variable pricing. If consumers do not respond to price increases of multiple dollars per kWh, it is unlikely consumers would alter their behavior in response to significantly more minor changes of a few cents per kWh. Moving forward, energy providers will need to keep Texas consumers' reactions to price signals in mind when designing ways to reduce peak demand.

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[8] Utili-Facts: Types of Electricity Plans, PUB. UTIL. COMM'N OF TEX., https://puc.texas.gov/consumer/facts/factsheets/elecfacts/Electricplans.pdf.
[9] @medpepper, TWITTER (Feb. 19, 2021, 10:42 PM), https://twitter.com/medpepper/status/1362970947473592323.
[10] *Frequently Asked Questions*, U.S. ENERGY INFO. ADMIN. (Oct. 9, 2020), https://www.eia.gov/tools/faqs/faq.php?id=97&t=3.
[11] @MTZLER, TWITTER (Feb. 19, 2021, 1:43 PM), https://twitter.com/MTZLER/status/1362835180109594624.
[12] @badgirlkiki, TWITTER (Feb. 19, 2021, 9:08 AM), https://twitter.com/badgirIkiki/status/1362765919232040964; @RoyceAP, TWITTER (Feb. 17, 2021, 12:04 PM), https://twitter.com/RoyceAP/status/1362085482037981188.
[13] Dale Yalanovsky, *What Is the Cost to Run an Electric Heater Per Hour?*, SFGate (Dec. 14, 2018), https://homeguides.sfgate.com/determine-power-costs-space-heater-92634.html.
[14] *Electricity usage of an electric furnace*, Energy Use Calculator, https://energyusecalculator.com/electricity_furnace.htm.