



Insight

Texas—and Free Market Competition—Survive Heat Wave

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Nothing happened in Texas recently, and that is a big deal.

Texas is the only place in America where the supply of electricity is determined almost entirely by short-term price signaling—the Texas grid operator does not use a capacity market to ensure a minimum supply of electricity, and regulations do not ensure that unprofitable power plants stay open. As a result, several unprofitable coal plants [closed recently](#), reducing the production capacity in the state. Many have been afraid that this free-market model will not produce enough electricity during periods of high-demand—and high demand is what Texas faced recently, as it had an unusually hot heat wave.

But the grid held up flawlessly, and there were no interruptions in power supply to people's air conditioners. This outcome in Texas indicates that, counter to the arguments of those opposed to deregulation for the sake of reliability, the free market on its own can produce enough power for everyone.

Why is Texas Different?

Price formation in electricity markets typically is a combination of the short-term price formation via “energy markets” and the longer-term price formation via “capacity markets,” as the R Street Institute [explains](#). Most grid operators determine a need for capacity and then have power plants bid into a capacity market to ensure that such need is met at least cost. Capacity markets act as a sort of insurance policy, and this structure allows power plants that rarely produce electricity to have reliable revenues and remain online. In contrast, energy markets, which form prices strictly based on short-term supply and demand, are riskier but more accurately reflect the momentary cost of delivering electricity.

The grid operator in Texas, the Electric Reliability Council of Texas (ERCOT), does not combine energy markets and capacity markets as most other grid operators do. Power plants only raise revenue when they're producing electricity. And since Texas has no capacity markets, it is relying entirely upon short-term price formation to send accurate signals to suppliers that there are opportunities for profit. That structure creates some measure of risk, and ERCOT is gambling that the incentives for profit during times of high demand will be enough to ensure power is available reliably.

The Free Market is Delivering Reliability

It turns out that what Texas is doing is not much of a gamble at all. The free market relies on prices to send

accurate signals to suppliers and consumers and thus incentivize behavior. When prices are high, consumers are encouraged to cut consumption while suppliers are incentivized to increase their production; the reverse happens when prices are low. The market for electricity should be no different, and during a heat wave that drives demand for power abnormally high—as it did in Texas recently, when the all-time demand record was [broken twice](#)—the resulting high prices should encourage suppliers to stay in the market while encouraging consumers to cut consumption.

On the demand side, electricity market participants can be part of ERCOT’s [“demand response”](#) systems, where they are compensated for reducing electricity load demand during times of scarcity. That system allows electricity consumers to have more information available on when it is profitable to adjust their consumption behavior. On the supply side, electricity prices that were over [\\$4,000 per megawatt hour](#)—about a hundred times higher than the typical [\\$20-40 per megawatt hour](#) wholesale price—create strong incentives for power plants to remain open even while not producing electricity. As a result, a power plant that is only profitable a few days out of the year can still survive in Texas’s market. And Texas has not sacrificed reliability.

Simply, Texas is acknowledging electricity can have normal price formation and signaling just like any other commodity. Results show that competition is forcing prices downward, as expected, as Texans living in deregulated areas have had average electricity prices fall by 17 percent between [2006-2015](#), while Texans living in still-regulated areas had their prices increase by 6 percent over the same time period. Yet, the July heat wave proved that Texans did not compromise electricity reliability to get a lower price.

The Upshot

Ultimately, ERCOT passed a big test of its model for delivering electricity. Customers in its jurisdiction had reliable access to electricity during a period of abnormally high demand, even without use of a capacity market. Critiques of competitive models often hinge on arguments that electricity reliability has a value that the market does not easily determine. But this argument appears to have failed in Texas.

ERCOT’s model is not the definitive future of electricity markets, as conditions vary greatly from state to state. But its experience recently counsels against the regulated-monopoly “cost-of-service” model that still prevails in much of the United States. And it turns out that Texas has reliable electricity without relying on fossil fuels: Texas produces more non-hydroelectric renewable electricity [than any other state](#), thanks to favorable geographic conditions and customers that can express a preference for clean energy through their choice of provider. (In a further embrace of free market principles in energy markets, Texas is the only place with competitive *retail* electricity markets, meaning consumers can pick from which provider they buy their electricity.)

If Americans want cleaner, cheaper, and more reliable electricity, they should probably start thinking about how they can get more of the country to look like Texas.