

If you live in the Midwest, East of the Mississippi and North of the Mason-Dixon line, or in Arkansas or Louisiana, the companies that generate your electricity are covered by what are called capacity markets. I'll bet you didn't know that. That's actually part of the problem, because there's very little transparency and hence little accountability for these policies.

The main reason these capacity markets matter, at least from my point of view, is the way they relate to clean energy. Debates about whether to prop up coal or nuclear plants are intertwined with issues about the operation of those markets. But it's not easy to figure out how the markets work — in part because, as I'll explain later, they aren't true markets, they're market imitations.

All of these states are covered by regional grid operators who run markets for wholesale electricity. In the old days, these markets weren't very important. Nearly all electricity was produced by utilities that also sold their own power at retail. These utilities were regulated by state Public Utility Commissions that regulated their prices and oversaw their investments. Ensuring that the utility had enough power to supply demand was rarely a problem, because the pricing system actually gave utilities an incentive to over-invest in generating facility. To the extent that problems arose anyway, the state utility commission could press the utility to invest in more generation. But wholesale markets have been deregulated, so the day-to-day price of power is set by the market. The problem is that it's not clear that those electricity markets will provide enough of incentive to invest in new generation, because market prices may not cover the cost of infrastructure.

Grid operators have different ways of dealing with this issue. Texas mostly deals with it by letting retail prices go through the roof on days when there's a scarcity, giving current generators windfall profits but providing a big incentive for new generators to come in and skim some of those profits. Even then, Texas does some fiddling in what are called ancillary service markets to ensure there's enough capacity. And one problem with leaving prices uncapped is that there are opportunities for firms on both sides of the electricity market to take advantage of market power, because the markets are imperfectly competitive. The Texas approach also requires that consumers face sharp and sometimes unexpected price spikes, which may not go down well.

So that brings us to capacity markets. I found the operations of these markets baffling because I assumed they were actual markets where people bought and sold something. But, as I said before, they're really only market imitations. Here's how they work. In a variety of ways, the grid operator figures out demand for energy over an upcoming time-period, maybe one year or three, maybe less. It then invites (or sometimes mandates) that generators bid in the amount of capacity that they are willing to supply and at what price.

The grid operator figures out where supply equals demands, and all the suppliers who bid at or below that price get paid at the “market” rate. The capacity demanders – basically utilities — then pony up their share. But the “sellers” in this market aren’t really selling anything; they’re merely guaranteeing to the grid operator that they’ll have that much capacity available to sell on the electricity market when needed. And the “buyers” get nothing out of the transaction, except hopefully the assurance that, when push comes to shove, *someone* will be there to supply the power. The idea behind these markets is that the day-to-day electricity prices may not be high enough to incentivize new generators, so they can top up their revenue by bidding into the capacity market. All the grid operators have their own variations on this method, which are described with impressive clarity in this [2017 GAO report](#).

But here’s the point: nobody really knows whether these markets actually do incentivize the amount of generation needed to keep the lights on. According to GAO, the data just doesn’t exist in reliable or useable form to make this determination. Nuclear plants and coal plants argue that the prices are distorted by state renewable policies and other subsidies, thus depriving them of a fair return on the capacity they are supplying to the grid. The grid operators — especially PJM, which covers much of the mid-Atlantic through Chicago — have been tinkering with their systems to try to make them work better. Their decisions are overseen by the Federal Energy Regulatory Commission (FERC). At the end of the day, however, it isn’t clear that continued operation of older nuclear and coal plants really is necessary to maintain grid reliability or that these plants are actually being under-compensated currently. Rather than confront these hard factual problems, the Trump Administration is trying to do an end-run around the whole system with trumped-up claims of national security.

Capacity markets are actually a lot more complicated and a lot harder to understand than regulating old-fashioned utilities. Competition in electricity markets hopefully leads to lower prices and my impression is that it does lend itself to more innovation, including more use of renewable energy. As the grid gets more interconnected and more diverse, the regulatory system has to become increasingly sophisticated and complex. Hopefully, technology will help take care of the capacity problem, as improved grid management, better storage batteries, and smart meters eliminate the unexpected spikes that pose capacity problems.