Texas Goes Nodal

BETTER POWER DISPATCH SOUGHT

BY PAM RADTKE RUSSELL

THE TEXAS ELECTRICITY MARKET IS about to undergo a shift almost as radical as the move to deregulation in 2002, but with any luck, the only impact customers will see is lower bills.

Sometime next year, the state's deregulated markets will switch from what's called a zonal system to a nodal system, a method that changes the way electricity is dispatched throughout the state.

The Electric Reliability Council of Texas is following in the footsteps of other deregulated markets, such as the New England Independent System Operator and PJM Interconnection, which already use a nodal system. California is also in the midst of a switch to a nodal market. But Texas is taking the new system even further by, among other things, instituting a master network model to be used by all market participants in the state.

A study commissioned by the Texas Public Utilities Commission determined that the move to the nodal system, now estimated to cost about $320 million, will save customers as much as $1 billion a year by removing artificial constraints of zones now in place.

Dan Jones, of Potomac Economics, the independent market monitor for ERCOT, said that consumers will benefit from lower prices.

Power generators, however, may come up on the short side of the equation, not so much in lost profit, but in a reallocation of revenues among generating units, Jones said.

Still, the generators have been supportive of the move. The Association of Electric Companies of Texas, which includes the state's largest generators, has supported the move because of the overall system benefits. Some cooperatives and retail providers were opposed to the change, claiming that the system will lead to price disparity.

"It will benefit the stakeholders by the transparency, the allocation of transmission costs and it will dispatch energy more efficiently," said John Fainter, president and CEO of the Association of Electric Companies of Texas, which represents the state's largest generators. "People should have more confidence in it and it should minimize price spikes throughout the system."

Currently, Texas operates under a zonal system. There are four broad zones, and a price for electricity is set within each zone. As a result, power in the north of the state is one price, no matter where in the north the power was coming from and under what conditions the electricity was generated, said Joel Mickey, director of wholesale market operations systems for ERCOT.

"It's like saying that every fire station in one huge geographic area is just as useful to you as your hometown fire station," Mickey said. "The value isn't calculated accurately."

ERCOT charges congestion fees to companies sending power to another zone. The costs are reflected in the balancing energy prices in the affected zones. Such fees aren't charged within the zone, and the cost to manage local congestion is uplifted to all load-serving entities. The system of allocating congestion costs in part led to prices that spiked to $4,000 per megawatt-hour in some zones in May and June.

Under a nodal system, there will be thousands of zones. When ERCOT puts out a call for power, every plant will make an offer to provide a certain amount of power at a certain time of day. When there's no congestion in the system, ERCOT will choose the cheapest generator, no matter where it's located in the state. But as more congestion comes into the system, prices for power will change depending on the location of the power plant and the congestion in the transmission line.

Ultimately, the system should allow generators to more easily determine where new generation is needed.

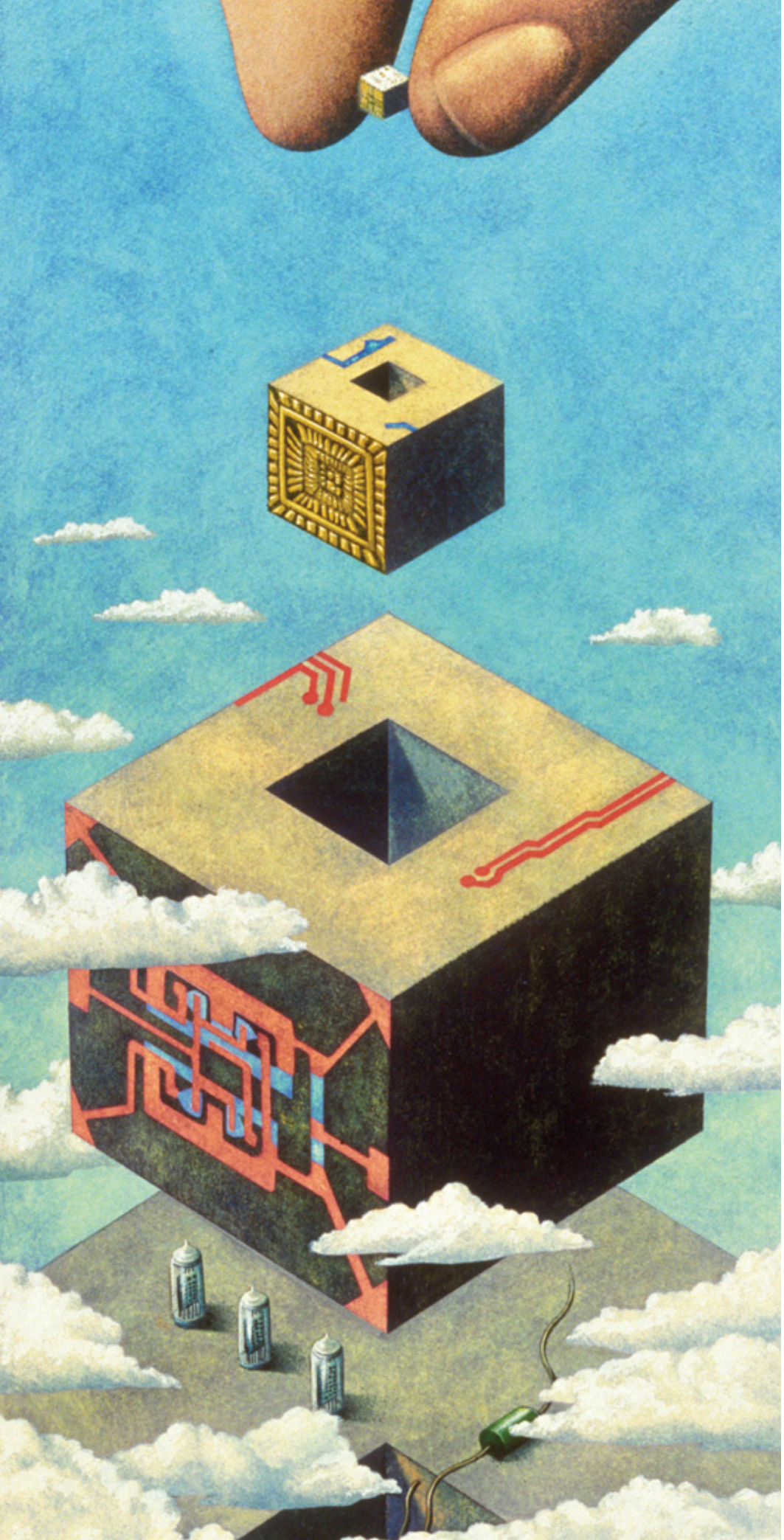
The zonal system is much more granular in detail, Mickey said. Under a zonal system, for instance, ERCOT would have anywhere from 96 to 400 prices for electricity a day. But under a nodal system, there will be about 3,000 to 4,000 prices running through the system every five minutes.

Further complicating the change to the nodal system, ERCOT will also be moving to a day-ahead market, which the system doesn't currently have. ERCOT is also implementing a common model for short-term and long-term planning, a new concept for the electric industry, Mickey said. The new master model will allow the transmission companies, generators and ERCOT to operate more efficiently, he said.

The size of Mickey's staff will double to handle the amount of new information coming in, but the nodal system should make the job of system operators easier because they won't be dealing with the artificial constraints of trying to solve the problem within the zone, Mickey said.

The system was initially scheduled to go live in January, but right now Mickey and others don't even want to guess when the switchover will occur and don't want to rush implementation. There have been successful tests of the nodal system but vendors are still fine-tuning the custom software packages.

"It's such a natural way to do it," he said.



current®

smart grid.
smart planet.™

- ACTIONABLE INTELLIGENCE
- INCREASED EFFICIENCY
- IMPROVED RELIABILITY

smart grid
is now

smart grid
is CURRENT®

currentgroup.com
1(866) 427-0602