

“ALIGNING PUBLIC POLICY WITH ELECTRICITY MARKETS”

Outline of Discussion by
Richard E. Schuler
Professor of Economics and
Civil and Environmental Engineering
Director, Cornell Institute for Public Affairs
IEEE Summer Meetings, Vancouver, B.C., July 2001

While nearly everyone points to deregulation, spiking electricity prices, rolling black-outs, potential utility bankruptcies and generator greed, the fundamental problem with electricity supply is being unable to decide how to decide about siting new generation and transmission facilities. Because of enormous public impacts, these are properly public decisions. And so it is government that should live up to its responsibilities in facilitating decisions on proposed new facilities. But even expeditious action today will not bring additional capacity on line for at least two, more likely four, years. Beyond that, we need to check on the adequacy of gas pipeline capacity, turbine-generator manufacturing capability and gas exploration rates.

So advocates of closing the supply-demand gap through the user side of the market will be correct, ultimately, if new economical electricity supplies are not brought on-line. Economies will stagnate, thereby depressing demand. That is not the way it should be.

Certainly many customers would and could adjust their electricity usage if they were confronted with the true cost of supply (\$1.00/kWh in some instances), but that option still does not exist because of a combination of institutional rigidity (utilities and public agencies need to wake up), technological inadequacy (proper signaling is not widely available) and regulatory, knee-jerk response (inordinately low price caps). The public might respond quite differently to a doubling of their power bills if their prices went up only to the extent that they continued to consume between 10:00 a.m. and 5:00 p.m. on weekdays. Consumers who are eager to play state lotteries may certainly be willing to enter the “price-spike-sweepstakes”.

Markets flourish only to the extent that they are supported by government (e.g. proper government functions regarding property, contract and tort). But if a market becomes a prolonged license to steal, government should intervene. The question is: what kinds and levels of intervention will only make matters worse, as has most recent regulatory action in California. The exercise of market power that brings on a stampede of additional suppliers is good, but if because of technological barriers or in the case of regulatory inaction about siting and permits, entry lags eternally, or if excessive price control intervention dissuades entrants and sustains demand, then a continued exercise of market power will spark further government crack-down.

What form should the intervention take? Killing the markets will only disguise the fundamental problems and may delay the cure, unless government is willing to undertake

a massive, crash power plant construction program. Reasoned price caps (“circuit breakers”) may be a more flexible version with fewer long-run adverse incentives, provided the triggers are not set unreasonably low) may be one way of balancing excessive potential wealth transfers against providing proper incentives to suppliers and customers. Even securities markets stop trading when prices fall (and more recently, rise) too far, too fast, but because we don’t want blackouts, placing limits on offers may be our only alternative. Furthermore, in most auctions where there may be few buyers, the reverse practice of protecting the seller by establishing a price floor is common.

Would some altered institutional structure help? Surely, if we could structure this industry from scratch, the transmission system would be a government-like entity that was planned, with rights of eminent domain, and operated on a broad regional level. Today’s system is like having the freeways and interstate highway system constructed and operated by seven or eight independent toll road companies. And while FERC’s regional transmission organization (RTO) order seems to be a move in that direction, had an RTO been in place this past year, I doubt if any of California’s problems would have been lessened. However, I am willing to bet that without some mechanism to expand and strengthen the existing transmission system on a regional basis, within twenty years, large central-station generation (whether nuclear, geo-thermal or wind-farm) will be a dying breed, as distributed generation sources appeal to individualized market incentives. They may also be much easier to site, since they match users with those abused.

Much has been made about the multiple mistakes made in structuring the California electricity markets, and with the benefit of perfect hindsight, most of those criticisms are valid--particularly the prohibition of long term supply contracts for load-serving entities. Thankfully, however, no federal electricity competition law has yet to be enacted that might mandate the imposition of our ignorance on every corner of the country. Within our federal system, each region is allowed to benefit from the mistakes of others, and in a separate analysis I have described a better market structure that has been deployed in New York. That analysis also enumerates lessons from New York’s brief experience and suggests further improvements that might be tried in other emerging markets.¹

One debate remaining is whether it is better to have separate entities charged with, one, planning and operating the transmission system and the other with conducting the market. Five years ago I argued for the separation of these functions, as is the case in California, and this may be the preferred structure in the long run after stable markets are established. However, having lived through the start-up transition in New York, we observed tremendous coordination benefits derived from having operators and market operators located under one roof and in open communication, alerting each other to potential problems and notifying market participants of opportunities--Laissez-faire does not mean hands off.

Despite all of the turmoil and public attention devoted toward deregulation, three points need to be emphasized. First, system operators have, so far, been able to operate a

¹ Schuler, R.E. (2001), “Electricity and Ancillary Services Markets in New York State: Market Power in Theory and Practice,” Proceedings of 34th Hawaii International Conference on Systems Science.

competitive system reliably, despite the greater variability in line flows under competition, so long as adequate generation is available in locations that are accessible to loads. Second, where locationally specific prices are established and markets are allowed to work, the offers to develop new supplies, where they're needed, are forthcoming. Third, in a comparison of electricity prices in New York the year before and since the initiation of competition, when adjusted for changes in fuel prices and the prolonged outage of a 1000 mW nuclear power plant (Indian Point) that occurred only in the past year, there was little difference in average wholesale costs². So, despite the occasional price spikes and exercise of market power, so far competition seems to have been as effective a monitor of markets as regulators. The primary benefit of markets is that all of the problems become highly visible, and so corrections are encouraged; whereas under administrative allocations, the problems are more easily disguised.

But many more challenges need to be anticipated and managed before deregulated electricity markets can be termed a success. Foremost is finding ways to let customers participate in the market. If the history of response to competition in long distance telephone calling offers any lessons (and the parallels are reinforced by early retail electricity competition disappointments), prolonged delays in customer response to significant price differences may be expected, thereby allowing retail suppliers to share in the exploitation of market power with generators. In terms of institutional structure, if the local distribution company becomes essentially a wires, fiber and cable local service organization, one wonders if substantial economies of scope and coordination might be achievable were that local utility to become the "corner store" providing the natural gas, water, sewer, electricity, and wired information connections between a multitude of competitive suppliers and their final customers. Certainly there are tremendous opportunities to spread and save costs by sharing the same poles and conduits and their climbing and digging. Furthermore, the security of modern urban societies hinges on coordinated management of a wide variety of infrastructure.

However, in the end, the net benefits and costs of substituting markets for regulation will be gauged by the rate and way that technology and products evolve. If twenty years from now, the industry looks largely the same as it did ten years ago, deregulation will probably have not been worth the cost and disruption. The true measure of success will be how many times we can say: "Who would have thought?"

² Study performed by the NYISO's independent market monitor, David Patton of Capitol Economics.