The U.S. Electric Power Industry: Policy Forest and Jurisdictional Trees

*By Vito Stagliano**

Summary

The U.S. electric power industry is in a state of policy paralysis. Many factors have contributed to the stillbirth of reform of this vital economic sector, among them schizophrenic public perceptions of what constitutes a "market" for power; how "competition" is fostered or avoided; what purpose should be served by "restructuring," and what actually constitutes "deregulation." The policy debate has in some respects reverted to 1933, when the New Dealers were forced into a reassessment of the very nature of electric utilities in the wake of the collapse of the monopoly structures that had haphazardly emerged in the initial 50 years of the electric industry[1].

It should be noted that investor-owned monopoly utilities have never been the sole or even preferred public policy option for delivery of electric service to consumers. The power sector has long comprised a multiplicity of organizational structures, including Federal utilities, municipal utilities, rural and urban cooperatives, and even the exceptional, publicly owned and State-supervised utility structure of Nebraska, where investor-owned utilities have never been permitted. This diversity of structural options attests to the century-long debate that has taken place in the United States and abroad on how and by whom electric service should be provided, and consequently to the inherently evolutionary nature of the industry itself.

The limited change that was introduced barely a decade ago in the power generation component of the U.S. power sector, in the form of allowing non-utility, independent generators to build power plants and sell the output at wholesale, hardly merits the "restructuring" terminology that has been applied to it in the intervening years. And yet, a great deal of opposition has emerged in many regions of the nation to the very concept of generators that are not public utilities. Among the reasons for what can only be described as nostalgia for the traditional, staid and previously local[2] utility monopoly, is a lack of clarity about the public policy objectives of the Energy Policy Act of 1992 (Epact), the meaning and consequences of events such as the fateful collapse of the California market in 2001, and a reassertion of ancient rivalries between Federal and State regulatory authorities whose jurisdictional domains over the industry were thought to have been set in stone by the combined Federal Power Act (FPA) and the Public Utility Holding Company Act (PUHCA) of 1935.

The current impasse in the process of sector reform can be attributed, in part, to a utility structure that is predisposed to seek protection at State level when confronted by political change, and cost-of-service regulation to avoid economic risk-taking. Rate regulation provides financial security to monopolies generally, and to electric utilities in particular, because it is typically more forgiving of managerial and operational miss-judgments than is a competitive business model. In rate regulation, the financial risk is borne by the consumers rather than by the monopoly and, consequently, the consequential incentives that usually drive unregulated businesses are either absent or unclear.

The Context

The 1992 enactment of Epact held the promise of evolutionary change in the structure of the power generation sector, allowing, for the first time since the industry was re-organized under PUHCA, an alternative to utility construction and operation of power plants. The alternative thus created, at its most fundamental sought to shift the economic burden and risk of power-plant financing from ratepayers to shareholders, thereby directly addressing the notoriously costly exposure to the previous two decades of utilities' misjudgments on supply forecasts, choice of technology and near pathological inability to control and contain plant construction costs[3]. Yet, nothing in the record of Epact deliberations would lead one to believe that the Congress intended to either "restructure" or to "deregulate" electric utilities. Rather, the aim of Epact's electricity provisions was to introduce a degree of technology, economic and regulatory choice in the power generation component of utilities that would otherwise remain vertically integrated.

With Epact, Congress signaled its displeasure with the performance of traditional utilities, but was careful to narrow the message to the part of the utility business – wholesale generation - whose regulation was and remains clearly within Federal jurisdiction of both electric sales for resale and interstate commerce. The "deregulation" of retail power markets, which ensued in the wake of Epact, beginning with California and subsequently in New England and in a total of 17 States and the District of Columbia[4], was and remains entirely the initiative of the States, and exclusively within their jurisdiction. That the record of retail deregulation has been mixed, at best, attests to the difficulty of finding value in the change of a system that even when "deregulated," appears to require no less regulatory oversight than in its previous state.

It was furthermore not the intent of the Federal Energy Regulatory Commission (FERC) to "restructure" the power sector when, in 1996, it issued its landmark Orders 888/889, which, in line with the Epact statutory mandate, created the standard, subsequently upheld by the courts, of non-discriminatory open access to the transmission system. Access to the grid – the interstate highway for electrons - is, of course, the condition precedent to the participation of non-utility generators in the power sector. Such access, fair and equitable and non-discriminating, is essential to the creation of a viable business model for non-utility suppliers regardless of what other elements of the power sector structure are changed or restructured or deregulated. Experience has shown that competitive generation is unlikely to be institutionalized in the U.S. power system, until and unless, transmission owners provide service on terms and conditions that are both equal and enforceable for all market participants.

Orders 888/889, *per se*, created neither wholesale power "markets" nor a competitive generation sector. Rather the Or-

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See footnotes at end of text.

ders established the regulatory framework that enabled such markets and competitive processes to come into being. Epact and the Orders, together, assisted the power generation sector to evolve from the highly constrained model created by the Public Utilities Regulatory Policy Act (PURPA) of 1978. PURPA allowed independent generators to build power plants of particular sizes and technology, and allowed them to sell the output of those plants solely and exclusively to the utilities to which they were interconnected. Epact essentially eliminated all of the conditions imposed by PURPA, while still allowing PURPA facilities to continue to be constructed.

It is important to note that the first electric energy market to become operational in the United States was not created by Federal mandate or regulation, but was, rather established by a legislative act of the State of California. The California initial market, in all of its innovation and flaws, set in motion "restructuring" forces of far greater power than any till then unleashed by the FERC. The mid-Atlantic region followed suit with the design of the PJM Interconnection Independent System Operator (ISO), the first regional (multi state) transmission organization capable of transforming itself into, thus far, the most durable and sophisticated market structure in North America. New England, New York and Texas followed, and then, much later, the Midwest ISO.

In 2005, nearly 50% of American consumers are served – well, for the most part - by structures that did not exist a decade earlier. These structures - so-called ISOs and regional transmission organizations (RTOs) – seek to fulfill the FERC's fundamental objective of non - discriminatory open access to the transmission grid. More importantly for consumers, ISOS/RTOs administer competitive wholesale markets for electric energy, which have proven to be the only effective alternative to regulated cost of service rates. The effects of competition at wholesale have been both remarkable and ambiguous, when viewed in the context of the experience with States' experiments with retail markets and related restructuring efforts, which have, not incidentally, frequently been linked to economically counter-productive but politically expedient imposition of extended freezing of retail rates[5].

Energy Information Administration data show that average national electricity rates were 7.1 cents per kilowatthour in 1993 and 7.4 (constant) cents per kilowatthour in 2004. These rate ranges represent the remarkable part of the achievement because their long-term stability, and notwithstanding recurrent short term price volatilities in the wholesale part of the market, stands in marked contrast to the increases experienced in the same period in the price of the essential fuels that are used to produce power: coal prices have nearly doubled, natural gas prices have more than trebled and oil prices have risen from less than $20/barrel to over $50. The contested part of the achievement – and concurrently the confusion-causing part of the public discourse – is the extent to which "restructuring," or "deregulation," or "competition" accounts for the noted effect on rates.

Regions such as the South, which have experienced neither restructuring nor deregulation nor meaningful competition at wholesale, will argue that the generally reasonable electric service rates their citizens enjoy are due to adherence to the monopoly utility model, and related prudent state regulation of these monopolies. Pacific north-westerners will argue that they would have continued to enjoy the reasonably priced (albeit Federally subsidized) electricity generated by Federal hydropower, had they not been "victimized" by the unmitigated flaws and eventual collapse of the California market[6]. Northeasterners tend to believe that they have benefited from the restructuring[7] of their utilities, to some extent by moving to a complex form of retail competition, and more generally because of their well functioning but still evolving wholesale markets. Texans believe they have derived measurable economic benefits from their restructuring efforts, but continue to debate the relative merits of a market structure that, despite their efforts to find State-specific alternatives, is moving inexorably towards the model perfected by the PJM Interconnection. As to the Midwest—its long road to a functional ISO and market structure and its limited retail level "deregulation" remain, in essence, economic promises to be fulfilled, based on costs that have already been fully incurred.

The South and the West have led what can only be described as a rebellion against any further restructuring of the power sector, which, in their view, was spearheaded by the FERC and, if allowed to persist, would have resulted in unacceptable incursions on the State's jurisdictional prerogatives. Perhaps understandably in light of recent history, perceptions, in these two regions, often outweigh facts in regard to regulation of the power industry. It can be argued that, as a practical matter, the FERC has shown rather exceptional deference to the insistence of the two regions to retain a monopoly model that has not only prevented the emergence of a competitive wholesale market, but has in the process protected behavior on the part of local utilities that has repeatedly been found to be discriminatory in regard to access to the transmission grid, and to procurement of incremental supply. The South has no power markets whatsoever, but enjoys an extraordinary surplus[8] of generation capacity that was spurred and built on the promise of Epact, and *in spite* of the protectionist State regulation of the industry. The excess capacity represents a de facto wholesale market structure whose downward pressure on prices allows these non- restructured states to keep retail rates low and reasonable.

The West has not yet recovered from its California/Enron post-traumatic market syndrome. With the exception of Montana, most states in the region have indefinitely postponed restructuring/deregulatory initiatives as well long-gestating efforts to create regional transmission organizations and centrally administered markets. The West-wide wholesale *bilateral* market for power, by contrast, which recovered within weeks of the California market collapse, remains a major contributor to the highly competitive electric energy prices that the region's consumers could see reflected in their monthly service bills, were it not for the miss-judgments of many of their utilities in reaction to the California market volatility and eventual collapse. That is to say that too many utilities in the West negotiated multiple high-cost, long term supply contracts at the height of the market's dysfunction, unable consequently to take advantage of the market's correction, and were subsequently forced into seeking -- from their State regulators, or from their members in the case of public power entities -- significant increases in retail rates to finance the blunders. As in the South, the wholesale power market of the West worked, and works effectively, in spite of

the behavior of market participants - utilities in the main – who seem unable to master market fundamentals.

Utilities and State regulatory officials in states that have resisted industry reform in any guise frequently resuscitate the long-buried California market to justify the continuation of the vertically-integrated monopoly model, as if there were no other option available in the rather wide spectrum of electric system structural organization. The evidence suggests, rather, in the wide policy space between California and Armageddon, that a number of structural models have been developed in the U.S. and abroad that concurrently – and by design – make the system economically more efficient, enhance reliability, and actually serve the best interests of consumers. It is consequently not necessary for policymakers to believe that the only options available to them are either the experimental, short-lived and *un-replicated* California market model OR a 19th century franchised monopoly model.

To ensure that consumers benefit from competition, it is not necessary to actually restructure or de-regulate the power sector. It is however necessary to insist that all market participants, native utilities, especially abide by competitive rules of behavior. Competition can be broad or narrow in scope. It can be limited to a State-run procurement process for new generation capacity, or an auction to procure supply for retail load. Competitive functions can be established within or outside the scope of an ISO/RTO, but they cannot be established on a foundation of embedded institutional self-dealing.

When utilities' earnings are based on return on equity for capital expenditures, an insurmountable bias ensues for utilities to build their own plants and roll the investment into their rate base, rather than procure the same capacity on the open market, and simply pay the market price. Functions subject to competition can range across the entire utility business—restructured or not –and can include daily or weekly procurement processes for energy or capacity or both; market-based settlement of imbalance charges; competitively procured reserves to satisfy reliability requirements, and procurement of ancillary services. Even metering and billing can be competitively procured, as can any number of operational and maintenance functions currently embedded within the typically over-staffed bureaucracies of monopoly structures.

History teaches that there is no true economic alternative to competition in the procurement of goods and services, indeed that even the most efficient monopoly can be made more cost effective for the consumers it serves, by exposing any aspect of its functions and behavior to forces in the marketplace. It follows therefore that the clearer, least ambiguous policy objective for the achievement of the superior electric power sector of the future should be the institutionalization, in regulation as in business practice - of the concept of competition. The concept, it can be argued, can be institutionalized by any number of means, including a process of "restructuring" or "deregulation," or regulation by other means, such as the requirement by States that all market players, but especially native utilities, procure and deliver all goods and services according to unequivocal competitive rules and practices, with no exceptions, no caveats and no codicils.

History can also teach nothing, if the public discourse premises that all structural models have equal merit. Various structural models deliver performance relative to expectations, but it matters a great deal if the expectations are set by consumers or by regulators acting on consumers' behest, or by Wall Street, or by utilities themselves. As a practical matter, consumers do not yet directly participate in the various market structures that serve them, and do not therefore directly affect prices. In reality, proxies perform the consumers' demand function. These are utilities acting as load serving entities, aggregators, or retail service providers that secure supplies on behalf of end-use customers. Customers remain unable to obtain service tailored to their needs. Proxies can be appropriate market players, but only to the extent that they facilitate the development of differentiated products that meet the different needs of consumers. They are less than useful when they enter the market to deliver rate-frozen bundled services, or when they act as mere collector of utilities' stranded costs. Notwithstanding the enormous effort that has already been invested to reform the power sector, current conditions illustrate the limitations of the "restructuring" that has occurred thus far and the relative immaturity of the market structures that have actually been created.

Neither restructuring nor de-regulation are ends in themselves, and should not therefore be treated as end states. They are, rather, means to the end of delivering superior service to consumers. Competitive procurement practices are also means to value creation for consumers, as are regimes that objectively set the order of economic merit for the dispatch of energy from all generating units available to any given local system. Markets are also means to the same end, and their evolution and perfectibility contribute to the discovery of prices that can be used as a frame of reference for judgment of all other forms and structures that regulators might consider.

In sum, the present state of the power sector – neither proverbial fish nor fowl – represents an unsatisfactory policy state, most importantly because the key players in the marketplace engage in a game with variable rules on the basis of unequal handicaps. Native utilities can be, concurrently, native monopolies and unregulated market participants; they can own and operate their proprietary transmission systems and unilaterally determine the conditions under which they will provide service to others; they can procure goods and services competitively or not, and they can typically avoid managing the volatility of the fuels they use, by simply passing those costs to their customers. Independent producers of power neither have nor can obtain rate protection for their costs of production, do not own or operate transmission systems, and can only participate in processes and markets administered by others. The playing field, in sum, is rather crevassed and stony, and hardly the field on which to plant the seeds for the next phase of the reform of a sector of the economy without which modern life is virtually unthinkable.

Footnotes

1 Thomas Edison's "age of electricity" was launched when he energized the Pearl Street Generation Station in lower Manhattan in 1882. Samuel Insull subsequently consolidated the industry, accepting regulation as preferable to what he called "debilitating competition." New York and Wisconsin were the first States to regulate the electric industry, beginning in 1907. Federal regulation did not begin until 1920 when the Federal Power Commission was established.

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