Reinventing Electric Utility Regulation

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CHAPTER 4

Lessons Learned in State Electric Utility Regulation

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The last quarter century has seen the transformation of state public utility regulation from a nearly invisible institution to a force that has galvanized the general populace and various interest groups. Interest groups have expended substantial resources advancing their positions before state public utility commissions (PUCs). The mission of state regulators has never parted from balancing the economic well-being of various interest groups in a way that serves the overall public interest. During the last quarter century, this mission has become much more difficult to execute because of changed political, economic and technological circumstances.

This chapter focuses on four topics. First, it summarizes the major events that have affected the electric power industry over the last quarter century. These events can be classified as technological, economic, political and legislative/judicial. Second, the chapter identifies the general responses of PUCs to these changes. The third part of the chapter assesses how well PUCs performed during the turbulent years. Both what seemed to work—and not work—for PUCs, in addition to reasons for these outcomes, are addressed. Finally, as the electric power industry moves toward competition, PUCs will play an important role in helping to shape the transition. This chapter ends with the major lessons from past PUC actions that may provide guidance during the transition.

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HISTORICAL EVENTS: THE PAST TWENTY-FIVE YEARS

During the past twenty-five years, the US electric power industry has undergone major changes. The following three distinct subperiods occurred in succession. They are labelled here the:


A harbinger of later events emerged during the late 1960s. During this period, the rate of productivity growth started to decline as technological advances slowed and economies of scale in generation eroded. The previous continuous improvements in the industry’s thermal efficiency in producing electricity came to a standstill. Further, the industry’s unsuccessful experiences with advanced coal generation technology during the early 1970s suggested that technological advances in power generation no longer favored large-scale generation facilities. This technology—which was ultimately abandoned by the mid-1980s—failed because of its poor reliability, low thermal efficiency and high construction costs, at the same time low growth in electricity demand was occurring. The late 1960s also saw the beginnings of an environmental movement that pushed up the cost of electricity generation and, by adding equipment that did not add electricity output, slowed down productivity growth in the industry.

Changed conditions in the late 1960s, notably high inflation and interest rates, started to have a strong upward effect on electricity prices. In 1970, for the first time in decades, electricity prices stopped their decline and began to increase. With the Arab oil embargo in 1973, oil prices rose dramatically, threatening the utilities’ financial condition. Not surprisingly, electric utilities started to request rate increases to maintain financial viability. While PUCs generally approved of these increases, regulatory “friction” began to show itself. Electric utilities’ financial conditions deteriorated; for example, the industry’s average common stock market-to-book ratio declined from 200 percent in 1968 to about 110 percent in 1973. The “quiet days” of state public utility regulation were rapidly coming to a close. Regulators began to become more active in responding to the embryonic cost-increasing conditions that would soon accelerate beyond anyone’s expectations.

The “Upheaval” period took state regulation to a level of unprecedented turbulence. A concatenation of circumstances put state regulators in an unenviable position over the 1974–1984 period. The events included unstable and inflationary macroeconomic conditions, the oil-price shock, the slowdown of electricity demand growth, and the increased economic attractiveness of small-scale generation units. Significantly, the average cost of electricity generally increased as utilities added new generation capacity. The reversal to decreasing returns to scale placed great pressure on utilities to petition for rate increases while they were completing or constructing new generation facilities. During the period 1973–1980, electricity prices rose at an average annual rate of 10 percent.

The dramatic slowdown of electricity demand growth (from an annual rate of 7–8 percent during the 1950–1973 period to about 2–3 percent shortly afterwards) had two negative effects. First, for many utilities it resulted in high capacity reserve margins or low utilization rates. Regulators and interest groups questioned whether utilities made imprudent planning decisions and should, therefore, absorb part of the costs associated with new high-cost generation capacity, rather than collect all costs from rate-payers. Second, lower growth of electricity demand reduced the revenues that utilities expected to receive from new capacity additions. This change induced many utilities to request rate increases that would compensate them for the unexpected decline in demand growth.

The improved economics of small-scale generation units began to undermine the assumption that “bigger is better” and that only vertically-integrated utilities could build new generation facilities. The passage of the Public Utility Regulatory Policies Act of 1978 (PURPA) was the federal legislative response to a changing perception: smaller-scale generation facilities owned and operated by nonutility entities could provide the country with an economical source of new capacity. PURPA, in effect, triggered a series of events that helped to reshape the future structure of the electric power industry.

Overall, the ten-year period ending in 1984 was dismal for the electric power industry. The financial performances of utilities—especially those building new high-cost generation facilities—were generally poor. Most utilities earned below their allowed rate of return, saw their interest-coverage ratio plummet, and experienced a common stock market-to-book ratio of less than 100 percent.
Table 1. Recent Periods in the Electric Power Industry

1969–1984 “Upheaval”
- Decline in productivity growth and slowdown of technological advances
- Unstable and inflationary economic conditions
- Surplus generation capacity
- Oil embargo and price rise
- Slowdown of electricity demand growth
- Widespread financial problems for utilities
- Passage of Public Utility Regulatory Policies Act of 1978
- Increasing-cost industry
- Increased economic attractiveness of small-scale generation units

- Rapid growth of nonutility generation capacity
- Slowdown of utility generation construction
- Improving utility financial position
- Low inflation
- Rise in capacity utilization
- Push for industry and regulatory reforms
- Expansion of utility’s social obligations
- Completion of nuclear construction programs

- Passage of the Energy Policy Act of 1992
- Transition-to-competition issues
- Threat of retail competition
- Open wholesale transmission access
- Utility restructuring
- Utilities prepare for competition
- Emergence of broad-based incentive regulation

The “Upheaval” period produced new perceptions and opinions of regulation. First, it markedly politicized the regulatory process: both regulators and consumers became concerned about the level of electricity prices, and, consequently, about the profits that utilities were earning. Previously, utilities earned relatively high profits but virtually no one cared much

because electricity prices were low and falling. Now, regulators were facing a catch-22 situation over which they had little control. They would provoke consumer opposition by granting full recovery of a utility’s costs, which might be necessary if the utility is to be made financially sound.

Second, general support for regulation eroded as interest groups, including utilities and consumer advocates, felt betrayed by regulation. They started to push in different directions for major reforms, including incremental competition in the power generation sector and a new planning paradigm for electric utilities.³

Third, regulators themselves began to realize that the status quo was no longer economically or politically acceptable. Doing nothing, in other words, was seen as failing both an economic test and a political test. As discussed later, regulators adapted to the changed environment by enforcing new practices and policies. One important regulatory response was a change in the interpretation of the so-called regulatory compact: regulators were inclined to shift to shareholders more of the risks relating to a utility’s management decisions and, in some instances, to market conditions.

The second period, “Transition” (1985–1990), saw electric utilities’ financial performance improving while, at the same time, a political consensus was forming for major regulatory and industry reforms. During this period, utilities did little building as they perceived—given the risks they faced—the expected returns on new investments to be excessively low. When they did build, they tended to concentrate on low-risk projects with short lead times and low capital intensity. Around the mid-1980s, Wall Street was in effect saying to utilities that their bonds and stocks would be downgraded if they built new large-scale generation facilities.

The 1985–1990 period saw the development of two conflicting concepts: the push for a more competitive electric power industry and support for a centralized approach to utility planning. Most state commissions looked favorably upon the entry of new nonutility generation. Nonutility generation capacity doubled from 1985 to 1990.⁶ Many state commissions also allowed utilities to be more competitive by offering special rates or contracts. Unlike the “Upheaval” period, the later period saw electricity prices shifting in favor of industrial customers. (In the earlier period, for example during 1973–1980, the price of electricity for industrial customers rose at an average annual rate of 15 percent, while rising at less than 11 percent for residential and commercial customers.)
In another development, PUCs started to enforce power procurement mechanisms (e.g., auctions for new capacity). In 1984, Maine was the first state to institute such a mechanism. Other states started to follow Maine's lead. The popularity of competitive bidding mechanisms sprung from their ability to limit power-supply offers from PURPA-qualifying facilities and the price paid by utility buyers to a market-based level. The administrative avoided-cost pricing methodology that prevailed previously resulted in many utilities buying power from PURPA-qualifying facilities at above-market prices.7

During the time that competitive pressures were appearing in the electric power industry, the concept of integrated resource planning (IRP) started to emerge. IRP, originally referred to as least-cost energy planning, attempted to require utilities to place all possible resource options on a "level playing field" and to consider these options on the basis of minimizing the cost of energy services, such as cooling and space heating. In the most recent version, IRP broadens the definition of cost to account for utility, consumer and environmental costs. IRP also was intended to allow more up-front PUC and public participation in the development of periodic utility plans. Accordingly, IRP was seen by proponents as a road map for meeting the future demand of energy services in the most cost-efficient manner.

Critics like to depict IRP as nothing more than a form of government planning that imposes the will of special interest groups onto society. They generally view IRP as an inferior institutional arrangement, in comparison with market forces, for attaining specific social objectives. The debate over IRP continues to this day.8

In any event, IRP was widely instituted at the state level. As a consequence, electric utilities began to perceive their role as energy service companies in the business of selling both megawatthours and "negawatthours" (that is, energy conservation). IRP was part of the general trend during the 1985–1990 period that broadened the definition of the public interest. Utilities increasingly got involved, as discussed in the next section, in such activities as economic development, low-income assistance and environmental improvement. Governors, state legislatures and different interest groups became actively embroiled in the regulatory arena. Public utility regulation became perceived as an institution that could advance social objectives that went beyond the pricing, reliability, safety, and other dimensions of traditional utility services.

The last period discussed here, the "Transformation" period of 1991–1994, saw the spread of competition within the electric power industry. The Energy Policy Act of 1992 became the legal foundation for a new federal role with regard to advancing competition—particularly at the wholesale level—in the electric power industry.9 One goal of the Act was to stimulate a more competitive and less vertically-integrated electric power industry. As part of the Act, amendments to the Public Utility Holding Company Act of 1935 (PUHCA) were enacted to lift barriers to the development of wholesale power facilities by both traditional vertically-integrated utilities and independent power producers. Changes in the Federal Power Act (FPA) greatly expanded the authority of the Federal Energy Regulatory Commission (FERC) to order wheeling of wholesale power over a wide range of conditions.

Most recently, the push for retail competition further expanded the potential reaches of competition in the electric power industry. Retail competition raises fundamental regulatory and economic issues that will have significant ramifications for the future structure and performance of the industry.10

During the last few years, industry restructuring has also emerged as a major issue. Pressure will continue to mount for divestiture of utility assets to further diminish the high degree of vertical integration within the electric power industry. Whether the industry can be highly vertically integrated and competitive at the same time will become a key area of state and federal debate in the years ahead.

During the 1991–1994 period, regulators, consumers and utilities also saw the industry moving faster toward competition than what was previously anticipated. The question of when, not if, has dominated the debate over the future existence of strong competitive forces in the industry. It is widely acknowledged that the industry is undergoing a transition toward broad-based competition. Regulators and utilities alike are preparing for the future.11 Regulators are beginning to look at new rate-making paradigms that are more compatible with a mixed competitive-monopoly environment. Utilities have started to position themselves so that they can better compete in the future. Some have, for example, begun to reduce their costs, restructure their operations, and petition their state commissions for performance-based regulation that gives them more pricing flexibility and opportunities to earn higher profits.12
GENERAL RESPONSES OF REGULATORS

The responses of regulators can be grouped as: (1) Departures from traditional regulation; (2) Pluralism; (3) Regulatory compact; (4) Pricing; (5) Social concerns; and (6) Planning.

Departures from Traditional Regulation

Taking as our time period the last quarter century, this section deals with the general lines of response by state regulators to the external events identified. As mentioned, these events were sometimes global (e.g., the oil embargo and international inflation), sometimes philosophically based (e.g., the rise of resource conservation, environmental, and social welfare considerations), and sometimes attitudinal (e.g., widespread belief in governmental ineptitude and renewed belief in market solutions).

Although all period demarcations are arbitrary and their characterizations imperfect, we adopt the three from the last section to organize the discussion. In sum, the first period was characterized by dramatic escalation in costs and prices, dampened demand, excess capacity and genuine financial problems for the utilities; the second was characterized by rapid growth of nonutility power generation, a quantum jump in the social and developmental tasks assigned state regulators, and the beginning deintegration of the electric power sector in the face of policy changes and the oligopsony power of large consumers; and the third was characterized by major restructuring of the electric sector, focusing on increased competition in the generating sector, transmission access issues in the transport sector, and most recently, direct retail access in the distribution sector.

If the current ("Transformation") period can be characterized by nearly wholesale departures from traditional rate base regulation (TRBR), the prior two periods witnessed selective, but important, departures. During "Upheaval" public utility commissions introduced or featured various devices to prop up utility finances. These included allowing construction-work-in-progress (CWIP) into plant valuation as a swap for the more benign (for ratepayers) approach of allowance-for-funds-needed-during-construction (AFUDC). These devices also included substitution of future test years and "trended cost" for historical test years in cost calculations, the advent of automatic adjustment charges (both fuel costs and purchased gas clauses) in contradiction to evidentiary hearings, restrictive time limits by which filed rate cases must be resolved and "pancaking" of proposed rate hikes (that is, filing another rate request before a pending request has been resolved).

Further, selective departures from TRBR were added or intensified in the "Transition" period. These included deeply discounted rates in the face of surplus capacity, allowance of utility diversification into germane (and often nongermane) affiliated activities, increasing use of contract pricing over tariff pricing, the practice of unbundling costs and prices as against system averaging, a weakening in cost-of-service pricing in favor of value-based pricing, and the explicit introduction of various safety net schemes addressing the affordability of service for low income customers. Of course, in the "Transformation" period these largely cumulative changes were joined by broad departures like a shift from negative incentive (e.g., disallowances lowering the rate of return for poor behavior) to positive incentives for a wide array of desired outcomes. Relaxing profit controls, "split the savings" arrangements of various kinds, erosion of the obligation to serve along with territorial exclusivity, and a heightened uncertainty of cost recovery for the utility stand in stark contrast to the tenets of traditional regulation.\(^{13}\)

Pluralism

In the late 1960s, the parties to public utility regulation were still few in number. Utility managers represented the companies and their stockholders. Commissioners and their staffs looked after the interests of ratepayers, perhaps especially the residential class. Major industrial customers enjoyed congenial relations with their business counterparts at the monopoly supplier—uncomplicated by unseemly quarrels with other classes of customers or sharp competitive pressures. The general rate cases that did occasionally arise were typically settled bilaterally without a great deal of turmoil and with little attention to rate design (as opposed to levels of rates).\(^{14}\)

All this changed in the early 1970s with the combination of the Arab oil embargo and double-digit inflation and interest rates. Consumers—used to the benefits of seemingly endless productivity gains, scale economies, and stable or declining electricity costs—were confronted with dramatic, sustained cost and price increases. The response was a surge of attention to PUCs as handy focal points of "the problem." Legislatures began to intrude into commission actions in setting policy and prescribing outcomes. Governors' offices, previously concerned mostly that "there be no trouble at the commission," now took a more active role in regulatory matters. Attorneys representing varied clients intervened frequently as a party to PUC cases, and the journalistic community was attracted to developments at commissions.
Table 2. Regulatory Responses to Events

1969–1984 “Upheaval”
- Risk shifting to utilities
- Regulatory activism
- Movement away from average-cost pricing
- Implementation of partial incentive systems
- Attenuation of regulatory lag
- Accommodation of limited competition
- Reinterpretation of “regulatory compact”
- Protection of small customers
- Retention of balancing-act aspect of regulation

- Rapid growth of centralized planning
- Increased emphasis on achieving social objectives
- View of utilities as energy service companies
- Support for competitive power procurement mechanisms
- Rate tilting in favor of industrial customers

- Consideration of broader-based competition
- Increased emphasis on promoting economic efficiency
- Consideration of a new rate-making paradigm
- Reassessment of promoting social objectives
- Recognition of strong competitive forces

For their part, consumer groups of various kinds—sometimes privately funded, sometimes publicly funded—were formed. A kind of “class warfare” ensued as groups representing industrial and commercial customers and those representing residential customers attempted to shift the rate increases to one another. “The consumer movement” was launched, and Offices of Consumer Counsel (under various names) were created by legislatures or added to commission structures for residential ratepayer protection. The appearance of intervenors in commission cases—previously a fairly uncommon occurrence—became routine and widespread. Even federal agencies became intervenors in cases where a major facility such as a military base was affected by proposed rates increases in that locale. And, finally, a whole new “industry” of utility consultants appeared to service all the new parties in the PUC arena.

Starting in the “Upheaval” period, the phenomenon of pluralism in utility regulation flourished in the “Transition” period. While it continues as a force, it is at least questionable whether pluralism will remain as big a factor in the “Transformation” period. The (relative) infrequency of general rate cases, the movement toward alternative (relaxed) regulation, the advent of stable prices, the elaboration of competition in the electric sector, and the erosion of jurisdictional authority from state to federal arenas could somewhat diminish participation.

Regulatory Compact

Variously labeled “the regulatory compact,” “the regulatory contract,” or “the regulatory bargain,” the long-standing reasonable expectations of the parties to the bargain were markedly changed during the “Transition” period. Relatively intact in “Upheaval” and now either understood differently or with a new bargain developing in “Transformation,” the decade of the 1980s represents a period when the presumptions cracked and some (though not all) crumbled.

Never legally sanctioned, the regulatory bargain was usefully viewed by all as involving a substantial assurance that all utility expenditures would be recovered over a reasonable period of time together with a profit appropriate to the modest risk incurred; and that the companies would enjoy territorial exclusivity for their monopoly operations. In exchange, the utilities would provide affordable, reliable, universal service in a nondiscriminatory fashion and with some special attention to the social goals of the commission.

PUC actions broadly pointed at efficiency and cost control in the electric power sector unquestionably have altered the bargain. Utilities believe that the introduction of competition in the generation and distribution sectors and the movement toward open access to their transmission lines have severely harmed the integrity of their operating franchise. They also feel that the frequent application of the “used and useful test” and the “prudent investment test” during the period undermined the other major element of the bargain, namely, assurance of recovering their investments. Among the industry’s reactions have been a deeply felt aversion to investing in new plant, contentions that their obligation-to-serve and supplier-of-
last-resort status is lessened, attempts to get commissions to adopt preapproval schemes, and arguing that the new risk/return ratio significantly disfavors them.18

There is, of course, some merit to the electric sector’s decrying of the disintegration of certain aspects of the regulatory bargain. It is fair to say, however, that the electric utilities also changed their side of the arrangement. Traditional regulation at its height did not contemplate utilities diversifying into non-germane or conglomerate activities, recreating holding company structures to allow forum shopping and avoidance of social oversight, and establishing all sorts of positive incentive devices pointed toward the retention of abnormal profits.19

**Pricing**

During the “Upheaval” period utility commissioners gave significant attention to rate-base valuation and setting the rate of return to yield the revenue requirement; but particularly during the early part of the period, they tended to give the companies more discretion over the actual design of rates. The general expectation was that a rate structure that would spread the pain with the least amount of squawking would be applied. This meant an electric pricing structure that involved average costing, often some cross subsidizing of residential customers, bundled services, and steeply declining usage rates.

By the early 1980s, with PURPA implementation at its zenith, the focus had drastically shifted. A new cost consciousness coupled with a quest for efficiency saw the beginning use of marginal cost, unbundled pricing, avoided cost calculations, experimentation with seasonal and time-of-day rates, interruptible rates and a move toward flat rates (some even argued for increasing block rates on conservation grounds) in company tariffs.20

Consumer protection mechanisms were devised for income maintenance, like safety nets for the poor, lifeline rates, and levelized billing practices. As the distinction between core and noncore customers became more pronounced with its many implications, large electricity users were able to secure discounted deals in the form of “economic development” rates and “economic retention” rates intended for attracting and keeping industrial customers in state and on the system. As mentioned, contract pricing often replaced tariff pricing; and the captive customer tended to become the payor of last resort in meeting the utility’s revenue requirement and keeping the company financially whole. Now in “Transformation,” value-based pricing and real-time pricing are major themes and the price-cap approach is being borrowed from the telecommunications sector.21

**Social Concerns**

Largely unsought by regulators, PUCs evolved during the “Upheaval” and “Transition” years into important instruments in social engineering well beyond the rather narrow confines of protecting consumers from the abuse of monopoly power in the provision of essential services. It is perhaps a testimony to the flexibility of the concept and the adaptability of the commissions that their purview was so readily widened.

PUCs became responsible in one degree or another for conservation (of both capital and fuel inputs), environmental improvements in terms of clean air, clean water, and even the medical science issue of the potential effects of electromagnetic fields (EMFs). On the economic front, matters of allocative efficiency, “correct” price signalling, industrial location and employment, mergers and acquisitions, and income maintenance for the poor came, and are still, before PUCs and with a frequency unprecedented. How many of these concerns of PUCs will survive the “Transformation” period remains to be seen. One might expect that increased reliance on competition and concurrent retrenchment in regulation might occasion some pull back or modification of these newer responsibilities.22

**Planning**

Not mentioned in the immediately prior section is the changing role of PUCs in utility company planning. Prior to the “Transition” period commissions issued (as needed) Certificates of Public Convenience and Necessity, passed on utility initiated capacity expansion, and sometimes participated in power plant and transmission siting questions. By and large it was left to utility managers to arrange to meet electricity demand under the presumption that was their job and the activity was in (or at least very near) the “management prerogative” category.

Partly in reaction to enormous surplus capacity, overbuilt and overpriced nuclear plants, and poor forecasting (by virtually everyone) of growth in the demand for electricity, PUCs became increasingly involved in utility capacity planning from the mid-1980s onward. Some parts of the PURPA legislation facilitated this move. Into the language came terms (with their acronyms) like Qualifying Facilities, Small Scale Hydro, Cogens, followed later by Independent Power Producers, Nonutility Generators, Exempt Wholesale Generators, Gencos, Transcos, and Discos. Also new analytical frameworks and approaches were widely (though not universally) adopted by commissions, namely demand side management (DSM), least-cost utility planning (LCUP), and IRP. PUC involvement in devising, fostering, and indeed, insisting upon this new planning paradigm...
requires a major commitment of commission staff resources, considerable hearing time, and some risk of being coopted in the process. On the other hand, such an activist stance fits well with the general preference of most current regulation to participate broadly, shape rather than react to events, and to pursue the efficiency criterion for this industry.

AN ASSESSMENT OF REGULATORY RESPONSES

Since the “Upheaval” period, PUCs have faced the serious challenge of promoting the public interest, traditionally defined as the long-term interests of utility customers. Regulators have found it more difficult to balance the public interest with the opportunity of utilities to be financially sound and the right of customers to affordable utility services.

Interest groups of varying constituents and ideologies have attempted to pull state regulators to their side, with the rationale that society at large would be best served. For almost all regulatory matters involving large sums of money, opposing sides are expected to expend substantial resources in providing information, making arguments and taking positions that are consonant with their respective interests. Since the “Upheaval” period, this expectation has become a vivid if not agreeable reality for state regulators.

Although it is difficult to give grades to PUCs on their performances over the last two decades, several general observations can be made. The major criterion for assessing the performance of a PUC should center on how well it has served the long-term interests of utility customers. After all, the rationale for public service regulation has been to protect customers from the monopoly power of utilities.

As a general and highly important response during the "Upheaval" period (1969–1984), PUCs modified their traditional practices (as discussed in the previous section) to accommodate the inflationary forces that afflicted the electric power industry. They tried to insulate utility customers from the full shock of cost increases, while at the same time requiring utilities to maintain an acceptable financial condition.

Were PUCs successful in achieving this objective? Given the economic and political circumstances at the time, it is probably fair to say they did as well as could be expected. It should be added that their actions had some negative, as well as positive, repercussions for the electric power industry and the future status of public utility regulation. An explanation follows.

Starting in the late 1970s, PUCs ascended to public visibility with state legislatures, governors and even the courts becoming actively involved with public utility matters. PUCs lost some of their independence by becoming more susceptible to political forces. These political forces incorporated the interests of utilities, consumers, environmentalists and the federal government (in its enactment of PURPA in 1978). Being pulled from all sides, PUCs had to make what they considered decisions that achieved a "correct" balancing of the special interests.

Just how well PUCs performed, of course, can be debated. From the utility side, PUCs caved in to consumer advocates. From the consumers' side, PUCs excessively insulated utilities against poor management practices. Perhaps, then, it can be said that PUCs performed well because they did not please anyone completely. Although admittedly a rough test to judge PUCs' performance, it suggests that regulators played the "balancing act" role that they were mandated by law, as well as taught by economics, to play. It can also be said that during this difficult time the bankruptcy of utilities was virtually unheard of, electricity was still affordable to the vast majority of people, and the lights did not go out.

In the course of achieving the balancing act, PUCs laid the foundation for what was to come later. Specifically, although they did the best they could under the circumstances, consumers and utilities became skeptical of the prevailing order: regulation was seen as being out of equilibrium. As discussed later, both groups started to believe that restructuring of the electric power industry would be more acceptable than the status quo. The economic theory of regulation would predict this restructuring is likely to occur when changes either in political power or market conditions dissipate much of the benefits to the various stakeholders under existing regulation.

Specifically, beginning in the 1980s, utilities recognized that competition and industry restructuring could be preferable to state regulation. Consequently, the seeds of political forces supportive of major industry reform started to sprout. More utilities, especially by the mid-1980s, were convinced that they could no longer rely on state regulation for favorable outcomes; they accepted the fact that the political hostility toward utilities was more than a short-lived phenomenon.

Some consumers, especially industrial groups, recognized that their interests would be best served by diminishing the monopoly power of electric utilities. Industrial customers were particularly upset about state
regulators requiring them to cross-subsidize residential customers. They also began to question the natural-monopoly argument behind the defense for public utility regulation.

In balancing the interests of various competing groups, PUCs sometimes created subsequent problems. One problem arose from policies and practices that attempted to reduce regulatory lag. Fuel Adjustment Clauses (FACs) and revenue decoupling plans, in particular, made regulation more “cost plus” in nature. These practices should be revisited in view of their inherent productive-efficiency-reducing qualities and the current movement toward competition. While it can be argued that these practices were defensible during the “Upheaval” period, it is difficult to argue that they are defensible now. It is worth pointing out, however, that regulatory lag has now become a structural component of price-cap schemes involving a three-to-five year period of operation, followed by periodic commission review.

Another problem, which became evident over the last ten or so years, was that regulators may have overpenalized utilities for their investment decisions given the allowed rates of return. By 1985, most electric utilities stopped building new generation facilities, especially those of a large scale. The asymmetric risk/reward structures that emerged from the period became a serious impediment to utility risk-taking and innovation. Instead of building new generation capacity, utilities started to purchase more power from non utilities. Utility purchases of power to meet ratepayers’ needs grew at the annual rate of 30 percent during the 1985-1990 period. Later, the asymmetric risk/reward structure led to utilities more readily accepting DSM initiatives and the IRP process. It is questionable whether these alternatives to internal utility generation were truly economical, but utilities were acting rationally, given the attitudes of the time.

During the “Transition” period, PUCs started to respond to two diametrical forces. The first force was competition in the wholesale and retail industrial power markets. By 1990, power procurement mechanisms operated in 26 states. These mechanisms were largely enacted to prevent utilities from paying excessive amounts for nonutility power that occurred under administered avoided-cost pricing rules. The decision to adopt these mechanisms was economically sound.

With regard to increasing competition for industrial loads, PUCs in most states were supportive of special tariffs, and to a lesser extent, contracts to retain existing sales or to promote additional sales. Correctly, PUCs reasoned that these actions were consistent with promoting economic efficiency as long as the discounted prices did not lie below the utility’s marginal cost. PUCs also reasoned that “something is better than nothing” in terms of a utility recovering its fixed costs and, consequently, of holding down electricity rates to nonindustrial customers. Discounted rates, however, raise the specter of discriminatory pricing. Certainly, as a contributing factor, discounted rates reversed the prior period’s tilting of electricity prices in favor of residential customers.

At the same time that PUCs were responding appropriately to stimulate competition in the above sectors of the electric power industry, they enthusiastically endorsed the concept of IRP. IRP, on the surface, has some attractive features. It places all resource options on a “level playing field.” It allows for up-front public and PUC participation (rather than after-the-fact review). In later versions, it accounts for all social costs including utility, consumer and environmental costs.

Below the surface, however, IRP has potential problems that often are overlooked. IRP, similar to FACs and regulatory preapproval of a utility’s activities, can produce unforeseen distortions that later turn out to be problems for regulators. The centralized planning tenets of IRP, for example, are an ill-fit for decision making in competitive markets. Consequently, one would expect, as competition in the electric power industry advances, a clash between these forces and the IRP process. At some point, PUCs may have to modify or scrap the IRP process, if only to keep utility prices at a market-based level, as competition advances in the electric power industry. During the “Transition” period, PUCs may have become overly enamored of IRP and the promotion of energy conservation. Special interests, such as conservationists/environmentalists, pushed hard for PUCs to give their endorsement. They were generally successful in their efforts.

The lesson for PUCs here is that they should be wary of all special interest groups. This statement is true whether these groups are utilities, individual consumer groups, environmentalists/conservationists or state officials who are promoting economic development. If regulation is to present itself as a reasonable alternative to markets, as a necessary condition it needs to pursue a course of action that aims to serve the larger public
interest. One “old” point of view is that PUCs should only focus on utilities providing customers with highly reliable and reasonably priced services. Consistent with this view is the belief that concern over the environment, low-income households and economic development should rest with some other branch of government. Advocates of this position would say, “A commission should know its limitations.” To them, it is illusory to believe that a PUC can simply step in with a discriminating eye and remedy social problems.

The “Transformation” period was marked by the recognition that competition in the electric power industry will be robust and presumably irreversible. Both regulators and utilities have begun to respond to this reality. PUCs, correctly so, are starting to look at new rate-making methods, such as targeted performance-based regulation (PBR) and price caps. These new methods tend to have one or more of the following four features: (1) pricing flexibility, (2) risk shifting to utility shareholders, (3) greater profit opportunities for utilities, and (4) infrequent formal price reviews. These features are compatible with the functioning of competitive markets.

Regulatory reform, as a general principle, tends to take place when market realities increasingly deviate from existing regulatory practices. If it is in fact true that traditional rate base regulation is out of line with a competitive marketplace, then a new rate-making paradigm will likely be accepted.

In view of more competition, some regulators have begun to question whether promoting social objectives (which they began to endorse in the mid-1980s) is feasible and economical. “Taxing” customers to fund social programs may prove to be futile, or at least more difficult, if customers can bypass to other electricity suppliers who impose no such tax.

As a general matter, regulators need to quickly adapt to changed conditions. As regulators have already discovered, when they wait too long to take action, either someone will do it for them or they will be forced to do so under someone else’s terms (e.g., the state legislature). Generally, however, state regulators over the last two decades adapted, although perhaps too slowly, to changed political, technological and economic conditions. Especially when the inefficiencies of regulation rose beyond the benefits that regulation could generate, regulatory reform started to take shape.
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- Fourth, PUCs should not stray too far from their core function: promoting economically efficient utility markets principally by serving customer interests. Regulators need to realize that no “free lunch” exists with regard to broadening the scope of their activities: pursuing equity and other social objectives has a price.

- Fifth, regulators should realize the great importance of the risk/reward relationship they create by their actions. Up until about the late 1960s, electric utilities had few constraints on their profits relative to the risks they face; this environment was conducive to capacity expansion and innovation. After that, up to the current time, investments from the utility perspective have become much less attractive. The asymmetric risk/reward relationship that electric utilities have met since the early 1980s discouraged them from building new generation capacity. In the more competitive future environment, regulators should consider a new risk/reward relationship under which electric utilities can operate. Specifically, regulators should explore a relationship for which the utilities shoulder more of the risks and have opportunities to earn higher profits than what currently exists.

- Sixth, regulators have a stake in promoting economic efficiency. Efficiency losses mean that regulators are less able to benefit consumers and utilities collectively. In the case of a customer bypass threat, for example, regulators would have an interest in allowing a utility to price downward as low as its marginal cost to discourage a customer from switching to another supplier. In this example, efficient pricing would not only be economically sound but would also keep prices to small (core) customers lower, or utility profits higher, or both, than what they otherwise may be.

- Seventh, when outside or exogenous forces are robust, regulators may have little control over the actual outcomes. During the unstable and inflationary macroeconomic and energy market conditions of the 1970s, state regulators really had few choices. Currently, with the push of competition in the electric power industry, regulators would do best by accommodating this competition in a way that promotes economic efficiency, benefits both small and large customers, and satisfies other prevailing regulatory objectives.

CONCLUSION

Over the last quarter century, public utility regulation endured three significant and discrete periods of change. The first period was marked by a dramatic and rapid run up of energy prices. Here the transformation was from benignly presiding over electric utility rate reductions arising from continuously declining costs to struggling to cope with the worsening financial plight of electric utilities and their customers. The second period was characterized by a call from all circles for regulatory reform to simultaneously accommodate growing competitive forces and societal concerns such as environmental matters, energy conservation, safety nets, and health issues. The third period was distinguished by the spread of competition within the electric power industry. The key question for the future revolves around what role PUCs will play in reshaping the industry.

If one lesson of past regulatory actions stands out, it is that PUCs demonstrated a great deal of resilience and flexibility to a changed environment. The challenge facing PUCs in the years ahead will tax their ability to continue their mission of evenly and economically balancing the interests of the various stakeholders. The key to their success will hinge on actions that neither overreact nor underreact to the new world. History has shown that PUCs will meet this “high stakes” challenge cautiously. They will unlikely endorse sweeping deregulation and comprehensive competition, but instead will be favorably inclined toward gradual and incremental change.

NOTES

