

## Chapter 18

### **CONCLUSION: WRAPPING UP AND LESSONS LEARNED**

California's electricity crisis has hampered electricity industry restructuring in the state. Nevertheless, governments still seek gains in efficiency, new services, and lower prices. It is now clear that the vertically integrated utility is not a natural monopoly. More important, worldwide competition has much support. That said, California's experience at least points to the complexity of change. More important, California's experience should also strongly suggest that restructuring is not a one-step process. It is equally clear that markets need monitoring and streamlined rule-changing procedures when unintended or anomalous activity occurs or is detected.

Through the mid 1970s, electricity prices generally declined, both in nominal and real terms. Simultaneously, sales grew, nearly doubling every decade. To accomplish this feat, utilities were required to continually seek technological improvements and to expand economies of scale. Given these pressures, it is not surprising that an engineering and technological focus dominated utility management. Customers were largely forgotten and marketing ignored.

In hindsight, it is easy to see that technological progress would eventually begin to reach limits. This IOU engineering focus incorrectly presumed that growth would continue to reduce costs and that demand for electricity was inelastic and immune to competition. Most utilities were caught flatfooted when the world oil crisis hit and were trapped in "vicious cycle" of rising costs and falling demand. Energy utilities were attacked by politicians of all stripes.

In most nations in the late 1970s, the electricity industry was the largest primary energy consumer of fossil fuels (oil, natural gas, and coal). The cost for these fuels was escalating rapidly. Electric utilities were also typically large private borrowers. The rapidly rising interest rates of this decade

meant electric utilities had to pay significantly more to build power stations. The combination of rising fuel costs and rising interest rates caused electricity prices to increase. The local energy monopoly became a ready and easy scapegoat. Myopic and misdirected criticisms became the seeds for restructuring the electric utility industry and its regulatory institutions.

The first break in the virtually integrated electric utility monopoly chain took place at the generation level when the Public Utility Regulatory Policy Act (1978) (PURPA) introduced a new class of independently owned and, therefore, alternative sources of generation known as Qualifying Facilities (QFs). These new QFs could be dispatched along with the traditional utility-owned generation. Regulators could count QFs as dependable sources of supply. Wholesale competition began.

Independent power generators began to compete to attempt to take away large customers. Additionally, non-utility generators (NUGs) supplanted QFs and increased competition for large retail customers without becoming utilities. Various schemes were developed across the United States to entice retail load away from traditional IOU suppliers.<sup>1</sup>

The U.S. Congress enacted the Energy Policy Act (1992) to encourage greater transmission access to expand and encourage competitive wholesale power markets. This, in turn, encouraged additional requests for retail wheeling and direct access. The FERC responded by approving restructuring such as California's 1996 efforts under AB 1890. The FERC has also moved from voluntary open-access transmission restructuring and a not-so-uniform Standard Market Design proposal for Wholesale Competition.

The various restructuring models that were adopted in the United States to replace traditional monopoly-owned power station regulatory and ownership models (construction and ownership) with expanded wholesale competition, usually started in the wholesale electric power market with competitive bidding and purchase power agreements (PPA) for increments of new supply. Most restructuring in the United States remains focused on the wholesale power market. Before California, restructuring also seemed poised to expand into retail competition.

It was somewhat surprising when in the spring of 1994, the CPUC announced plans for the most dramatic power sector restructuring ever attempted. The CPUC was prompted to act by high prices in California, a decade-and-a-half of experience under PURPA, and extensive experience reforming the telephone and natural gas industries.

In retrospect, it is widely accepted that California's restructuring was marked by a structurally flawed market design, was easily gamed, and had

<sup>1</sup> For example, self-generation, joint NUG/industrial customer projects.

the unfortunate luck to experience a “perfect storm” of unexpected adverse market forces. These factors converged to cause the California Electricity Crisis from mid 2000 and to mid 2001. Our analysis reviewed what California attempted and why it went bad. Recent skeptics are claiming to have “told us so.” They seem to be fewer in number than the number of people who claimed to have designed California’s wonderfully complex system when wholesale generation prices fell to half of their cost of service of fully regulated levels during the first two years of restructured wholesale markets.

We wrote this book to explore and learn from history. Our analysis demonstrates that California’s Electricity Crisis did not result simply from bad luck. Other factors were at work. There were structural design and regulatory flaws, primarily tied to an excessive nearly exclusive, reliance on spot markets. Worse, the regulatory reaction to crisis was slow and also flawed at times.

California restructuring was based upon the concept that retail competition was both practical and inevitable. The CPUC wanted to quickly expand competition in California’s power markets to the retail level, while still protecting IOU shareholders and assuring lower retail prices. The CPUC approach introduced phrases such as “managed competition” and “phased deregulation.” These terms highlight the inherent conflict when governments try to have it both ways: simultaneously unleashing the competitive market and pulling on the political reins. California’s experience identifies some of the weakness inherent in mixed approaches. Managed competition or mixed-hybrid structures require monitoring, enforcement of rules, penalties for bad behavior, and streamlined processes for changing rules. Politicians and consumers also need to be prepared for price swings when the weather and market forces shift dramatically, as they did in 2000 in California and the west. More important, market participants need to hedge their positions against such unexpected shifts to insulate themselves from both economic and *ex post* political blame-game judgments.

In theory, those who favor competition are not concerned with the vagaries and volatility inherent in competitive markets. Markets are uncertain and no one can predict with certainty what will happen in markets. This is why markets trump regulation.

Economists fall into the market camp. They know that markets will have “winners and losers,” and accept the premise that market participants make choices and accept the consequences. Critics who prefer comprehensive results that are set and driven by politics, not competition, find this way of thinking to be reckless.

The key difference is that economists and market restructuring architects need to build hedges into competitive wholesale markets. California's fatal flaw was its nearly total reliance on spot markets, with little or no real opportunity to hedge ownership of generation or long term forward PPAs. It seems certain this mistake will not be made again. Two additional issues drive the political debate over introducing competition to electric power markets. First, utilities have invested billions of dollars under the existing regulatory scheme. These investments might be too expensive to compete effectively in a competitive market. In other words, the utilities would not be able to recover their investment and these assets would be stranded. However, retaining generation asset ownership is a built in hedge for utilities, as the California electricity crisis so aptly demonstrated. Therefore, new restructuring should focus less on stranded cost recovery and more on the value of ownership and the cost assignment for this reliability service. Second, protecting the environment and expanding DSM and "renewables" can be good for business. Reducing demand helps in times of crisis. California's efforts here during the crisis are noteworthy.

Under controlled competition or phased deregulation, the utility service customers (similar to core natural gas customers) who remain with the utility should be held harmless and should not pay for the departing (direct access) customers' fixed cost recovery and associated return. Several tariff and accounting options can be used to protect remaining IOU customers. These include exit (or abandonment) fees, stand-by (or lean-on) fees, coordination (or reliability) fees, dispatch fees, transmission fees, distribution fees, and/or reinstatement (or prodigal child) fees.

Some sort of "just and reasonable" fee for departing customers is also likely to be necessary. AB 117 shows that California's retail consumers may be facing a second round of transition charges to recover the cost of the electricity crisis. The challenge is to be fair, while not discouraging innovation and competition. Fees, therefore, need to reflect benefits as well as costs.

Restructuring opponents are lining up. They come in four varieties. First, there are shareholders and financial analysts. While they often do not trust regulators, they are especially wary when they observe IOU bankruptcy and *ex post* seller refunds in California. Second, economists and consultants support the theory of competition, but often give short shift to market monitoring and the ongoing need to refine the markets' rules. Third, environmentalists often do not want to give up the political gains they have made with regulators that have caused IOUs to support both DSM and renewable investments. Fourth, retail consumers are wary that their restructuring may turn out to be as costly an experiment as was California wholesale restructuring, a cost they will have to pay.

California's future is uncertain. There are five likely restructuring scenarios for the future. These are: (1) improve existing regulatory rules; (2) introduce wholesale power market competition by encouraging new entry of sellers and buyers; (3) introduce limited forms of retail competition; (4) expand retail competition; or, (5) full retail competition.

In the first scenario, existing regulatory rules may be improved to specify an explicit utility performance contract and incentives for success. Rules could be changed to introduce performance-based regulation to improve cost of service regulations. Specific risks and responsibility would be assigned to customers, shareholders, and competitors.

In the second scenario, wholesale power market competition would be expanded, increasing the nontraditional electricity supplier's role in the wholesale power market. This scenario is the FERC's current focus. This approach increases competitive bidding for new utility power requirements, interutility sales, and open access transmission.

The third scenario introduces limited forms of retail competition. Utility investments (stranded costs and social programs) would need to be recovered. Competitive retail access would extend to utility transmission, with specific transmission access terms and pricing.

The fourth scenario expands retail competition further by encouraging new retail brokers and aggregators and ESPs to replace or to compete against the utility as the exclusive electricity merchant, and redefines the utility's duty to serve. The new municipal push in California is based on these ideas and the role of new buyers' groups. Additionally, California is considering new non-core customer plans where larger customers would pay an exit fee and be allowed to purchase electricity in both the spot and long-term markets.

The fifth scenario is the final stage: full retail competition with open access to dispatch centers, transmission, and information to enhance operational efficiency, with fully transparent transmission access and pricing protocols, neutral common carrier systems, and no duty to serve. This would, in effect, turn MWHs into internet-like service. This scenario now seems a remote prospect in the aftermath of California.

The California crisis also points to the different roles played by Federal and State regulators. Many of these jurisdictional issues have not been sorted out in the United States. The legislative and judicial involvement in restructuring the United States also has not been fully determined. Forming a strategy or predicting the future in these circumstances is challenging. Nevertheless, the future is full of new opportunities.

California likely will now go slow with electricity reforms. This latest California reform effort will likely focus on wholesale markets, not retail choice. The key is to have a significant number of new sellers and investors.

This will not happen unless independent power producers return to California. This will not happen unless the CPUC creates a level playing field and eschews calls that favor IOU-owned generation.

A second prong of this strategy is to have more buyers. This means releasing non-core customers from IOUs and encouraging cities that seek to form CCAs or new MOUs. Both require just, reasonable, and certain exit fee payments.

Others must avoid California's mistakes. This is too easily said to mean much. California restructured its electricity market knowing that there were unresolved issues and things that needed to be fixed. California's spectacular early success caused too many to postpone these necessary tasks. When bad luck and the market conspired to push up prices, the political and regulatory climate were not suitable for making the needed reforms. Winners and losers began to play the blame game and sought advantages, not fundamental reforms.

The primary lessons for others considering liberalized market reforms is to go slow, adopt a schedule for additional reforms, and keep to that schedule so that they are not forced to attempt to fix future problems after the problems become a crisis.

Markets need monitoring, specific rules, and policing. Penalties need to be known before bad or anomalous behavior starts. Politicians and the public need to know at the outset that market prices will vary, both up and down. No one should claim credit for reductions and be allowed to blame others or the market when prices increase. Hedging through asset ownership and long-term contracts are the only market-oriented refuge for market participants that eschew price uncertainty and volatility. Regulation is still second best. California is now learning that re-regulation is not particularly easy, pretty, or wise.

In California, what is certain is that investments in generation are needed sooner rather than later. Inertia is not an acceptable option if California is to avoid another crisis caused by supply shortages. A comprehensive political approach that begins by defining California's future electricity structure is required.

Such an approach will determine what entities will participate in this market. The legislature and new governor must act to set the agenda and establish a pragmatic and collaborative framework that will allow California to successfully emerge from this crisis and restore the state's economy, economic growth, and state tax revenues. The CPUC must, in turn, expedite its decision making and reflect this comprehensive approach.

The future is uncertain and will be challenging. But if the politicians, legislators, and regulators heed the lessons of the past, they will be able to

develop pragmatic solutions and approaches that will restore the luster to the Golden State.