

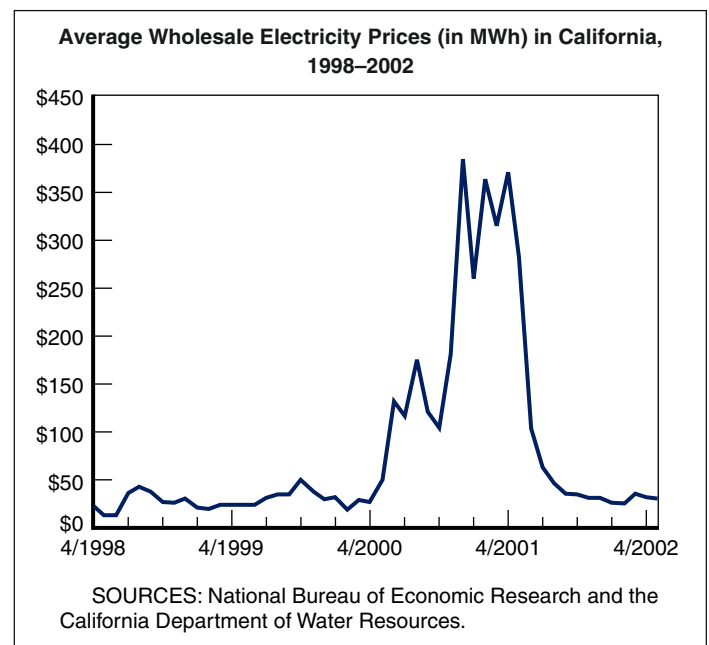
What Can Be Learned from California's Electricity Crisis?

In 1996, the deregulation of California's electricity market was hailed as a historic reform that would reward consumers with lower prices, reinvigorate California's flagging economy, and provide a model for other states. By 2002, the reform lay in ruins, overwhelmed by electricity shortages and skyrocketing prices for wholesale power. Utilities were bankrupted, the state became the buyer of last resort, and the institutions established by the 1996 reform were dismantled. What happened? In *The California Electricity Crisis: Causes and Policy Options*, Christopher Weare shows how several factors combined to produce blackouts, financial crisis, and the breakdown of market institutions. He also offers suggestions for reshaping and governing the power sector in the aftermath of the crisis.

The Perfect Storm

The exact causes of the crisis are still being debated, but most observers agree that it cannot be traced to a single factor. Rather, a unique confluence of events and factors created the crisis. These include a shortage of generating capacity, bottlenecks in related markets, the market power of wholesale generators, regulatory missteps, and faulty market design. The author notes the difficulty of disentangling these factors or demonstrating in any precise or conclusive way how each contributed to the crisis. Even so, he maintains that some conclusions can be drawn from the experience.

First, several events unrelated to the restructuring of the market contributed to the crisis: the rise in natural gas prices, higher costs for pollution permits, and a drought in the Pacific Northwest, which reduced the available imports of electricity. Even if the electricity sector had remained regulated, prices would have increased, and some blackouts might have occurred between May 2000 and June 2001 (see the figure). Second, although regulators have yet to determine the extent to which soaring electricity prices were the result of market manipulation by generators, the shortages in generating capacity certainly increased the bargaining strength of



Price spikes in 2000 and 2001 added almost \$40 billion to Californians' energy bills.

merchant generators, and the structure of the market increased the incentives and opportunities for manipulation. Third, California relied far too much on the spot market for wholesale power instead of securing it through stabler, long-term contracts. Finally, the division of authority between state and federal regulators impeded a rapid, coordinated, and effective response to problems in the electricity sector. As a result, California's economy, taxpayers, and residents were burdened unnecessarily.

What Now?

The crisis has left California's energy sector in disarray, and policymakers face the daunting task of reconstructing market and regulatory institutions almost from scratch. This task is complicated both by the complexity of the issues unearthed by the crisis and by the wide range of options being

debated, including calls for increased public ownership of the electricity sector, further deregulation, and a return to the system of regulated, vertically integrated utilities.

The report examines the costs and benefits of these options against a backdrop of six primary goals for the electricity sector: low prices, stable bills for customers, efficient use of resource by producers and consumers, reliable supply, administrative feasibility, and protection of the environment. Overall, policymakers face a choice between the greater stability, reliability, and administrative feasibility provided by public regulation or ownership and the prospect of greater efficiency gains through competitive markets. In terms of environmental protections, no approach clearly dominates the others, mainly because environmental results depend on complex interactions between each regime and existing environmental regulations.

Eventually, a movement to reinstate elements of competition, in particular competitive wholesale generation, is almost inevitable. The federal government continues to push for greater wholesale competition through the creation of regional trading organizations. Also, technological advances allow smaller plants to generate electricity at competitive costs, thereby facilitating the market entry of new firms and enabling large customers to self-generate. In the short run, policymakers may choose to restrain the development of competitive generation markets, especially if they wish to promote a stabler electricity sector. They may also doubt the Federal Energy Regulatory Commission's willingness and ability to temper the market power of competitive generators. Nevertheless, they should exercise caution in making short-run choices that dampen competition in the future.

On the retail side of the market, the tradeoffs between regulated and competitive structures depend on consumers. Any potential efficiency gains from competition will come from changing consumers' behavior, making them more aware of the real costs of electricity and allowing them to change their consumption accordingly. Concerns that consumers are averse to price volatility suggest the need for carefully planned transitions to retail competition beginning with large customers.

Policy Recommendations

The report also offers three recommendations for policy changes that can improve the performance of the electricity sector under any regulatory and market structure. The first is

to strengthen and institutionalize demand-management programs. Although restructuring often neglected or undermined efforts to discourage consumption at peak times, demand-management programs can lower energy costs, improve efficiency, and enhance system reliability. They can also make customers more intelligent consumers of electricity by enabling them to respond to changes in the underlying costs of power.

The second recommendation is to develop the capacity for more comprehensive planning and oversight of California's energy infrastructure. Inadequate transmission capacity, an overreliance on natural gas plants, bottlenecks in natural gas pipeline, and inadequate natural gas storage all contributed to the state's troubles. An overarching review of these components is necessary both to ensure that private investments are adequate and to identify where and what kind of public investment or coordination is needed.

Third, the state should reassess and reorganize the current administrative structures. Restructuring followed by crisis has led to a confusing mix of state agencies and departments as well as inefficiencies and conflicts. These administrative structures must be redesigned to provide effective policy development and implementation and to produce a more predictable environment for producers and consumers.

California policymakers may take away a number of hard-earned lessons from the crisis. They should not underestimate the complexity of electricity markets, where seemingly inconsequential details of market design can have significant and unexpected consequences. Policymakers must also appreciate the extent to which the state's control over the electricity sector has been circumscribed by the federal government. Finally, if market-based reforms are to be successful, firms and consumers must be more responsive to market incentives and risks. During the restructuring of the electricity sector, utilities and consumers continued to operate as if the stable and secure rules of regulation still held, leaving California woefully unprepared for the price spikes in 2000.

More immediately, policymakers must forge a consensus on the future direction of California's electricity sector. Continued ambiguity and conflict may lead to market uncertainty, stifle investment in critical infrastructure, and risk the same errors that precipitated the crisis. Agreement on the broad outlines of a regulatory and market structure would do much to improve the investment environment and enable California to move forward.

This research brief summarizes a report by Christopher Weare, The California Electricity Crisis: Causes and Policy Options (2003, 123 pp., \$12.00, ISBN 1-58213-064-7). The report may be ordered by phone at (800) 232-5343 [U.S. mainland] or (415) 291-4400 [Canada, Hawaii, overseas]. A copy of the full text is also available on the Internet (www.ppic.org). The Public Policy Institute of California is a private, nonprofit organization dedicated to independent, non-partisan research on economic, social, and political issues affecting California.
