

1. Overview

This investigation of the western bulk power market began at the direction of the Commission in an undocketed order issued July 26, 2000. The Commission directed staff to undertake a fact finding mission of the conditions in the electric bulk power markets in all regions of the country, including volatile price fluctuations in some regions. Specifically, staff was to (a) determine any technical or operational factors, regulatory prohibitions or rules (federal or state), market rules, or other factors affecting competitive pricing of the electric energy or the reliability of service and (b) report its findings to the Commission by November 1, 2000.

Wholesale prices increased significantly over the summer in the West and residential and other retail consumers in the San Diego area saw these prices passed directly to them. In response to a complaint filed by San Diego Gas & Electric, on August 23, 2000, the Commission initiated a parallel investigation under Section 206 of the Federal Power Act.¹ The Commission directed staff to accelerate its fact-finding investigation of the markets in California and the Western region and report to the Commission as soon as possible. This is staff's report of its findings.

The focus here is primarily directed toward answering the questions, why prices behaved the way they did and what should be done about it. In terms of general methodology, we reviewed public data maintained at the Commission and used other public sources to establish the general framework of the markets in California and the rest of the Western Systems Coordinating Council (WSCC). We conducted interviews with market participants, state regulators, outside economists, entities representing retail customers, the Independent System Operator (ISO) and the Power Exchange (PX) to obtain further input.² The staff then attempted to substantiate issues raised during the interviews regarding the market from the sources available to it and obtained data from market participants, the ISO, the PX and the WSCC.

This was an informal investigation. As such, staff did not depose market participants or others as it might as part of a formal investigation. Given the purpose, to find the general cause of the unusual prices and market activity, this was not necessary.

Finally, from a methodological standpoint, staff studied the issues from the perspective of both California and the entire WSCC, as events in one relate to the other. California, as a consistent net importer of electricity during peak periods, relies on sources

¹San Diego Gas & Electric Co., 92 FERC ¶ 61,172 (2000) rehearing pending.

²A list of groups interviewed is attached in Appendix A.

and markets outside of its boundaries. Consequently, the surrounding markets in the rest of the WSCC are greatly influenced by events and market rules in California.

Brief Overview of Conclusions

The report is organized to provide a factual framework for the Commission's use, sections discussing major issues evaluated during the investigation and, finally, a section with options for consideration by the Commission to remedy immediate and longer term problems.

Section 2 of the report finds tight supply and demand conditions existed throughout the West during most of this summer, with emergency conditions concentrated in California. Broadly speaking,

- *Overall demand across the WSCC increased significantly driven by hot weather and load increases that were heat sensitive and that were also driven by increased economic activity.* Average summer loads were 11 percent higher in May and 13 percent higher in June from the previous year. Energy consumption also increased across the WSCC by 5 percent in May and approximately 10 percent in June from the previous year. Offpeak demands in the Cal-ISO increased significantly during the summer, in large part to meet increased pumping demands for hydro power facilities, needed for peaking purposes both inside and outside of California. However, peak demand in the ISO area fell slightly, partially reflecting response to emergency declarations and actions.
- *Exports increased significantly, with little overall change in the level of imports.* As a result, net imports decreased by approximately 3,000 megawatts (MW) from May through August. The ability to increase imports was limited by hydro conditions in the Northwest, which actually declined in July and August, and tight load conditions in other western subregions. Weather conditions led to increased exports in July and August, corresponding to the decreases in the ISO price cap from \$750 to \$500 in July and then to \$250 in August.
- *Outages increased significantly compared with 1999.* This was especially true with regard to unplanned outages.
- *Increased quantities of demand and supply were left unscheduled in day-ahead and hour-ahead markets.* When loads increased above 35,000 MW in June and at lower levels in July and August, the ISO was forced to buy substantial amounts of power in the form of replacement reserves or out of market purchases.

- *Non-hydro generation resources throughout the West were more heavily utilized in 2000 over 1999.* Generation from non-hydro resources in 2000 increased by 15.1 percent in May and 24.9 percent in July over 1999 levels. Based on a snapshot of WSCC capacity during a selected high load period, little additional capacity appears to have been available at peak times.

Section 3 of the report finds that wholesale power prices were high throughout the West in the summer of 2000, but their implications were most acutely felt in California. The principal findings of the report on western prices and costs in the summer of 2000 are:

- *Prices in the ISO spiked in May and June and average June prices reached record high levels.* While an ISO price cap of \$750 existed during the early part of the summer, prices became highly volatile and the hourly price hit the cap on 3 days in June. Average June prices reached record levels of \$120 in the PX.
- *Average prices were lower in July than in June, but total costs paid by purchasers in August were higher than in June.* Caps of \$500 in July and \$250 in August had a dampening effect on high hourly prices, but average prices in August rose to \$166 in the PX after falling below June levels to \$106 in July. The lower caps may have played a role in increasing exports in July and August.
- *Prices at other trading hubs in the West generally correlated with California prices, suggesting that opportunities to sell at high prices existed in these regions when California prices were high.* However, it is not yet clear how scarce supplies were in these regions or to what extent prices outside California were for California imports rather than consumption in other regions. While information for certain weeks in the West indicated supply was scarce, it was not possible to make an overall assessment on scarcity throughout the West without additional information.
- *Cost for fuel and environmental compliance (NOx credits) increased significantly in July and August.* Gas prices rose from approximately \$2 per MMBtu early in the year to approximately \$5 per MMBtu in August. Credits to comply with NOx standards rose from \$6 per pound in May to \$35 in August and \$45 in September. Lowered caps in July and August reduced the ceiling for market prices while these fuel and environmental costs raised the “floor.” As a result, prices traded over a narrow range.
- *Prices in some hours appear to be above those that would have prevailed in a competitive short-term market, if prices were determined from short-term marginal costs.*

- *Examination of bid patterns in the PX and ISO replacement reserve markets and a review of ISO out of market purchase activity does not suggest substantial or sustained attempts to manipulate prices in these markets.* Supply curves bid into the PX show higher bids, on average, when the price caps are lowered. However, the increases are not correlated with particular classes of bidders, suggesting that the pattern may reflect increased costs for most participants rather than a pattern of individual bidders or classes of bidders attempting to raise prices intentionally.

Section 4 outlines the statutory and regulatory framework related to energy markets in the West. The report describes the roles and policies of the federal and state economic and environmental agencies in regulating electric utilities in California and the western states. It also discusses the restructuring efforts in California and the establishment of the California ISO and PX, as well as the creation of the California Electricity Oversight Board. Additionally, this section outlines requirements imposed on the California utilities by the California Public Utilities Commission (CPUC).

Section 5 discusses the issues that were raised as possibly causing the high prices of this summer. These fall into three general categories: (a) competitive market forces, (b) market design problems and (c) market power. The data clearly show that a general scarcity of power in the West and increased costs to produce power were factors causing these high prices. It is also clear that existing market rules exacerbated the situation and contributed to the high prices. The data also indicate some attempted exercise of market power, if the standard of bidding above marginal cost is used, and some actual market power effects, to the extent that prices, at least in June, were significantly above competitive levels. However, the data do not isolate specific exercises of market power or suggest that the exercise of market power was more important than other primary explanatory factors.

Section 6 provides a range of options to address the problems identified in this report. Staff also attempts in this section to provide the possible benefits and drawbacks of various options.

This investigation was conducted on an expedited basis so there was not enough time to address all issues in depth. This report is intended to provide the Commission with “the big picture.”