

## APPENDIX E

### Three Views of Market Power

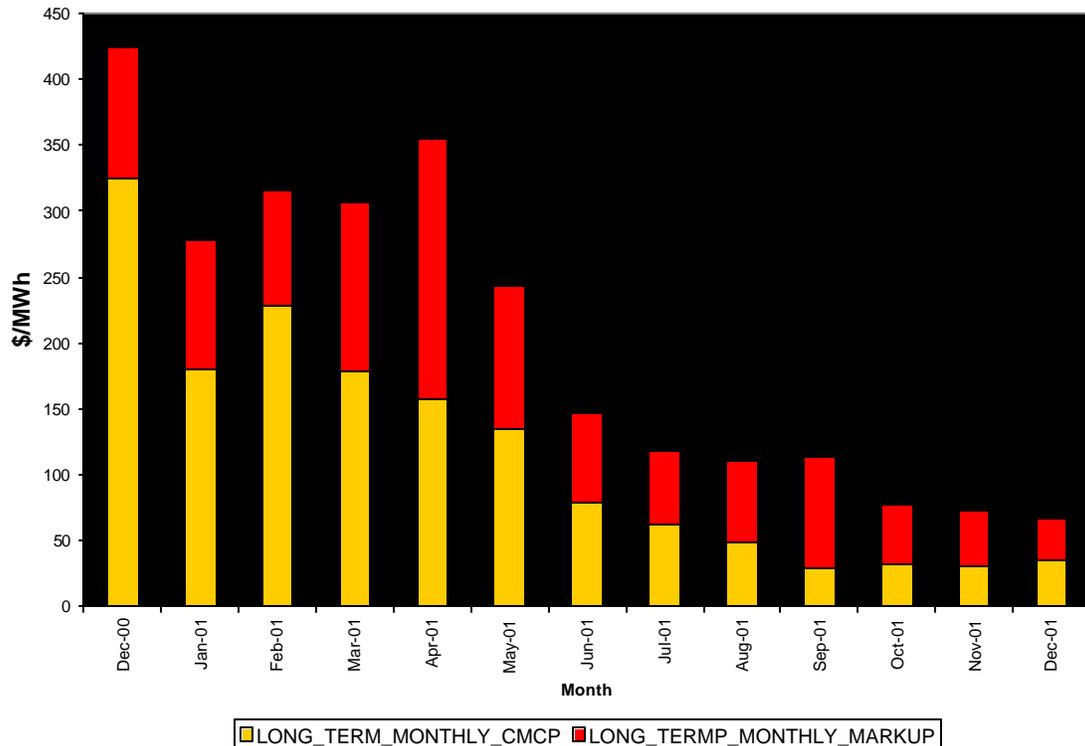
Suppliers to California's electricity market possessed and exercised significant market power during the first half of 2001. Below are three views of market power as measured by the price/cost markup. The first view looks at long-term market costs compared to competitive baseline costs. The long-term view includes long-term contract purchases (see Appendix C), monthly purchases, balance of month, day-ahead, hour-ahead, and real-time purchases. The second view looks at short-term purchases including day-ahead, hour-ahead, and real-time purchases. The third view looks at only real-time purchases.

The actual market price for each view is compared with the system marginal cost, the competitive benchmark. The system marginal cost to meet demand in each hour is estimated based on generation availability, fuel cost and variable O&M cost. Figure E-1 reports the competitive base line cost and markup from January 2000 to February 2001 for the long-term view. As shown, significant markup occurred since May 2001.

After June 19, price mitigation and other factors including reduced demand, long term contract by CERS, and lower natural gas price, resulted in significant price reduction. The price-cost markup, however, remained high when all forward and real-time Energy purchases are considered. A large amount of

the markup was due to the high cost of long-term contract signed during the period of market emergency.

**Figure E-1. Long-term View: Price-cost Markup for Forward Energy and Real Time Energy\***

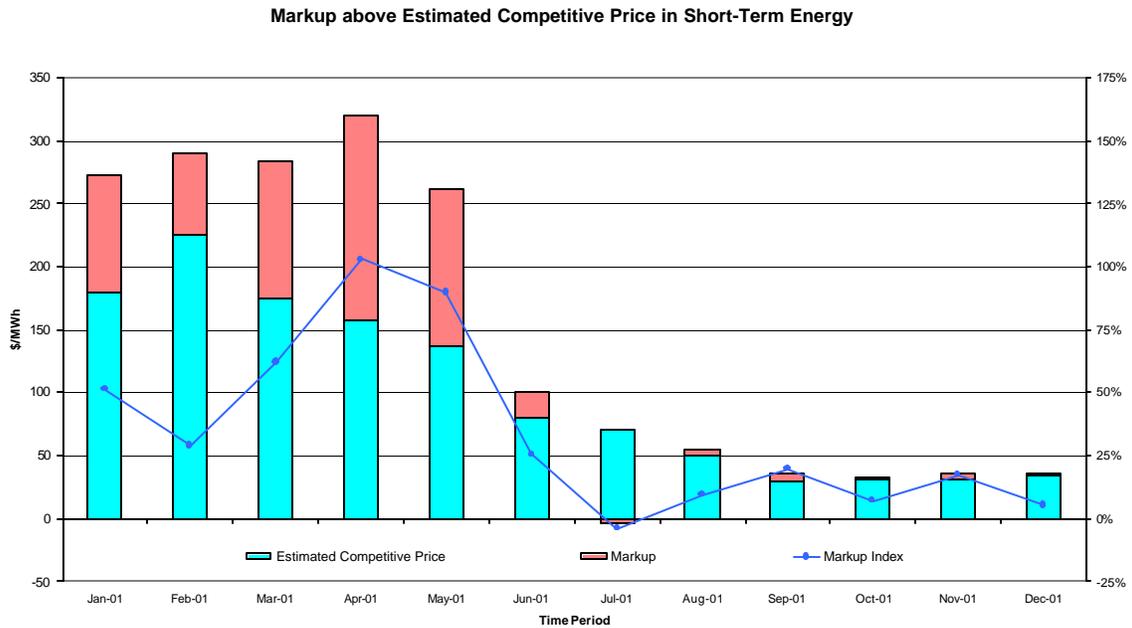


\*January and February 2002 data not yet available from CERS.

The two shorter-term measures are used to separate the effects of long term contract from the current spot market performance. The short-term measure considers day-ahead, hour-ahead, and real-time incremental energy purchases (including BEEP and OOM). Figure E-2 shows a significant improvement in price/cost markup in July through December 2001. This reflects the benefit of significant demand covered by utility owned generation resources and long-term contracts. It appears the benefit of the long-term contracts has been to promote a more competitive short-term bilateral market. The performance of the short

term bilateral market is contingent upon continued long-term forward purchases, a high level of imports, and the level of demand growth relative to supply.

**Figure E-2. Short-term View: Price-cost Markup for Day-Ahead, Hour-Ahead, and Real-time Purchases\***



\* January, February 2002 data for DA and HA purchases are not yet available from CERS.

The third view represents real-time market performance. The mark-up index remains significant after June 2001 as shown in Figure E-3. This supports the conclusion of continued market power in the Real Time Energy Market. As discussed in the bidding behavior section of the report, suppliers continue to bid significantly in excess of their operating costs. In addition, real-time prices may reflect operating constraints and declined bids that may be a reflection of physical withholding.

**Figure E-3. Price-cost Markup for Real Time Energy (Incremental)**

