Memorandum

To: ISO Board of Governors

From: Anjali Sheffrin, Ph.D., Director of Market Analysis

cc: ISO Officers, ISO Board Assistants

Date: March 19, 2004

Re: **Response to Questions of DMA from 2/26/04 Board Meeting**

This is a status report only. No Board Action is required.

The Board of Governors, during their February 26, 2004 meeting, requested that the Department of Market Analysis (DMA) provide information on the following two items:

1. Provide a "total cost estimate to serve load" index similar to historical assessments
2. Compare actual loads to forecasts in the CAISO's 2003 Winter Assessment, dated October 10,2003 and forecasts from the California Energy Commission (CEC).

Total Cost to Serve Load Index

DMA estimates the total wholesale energy and ancillary service costs for 2003 were approximately $10.3 billion. This represents a 32 percent increase from 2002 ($7.8 billion) due largely to the higher natural gas costs. Average natural gas prices were 64 percent higher in 2003 than 2002. The total wholesale energy cost to serve load represents the totals of a.) utility owned generation production costs, b.) bilateral contract purchase costs estimated at day-ahead prices, c.) ancillary services costs, and d..) imbalance energy costs. DMA will provide a more detailed analysis of 2003 energy costs in its *2003 Annual Report on Market Issues and Performance* to be published in April.

The CAISO's *2002 Annual Report on Market Issues and Performance*, used a different base to estimate costs, relying on actual purchase information from CERS. DMA reported total wholesale energy and ancillary service costs of just over $10 billion which included the *actual* costs of long-term bilateral contracts. DMA was able to use *actual* long-term purchase costs because we received bilateral purchase cost information from CERS, the agency responsible for purchasing the IOU's net-short load requirements during that period. As a result, DMA was able to make a more accurate total wholesale cost calculation. In January 2003 the IOUs returned to purchasing and scheduling their own bilateral contracts to meet net-short load requirements. The ISO, the CPUC and the IOUs have been working on a confidentiality agreement that would enable the IOUs to share this cost information with DMA. Until this work is complete, DMA can only estimate the bilateral transaction purchase cost component using data from an independent energy information company, Powerdex. Using these estimated costs, DMA calculated that total wholesale energy and ancillary service costs for 2003 were approximately $10.3 billion. The costs were 32 percent

higher than those for 2002 ($7.8 billion) using this same estimation methodology. We used the same estimation methodology for both years to enable a consistent comparison of the relative change in market costs between 2002 and 2003

Actual Loads v. Forecasts. DMA reported in its presentation to the Board of Governors on February 25, 2004, that peak monthly load increased 3.2 percent between January 2003 and January 2004. Monthly average load increased 4.3 percent over the same period.

We have compared these results to the estimates in the CAISO's Winter Assessment dated October 10, 2003. The Winter Assessment included estimates of low, base, and high forecasts of monthly peak load. The forecast model did not explicitly include specific causes for variations in load such as weather or economic growth. Rather, it calculated the reasonable range of peak loads for the purpose of assessing whether electricity supply would be sufficient to meet demand. Table 1 presents those low, base, and high monthly peak forecasts compared to actual monthly peak loads, for November 2003 through February 2004.

Table 1. ISO Winter Assessment Monthly Peak Forecasts v. Actual Load (MW)[1]

Month	Low Case	Base Case	High Case	Actual Peak Load
Nov-03	30,788	32,037	33,293	31,595
Dec-03	31,437	32,995	34,333	33,070
Jan-04	31,818	32,842	34,036	31,460
Feb-04	31,029	31,796	32,752	31,191

For each of the months, with the exception of January 2004, the actual peak load fell between the low and high peak load case forecasts. In January 2004, the actual peak was 358 MW (1.1 percent) less than the forecast low case and 4.2 percent below the forecast base case. The actual low peak load was due to warmer than expected temperatures in Southern California. While January 2004 temperatures were above normal, they were not as high as January 2003 when daily high temperatures, in Southern California daily were above 70 degrees for most of the month. DMA reported in its *Market Analysis Report*, dated February 20, 2003, that "Loads in January 2003 were 3.0 percent lower on average than those in January 2002 … due to mild weather throughout the West."

Although weather fluctuations can have significant impacts on average energy usage and peak load from month to month, the CAISO control area, since July 2003, has experienced consistently higher average loads than those of the previous year. DMA believes it would be useful to weather-normalize load to get a more accurate indication of the underlying economic conditions contributing to load growth over the past year. Table 2 shows the percentage increase or decrease in load compared to the previous year without adjustments for normal weather conditions.

[1] Source: *ISO 2003-2004 Winter Assessment*

Table 2. 2002-2003 Monthly Load Comparison to Previous Year

	Avg. Hrly. Load	Avg. Daily Peak	Monthly Peak
March-03	0.7%	1.6%	4.7%
April-03	-2.7%	-2.2%	0.2%
May-03	-0.8%	0.7%	10.5%
June-03	-1.6%	-1.1%	3.6%
July-03	4.3%	6.9%	0.5%
August-03	5.4%	8.5%	4.3%
September-03	2.2%	3.3%	0.3%
October-03	5.4%	7.0%	3.7%
November-03	-0.2%	1.0%	0.2%
December-03	2.8%	3.1%	2.7%
January-04	4.3%	3.1%	3.2%
February-04	4.5%	3.9%	4.5%

Note: Load figures are based on unadjusted ISO control area loads.

Detailed comparisons to the California Energy Commission forecast are difficult because they produce only an annual peak load and total annual energy forecast. For 2003, the CEC forecasted a CAISO control area peak load of 43,714 MW. This was 2.7 percent higher than the actual 2003 peak load of 42,581 MW. The CEC forecasted a CAISO 2003 annual energy usage of 222,580 GWh, 3.6 percent lower than the actual total energy usage of 230,668 GWh. The CEC had previously published monthly energy use, normalized for weather and economic growth, for the purpose of monitoring conservation following the 2000-2001 energy crisis. However, the CEC discontinued publication of this monthly information in 2002.