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**CALIFORNIA ISO**

# **Report on Real Time Supply Costs Above Single Price Auction Threshold: February 2001**

*Prepared by the Department of Market Analysis  
California Independent System Operator  
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## Report Summary

This report provides a review of real time energy bids accepted and out-of-market (OOM) purchases of Imbalance Energy by the ISO at prices over the \$150 single price auction threshold (or "soft cap") during the month of February 2001. Pursuant to the Federal Energy Regulatory Commission's December 15, 2000 Order, any sales over the \$150 soft cap threshold that are needed to meet demand may be paid "as-bid", but are subject to cost reporting, review, and potential refund.

This report provides a comparison of potential refunds based on three different formulas or screens:

- First, the maximum potential refund under the Commission's March 16 notice are recalculated. As specified in the March 16, 2001 notice, this is based on calculating any potential payments in excess of the monthly proxy price (\$430) during hours of Stage 3 alerts. This formula is applied only for sales of real time energy made directly to the ISO by FERC jurisdictional suppliers.
- Second, potential refunds for the month of February are calculated using the cost-based screen used in the previous DMA report included as part of the March 1, 2001 motion filed by the ISO and EOB. As described in that report, sales of energy at prices over the \$150 thresholds in the ISO's real time energy market relative to estimated costs, including what the ISO considers a reasonable margin above operating costs under current market conditions: 10% of operating costs or \$25/MWh, whichever is less. For natural gas-fired plants within the ISO Control Area owned or operated by major non-utility owners, costs are estimated based on actual unit operating levels, combined with estimated heat rates, spot market gas prices, and, where applicable, estimated NOx emission rates and emission credit costs. For imports into the ISO Control Area, costs are estimated based on daily spot market gas prices and an average 12,000 Btu/kWh heat rate (representing a relatively inefficient thermal unit), plus 10% of operating costs or \$25/MWh, whichever is less. This benchmark price is also used for small suppliers within the ISO control area for which heat rate data were not available.
- In addition, the report includes analysis of excess revenues earned from sales in the real time energy relative to an hourly competitive baseline price. The hourly competitive baseline price used in this analysis is specifically designed to represent the standard proposed in the Commission's March 9 order and March 16 notice for setting the proxy price to be used in refunds, i.e. "the market clearing price that would have occurred had the sellers bid their variable costs into a single price auction." However, unlike the specific proxy price used by the Commission, the hourly competitive baseline price used in the DMA report is based on actual hourly load and supply conditions, combined with spot market gas prices, unit-specific heat rates, and, where applicable, estimates of unit-specific NOx emission rates and emission credit costs. The hourly competitive baseline price used in this analysis is the same hourly price developed as part of analysis of system-level market power

previously submitted to the Commission.<sup>1</sup> In this report, potential refunds for individual transactions in the real time market over the \$150 soft cap are calculated based on the degree to which each transaction sales price exceed the hourly competitive market clearing price (CMCP) calculated as part of this previous analysis.<sup>2</sup>

Table 1 summarizes results of this analysis for direct sales of real time energy to the ISO by FERC jurisdictional sellers. Table 2 summarizes results for all sales of real time energy, including direct sales to the ISO through non-FERC jurisdictional entities, and sales from different suppliers made through California Department of Water Resources (CDWR). Table 3 summarizes combined results for all sales of real time energy. More detailed results for individual sellers are provided in a confidential attachment (Appendix A) submitted with this report.

Results of this analysis show that numerous sellers were able to charge prices substantially above levels that may be considered just and reasonable based on a detailed analysis of each suppliers costs, as well as what each supplier would have earned under competitive market conditions.

- As shown in Table 1, the Commission's March 16 notice identified approximately \$51 million in potential refunds for sales of real time energy directly by sellers under FERC market-based rate authority. Under the cost-based standard used in the DMA report to screen sales, refunds from these same sellers would total about \$128 million. Based on the competitive baseline price, refunds from these same transactions would total about \$108 million.
- As shown in Table 2, sales of real time energy imports made by or through non-jurisdictional sellers account for about \$555 million of real time energy purchases in February. About \$250 million of these costs represent charges that exceed estimated supply costs (plus a reasonable margin). When compared to estimated ISO system prices that would result under competitive market conditions, these costs exceed the competitive baseline levels by approximately \$240 million.

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<sup>1</sup> *Further Analyses of the Exercise and Cost Impacts of Market Power In California's Wholesale Energy Market*, March 2001, Prepared by Eric Hildebrandt, Department of Market Analysis. Submitted as Attachment B to the ISO's *Comments on FERC Staff's Recommendations on Prospective Market Monitoring and Mitigation for the California Wholesale Market*, March 22, 2001.

<sup>2</sup> Specifically, potential refunds were calculated for each real time energy transaction using the following formula:

$$\text{Excess} = \text{MW} \times \text{Min}(0, \text{Bid Price} - \text{CMCP}),$$

Where, MW = Quantity of Real Time Energy, Bid Price = Bid (or Out-of-Market) Price, and CMCP = Competitive Market Clearing Price for the ISO system for that hour based on analysis described in the report referenced in Footnote 1.

**Table 1. Summary Results for Direct Sales of Real Time Energy by FERC Jurisdictional Sellers**

	Total MW > \$150	Unadjusted Cost (Millions)	Potential Refunds (Millions)---->			Average Prices (\$/MWh) ----->			
			FERC Formula	Cost + 10%/\$25	Comp. Market Price	Unadjusted Avg. Price	FERC Formula	Cost + 10%/\$25	Comp. Market Price
NGOs	719,188	\$308	\$51	\$128	\$106	\$428	\$357	\$249	\$281
Imports	10,416	\$3.7	\$0.1	\$1.8	\$1.9	\$351	\$344	\$175	\$167
Totals	729,604	\$311	\$51	\$130	\$108	\$427	\$356	\$248	\$279

\* Includes gas-fired generation of major Non-Utility all Generators within ISO Control Area.

**Table 2. Summary Results for Sales of Real Time Energy by non-FERC Jurisdictional Sellers**

	Total MW > \$150	Unadjusted Cost (Millions)	Potential Refunds (Millions)---->			Average Prices (\$/MWh) ----->			
			FERC Formula	Cost + 10%/\$25	Comp. Market Price	Unadjusted Avg. Price	FERC Formula	Cost + 10%/\$25	Comp. Market Price
Other ISO*	4,763	\$1	\$0	\$.222	\$.263	\$248	\$248	\$201	\$193
Imports	1,301,698	\$555	\$0	\$249	\$239	\$427	\$427	\$235	\$243
Totals	1,306,461	\$557	\$0	\$250	\$240	\$426	\$426	\$235	\$243

\* Includes all other non-UDC suppliers within control area not included in Table 1.

**Table 3. Summary Results for All Sales of Real Time Energy (All Sellers)**

	Total MW > \$150	Unadjusted Cost (Millions) *	Potential Refunds (Millions)---->			Average Prices (\$/MWh) ----->			
			FERC Formula	Cost + 10%/\$25	Comp. Market Price	Unadjusted Avg. Price	FERC Formula	Cost + 10%/\$25	Comp. Market Price
ISO Area	723,951	\$309	\$51	128	106	\$427	\$356	\$249	\$280
Imports	1,312,114	\$559	\$0.1	\$251	\$241	\$426	\$426	\$235	\$242
Totals	2,036,065	\$868	\$51	\$380	\$347	\$426	\$401	\$240	\$256

\* NOTE: Total unadjusted costs for all real time energy purchased by the ISO in February from all suppliers including sales under the \$150 soft cap are estimated at just over \$1 billion (\$1,018,000,000).

- As shown in Table 3, total potential costs for real time energy exceed levels that that may be considered just and reasonable based on a detailed analysis of each suppliers' costs by about \$380 million, or about 38% of total real time energy costs.
- Analysis based on what suppliers would have earned under competitive market conditions yields similar results, indicating that total potential real time energy costs exceed costs that would be incurred under competitive conditions by about \$347 million, or about 34% of total real time energy costs.
- The maximum potential refunds for real time energy under the Commission March 16 notice (\$51 million) represent about 16% of sales over the \$150 threshold made directly to the ISO by sellers under FERC market-based rate authority. The \$51 million in maximum potential refunds represents less than 5% of total real time energy costs in February 2001.

**APPENDIX A**

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