California ISO

California Independent
System Operator

Market Analysis Report
Events of September 2004

Board of Governors Meeting

November 10, 2004

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September Market Highlights

- Record loads:
  - ISO record load of 45,597 MW set Sept. 8; Approached record including SMUD of 45,884 MW (7/12/1999)
  - SP15 record load of 25,869 MW set Sept. 10
  - Week of fairly hot weather, although not at levels that historically set records
  - Continue to see average load growth of 3 to 4 percent

- Unusually high levels of Imports, near 10,000 MW during system peak, helped to meet load
  - Excess capacity in Southwest due to moderate loads there
    - Imports from Southwest 20 percent higher than last year
  - Resulted in nearly $9 million in interzonal congestion costs
    - $4.5 million incurred on Palo Verde Intertie during peak load periods
- Ancillary Service Market Prices down 60 % from August
  - New market rules established under Amendment 60 have resulted in increased offers into A/S markets

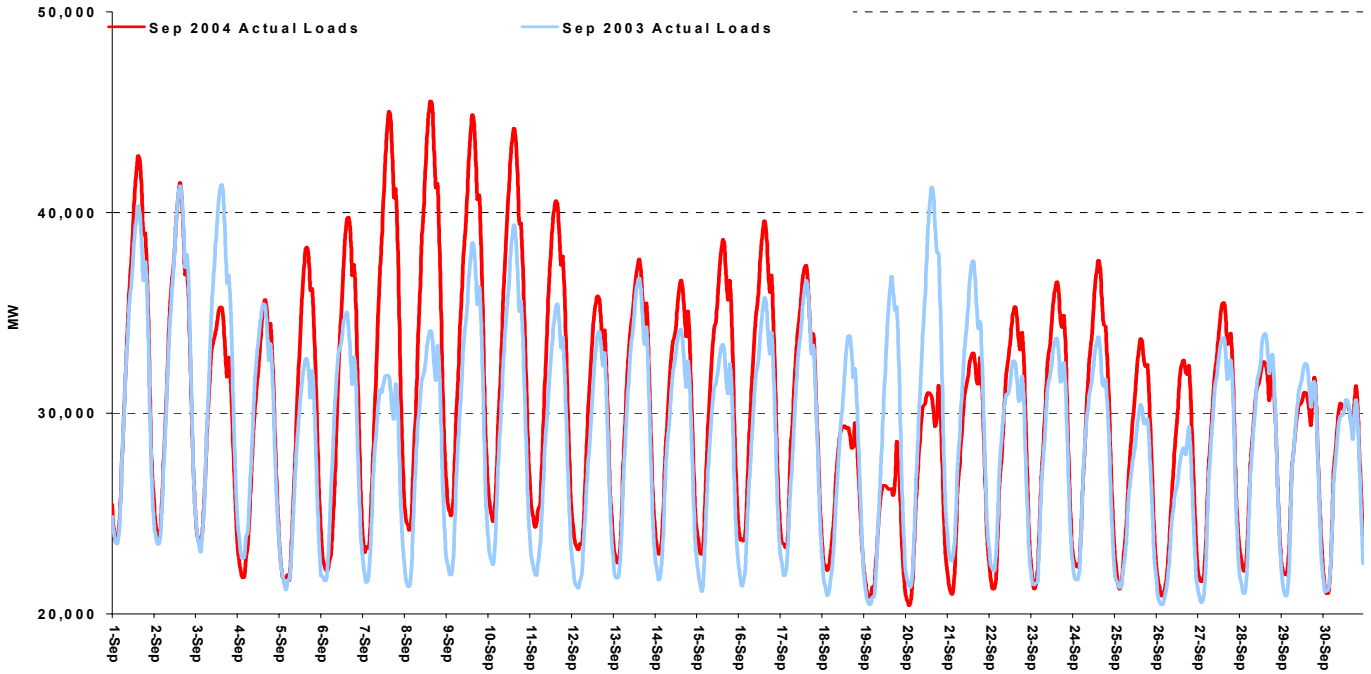
Market Highlights Continued:

- Intrazonal Congestion costs remain high
  - Over $40 million in September (MLCC+redispatch+RMR)
  - Nearly $300 million year to date

- Phase 1B of MRTU Implemented on October 1.
  - Real-time energy costs and price volatility increased during first two weeks
    - Not all due to new real-time systems—concurrent major resources outages including SONGS Unit 3, Palo Verde Unit 3, and the Pacific DC Intertie
  - Prices have since moderated, particularly within SP15.

Record peak loads on Sep. 7-10 during fairly hot weather across California, but relatively mild weather in Southwest, allowing for robust imports

Comparison of Loads: Sep-04 to Sep-03



	2003	2004	Pct. Chg.
Peak Load (MW)	41,394	45,562	10.1%
Avg. Energy (MW)	29,095	30,081	3.4%

Load growth continues in 3-4% range

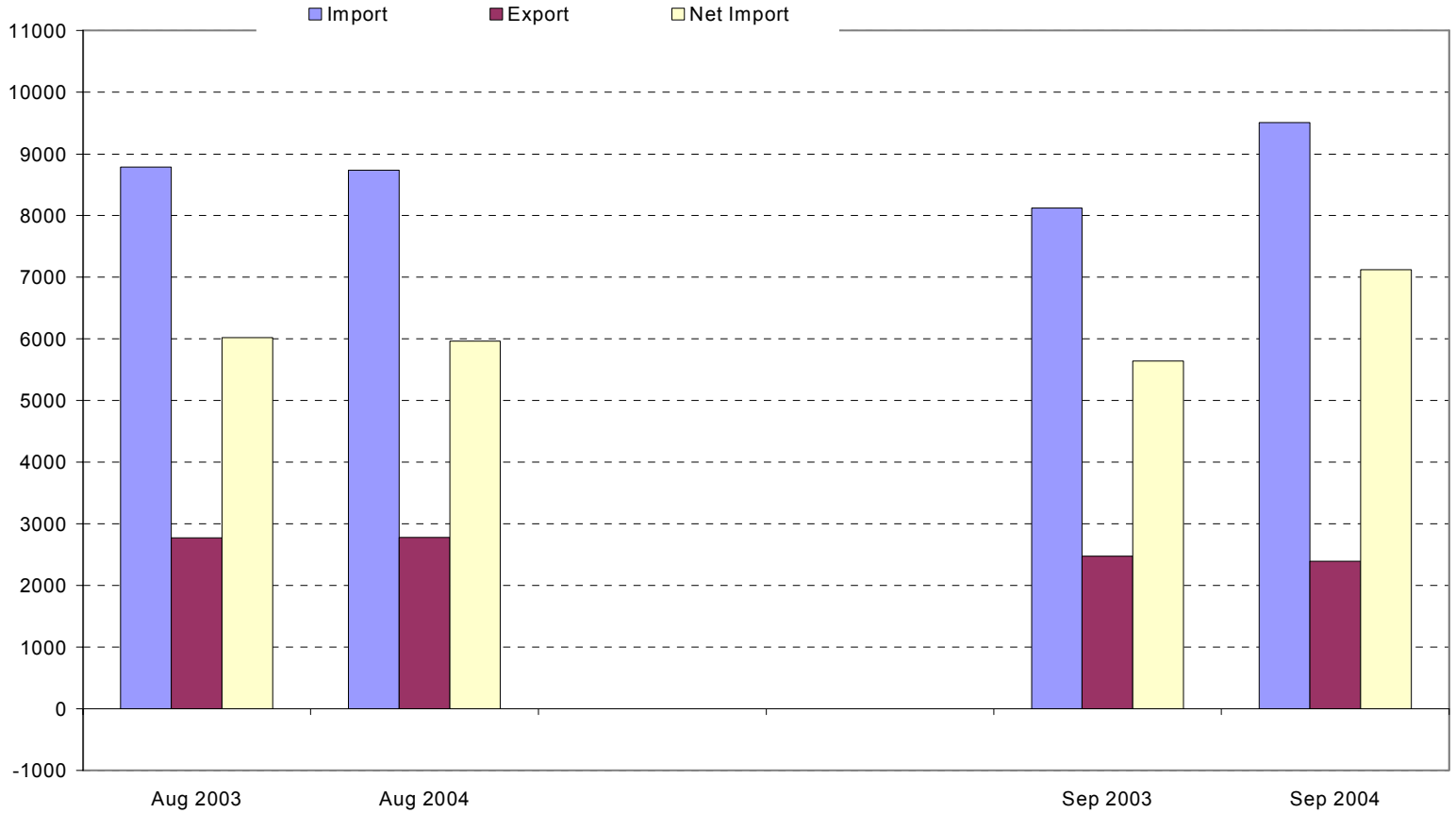
Load Growth Rates Compared with Same Month Prior Year

	Avg. Hrly. Load	Avg. Daily Peak	Avg. Daily Trough	Monthly Peak
October-03	5.4%	7.0%	2.6%	3.7%
November-03	-0.2%	1.0%	-0.8%	0.2%
December-03	2.8%	3.1%	1.5%	2.7%
January-04	4.3%	3.1%	5.1%	3.2%
February-04	4.5%	3.9%	5.4%	4.5%
March-04	4.4%	5.1%	2.5%	4.5%
April-04	7.1%	8.3%	4.8%	31.1%
May-04	7.3%	7.7%	5.5%	2.5%
June-04	6.6%	6.9%	6.1%	-4.7%
July-04	0.7%	0.3%	1.9%	4.0%
August-04	1.0%	0.6%	0.6%	5.2%
September-04	3.4%	3.5%	3.4%	10.1%

Notes: Through 7/10/03: Actual loads at top of hour. Since 7/11/03: Hourly average loads.

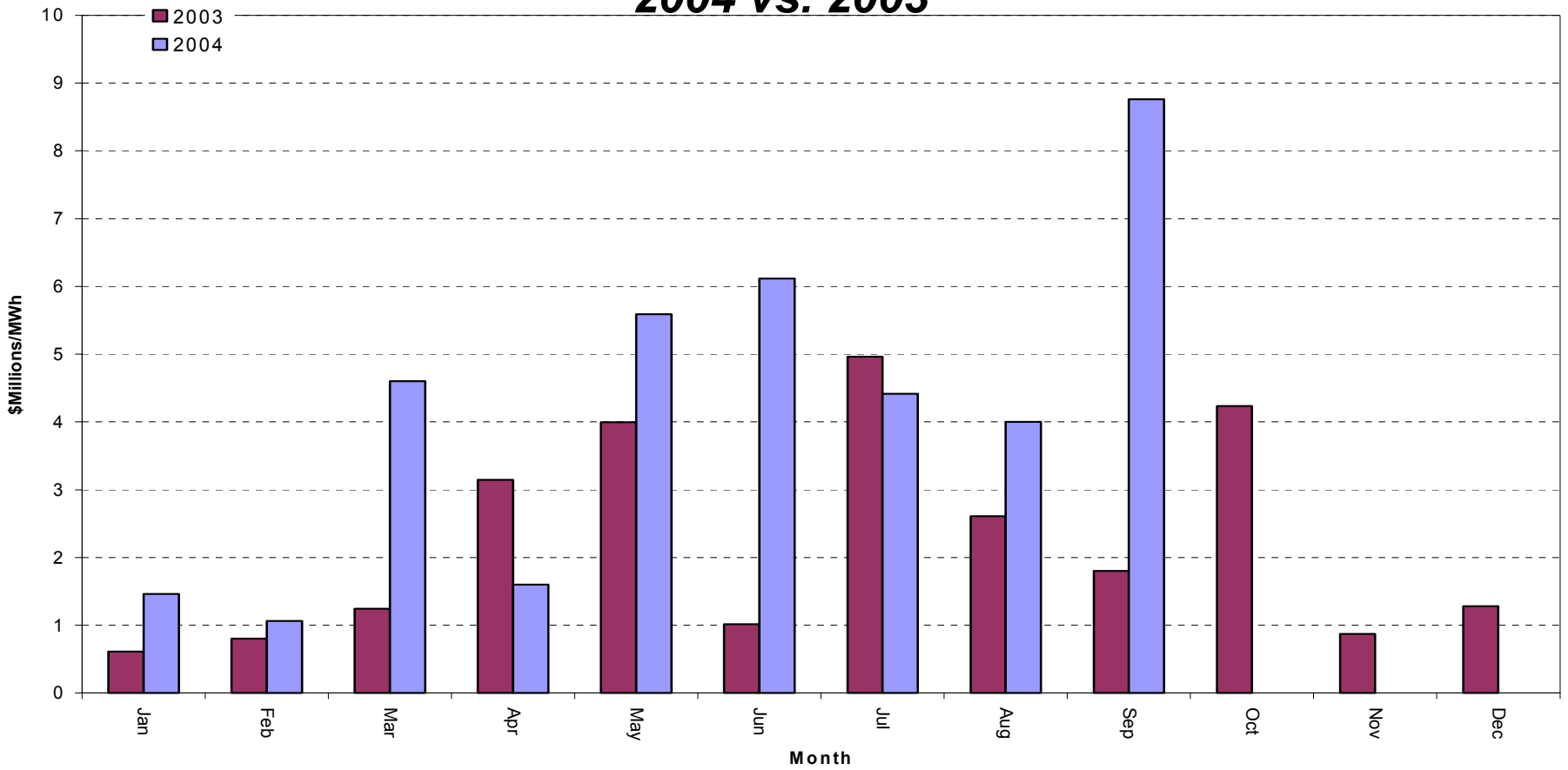
Unusually high levels of imports helped to meet peak loads, averaging over 7,000 MWs during peak hours

Imports and Exports in Peak Hours: 2004 v. 2003



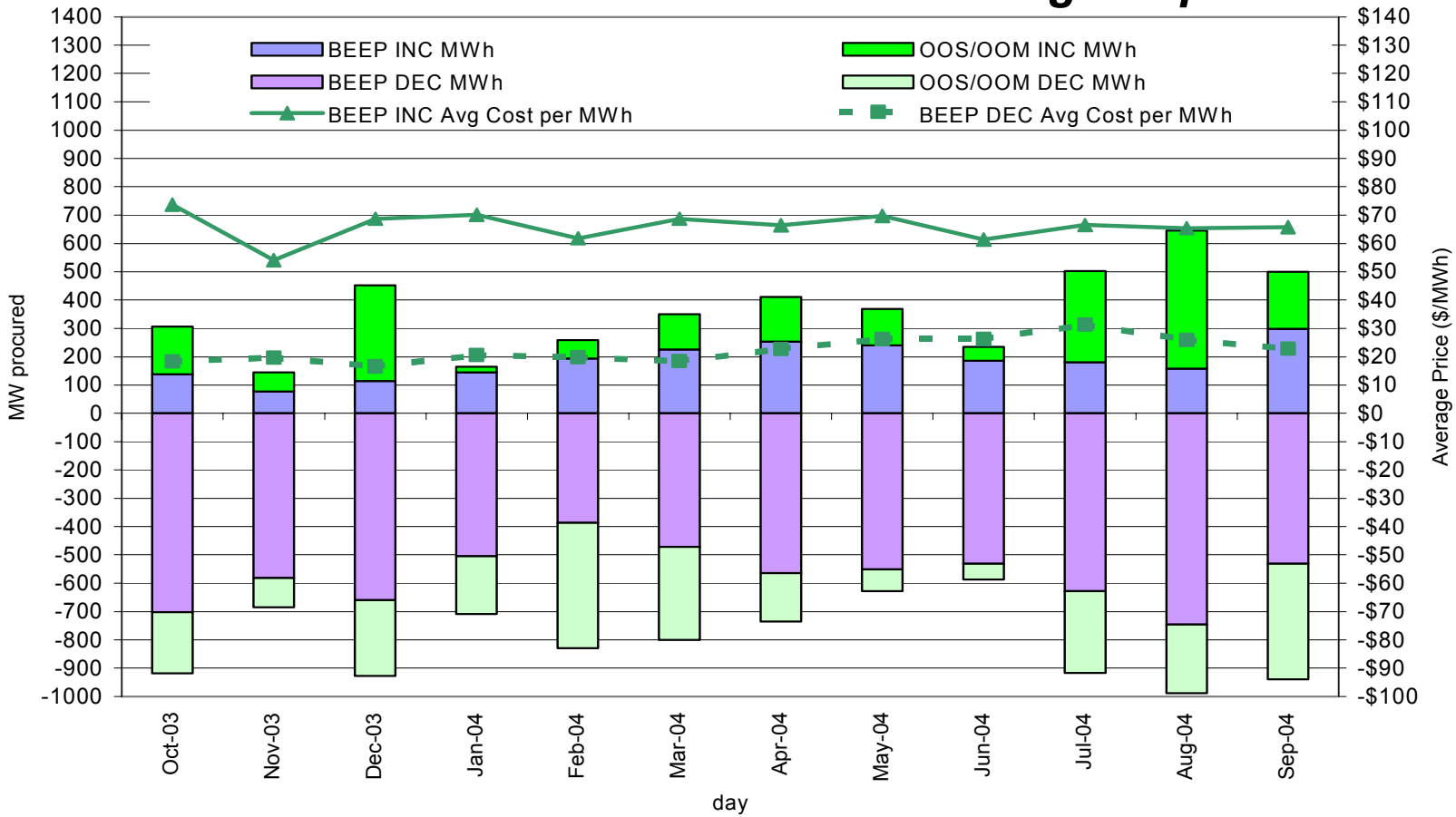
Imports from the SW during peak load periods and off-peak wheeling to NW resulted in highest interzonal congestion costs since 2002

Monthly Interzonal Congestion Costs: 2004 vs. 2003



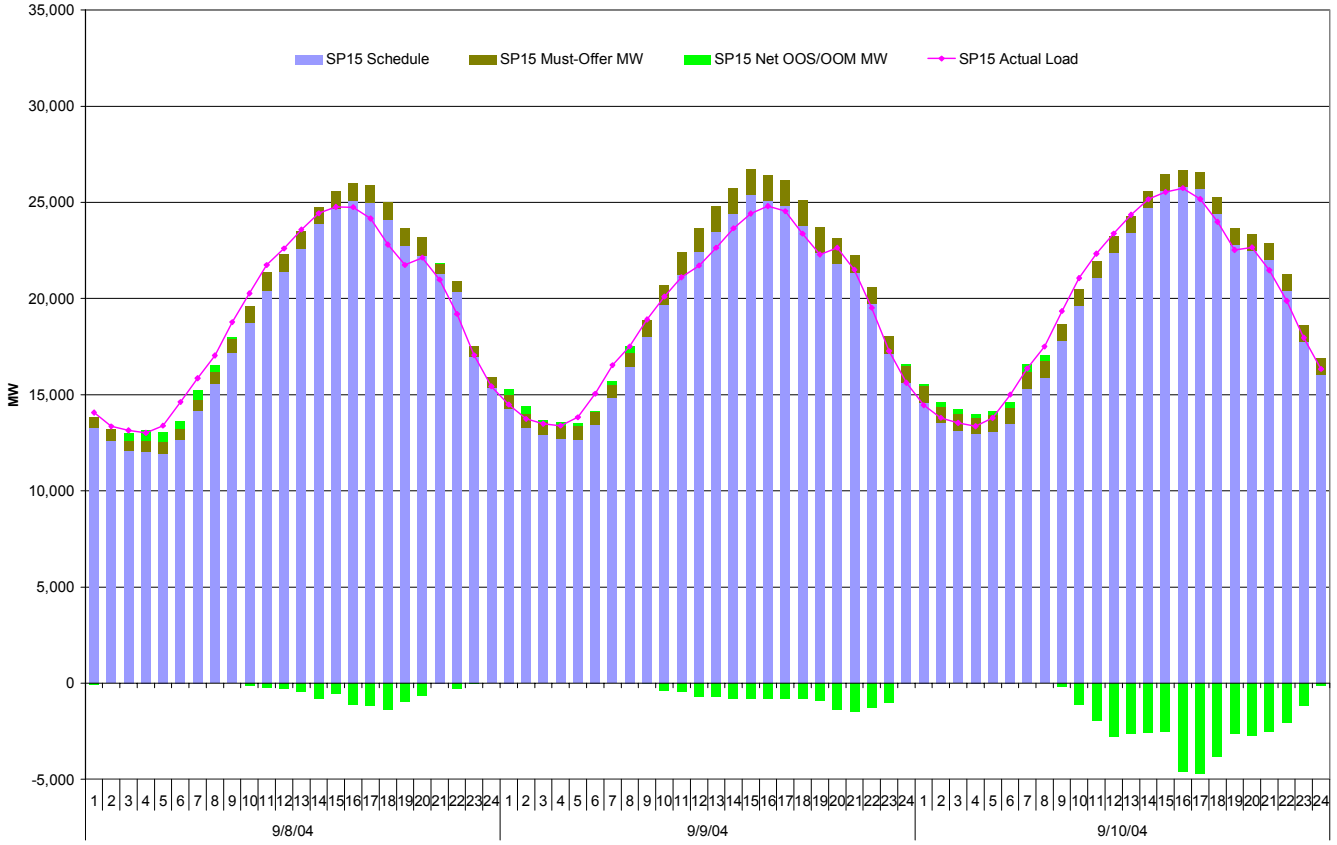
Average Real-time prices stable at $65.77 for INC Energy

Monthly Average BEEP Volumes and Prices, and OOS/OOM Volumes: Oct-03 through Sep-04



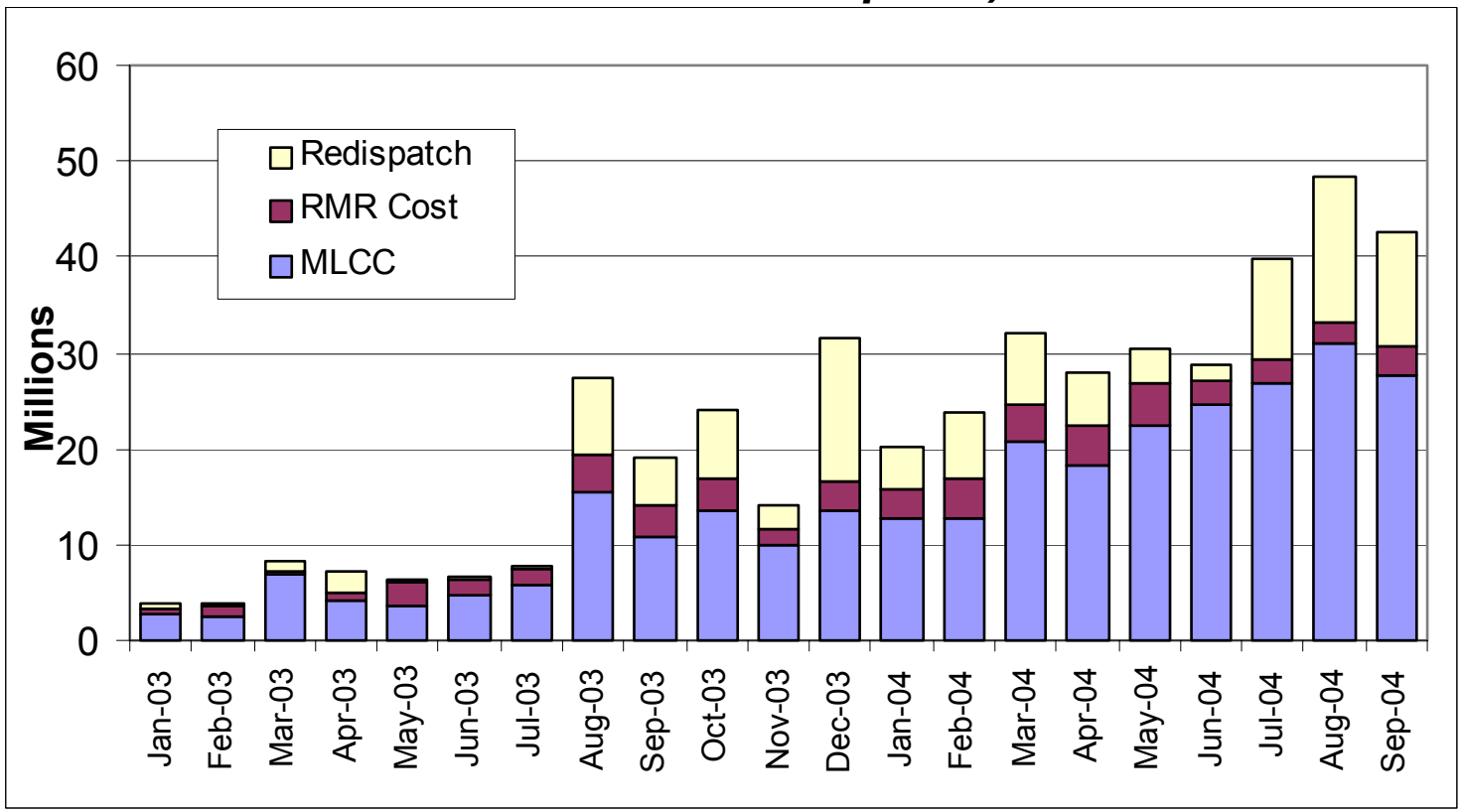
Forward-scheduled energy nearly sufficient to cover load on peak days

SP15 Scheduled, Must-Offer, and OOS/OOM energy, v. Actual Load, Sept. 8-10



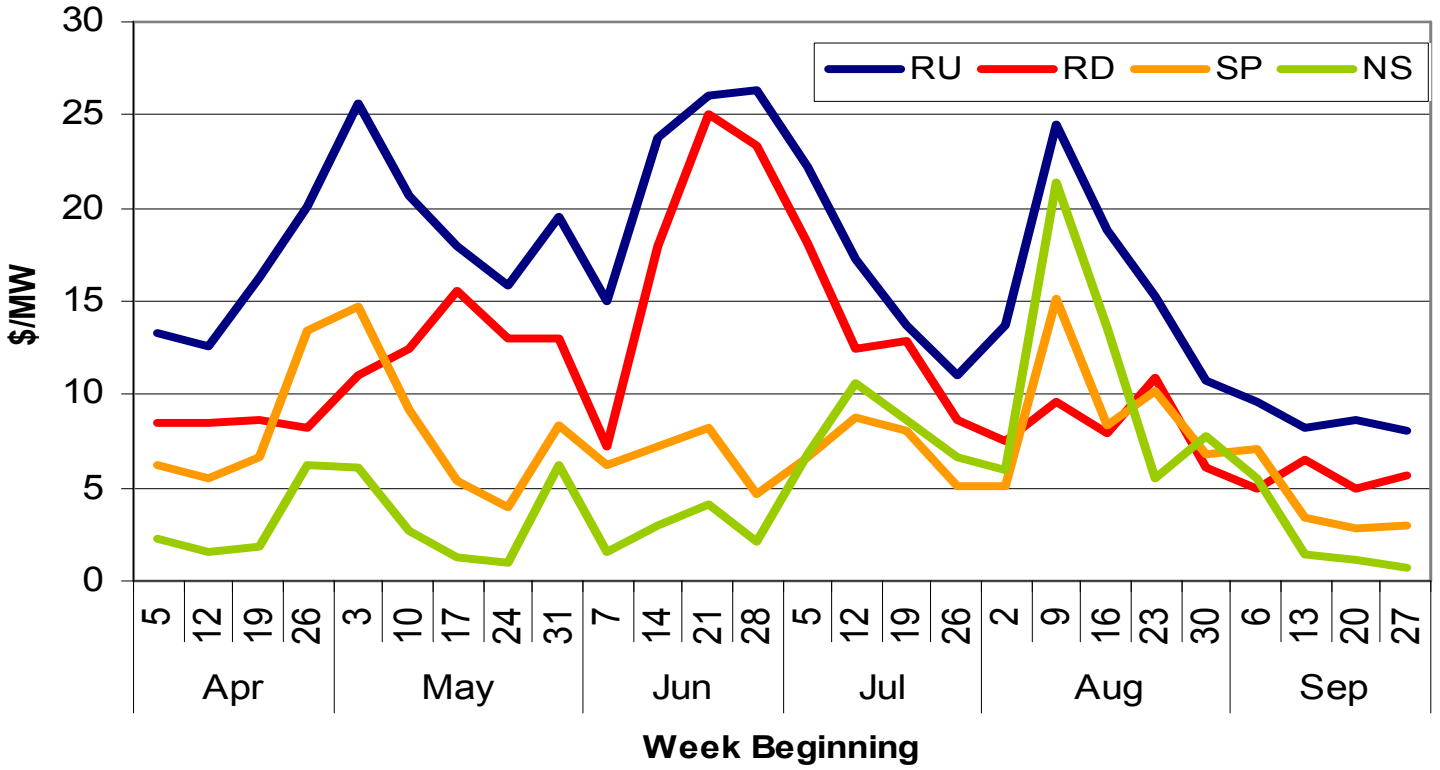
Upward progression of Intrazonal congestion costs since mid-2003, as transmission constraints prevent delivery of scheduled energy

Monthly Intra-Zonal Congestion Costs (RMR, MLCC , and real-time OOS/OOM redispatch)



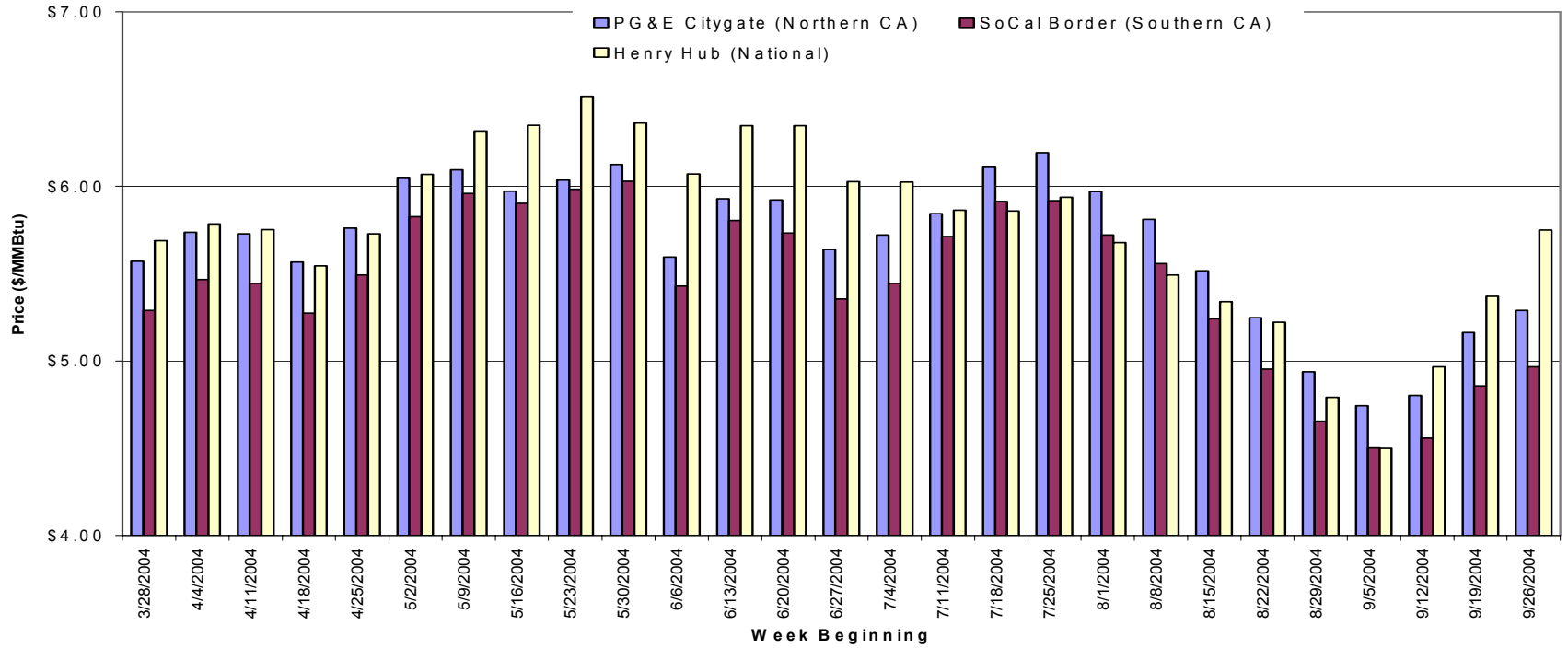
Dramatic decreases in A/S prices, due to Amendment 60 implementation and high levels of available capacity

Weekly Average A/S Costs through September



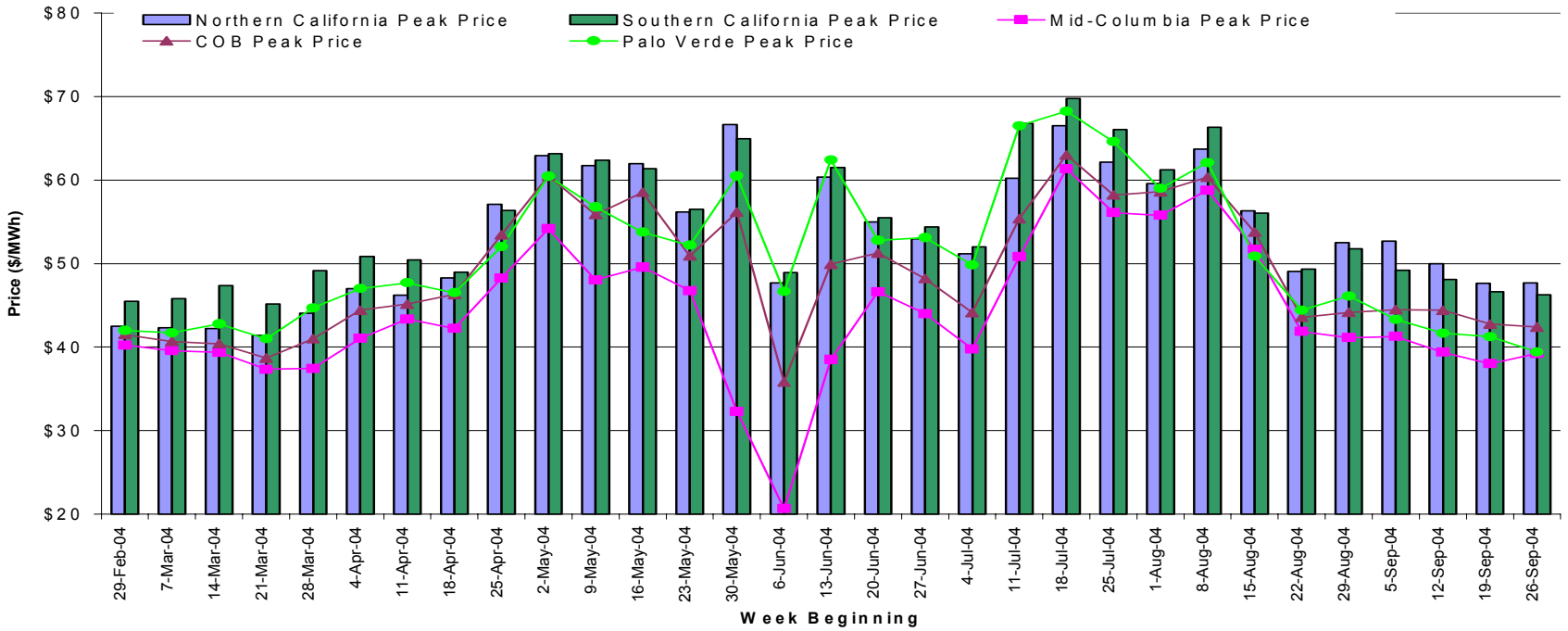
Natural gas prices moving upward following hurricane-related production outages and high demand from storage injections

Weekly Average Gas Prices through September



Despite high gas prices, bilateral electric prices remained stable due to moderate loads and excess supply in the Southwest

Regional Day-Ahead Forward Electric Prices - Weekly Averages

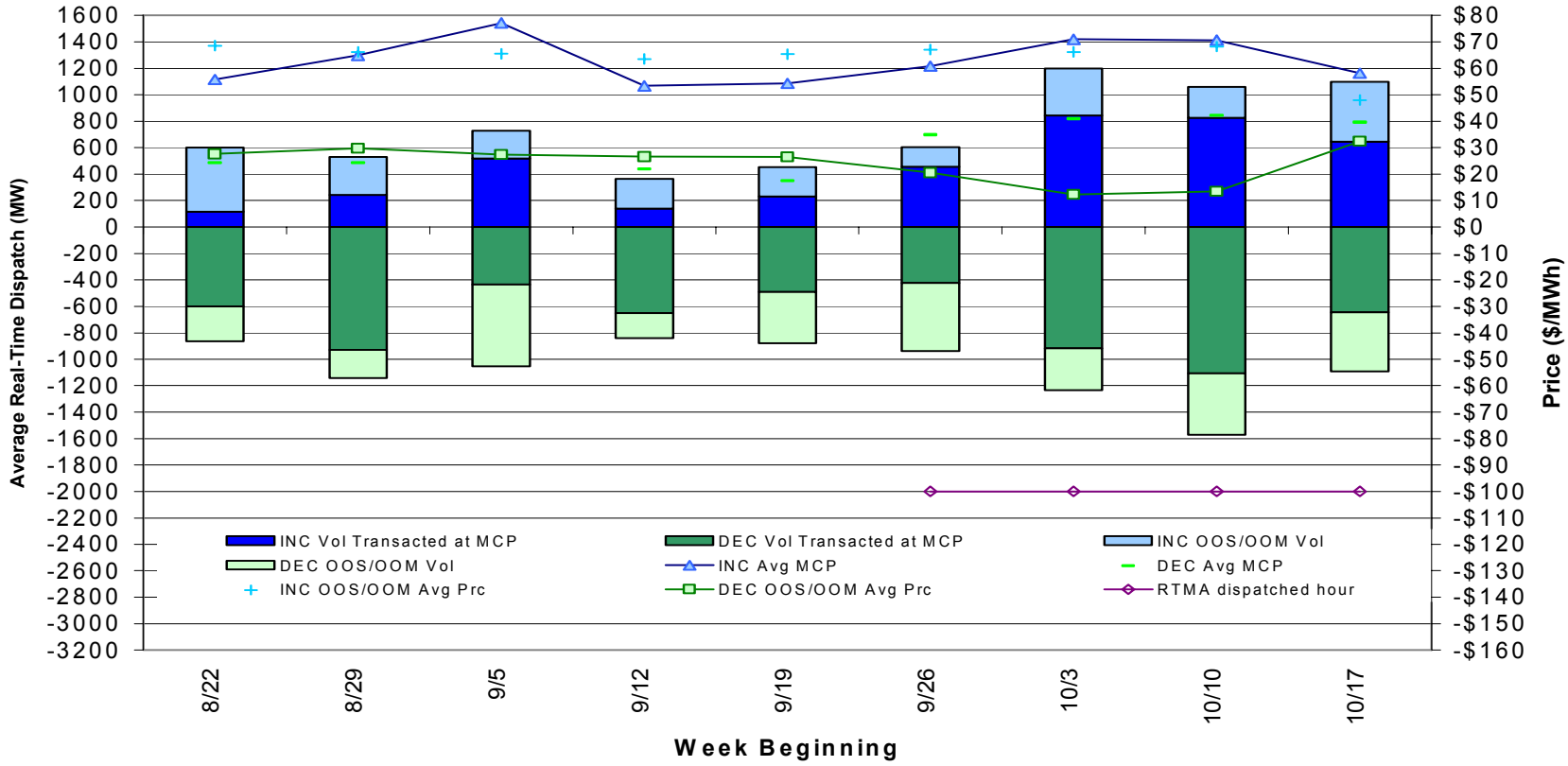


Phase 1b RTMA Prices

- Implemented on Oct. 1, concurrent with San Onofre 3 and Pacific DC Intertie outages
- After frequent price spikes in early October, real-time market settled down
- Average prices paid for energy similar to those before 10/1
- Real-time dispatched volumes higher, due in part to RTMA efficient clearing feature
- Price spikes generally contained to ramping periods
  - price tends to spike for one or two intervals, then falls, as high-priced energy is replaced with lower-priced energy

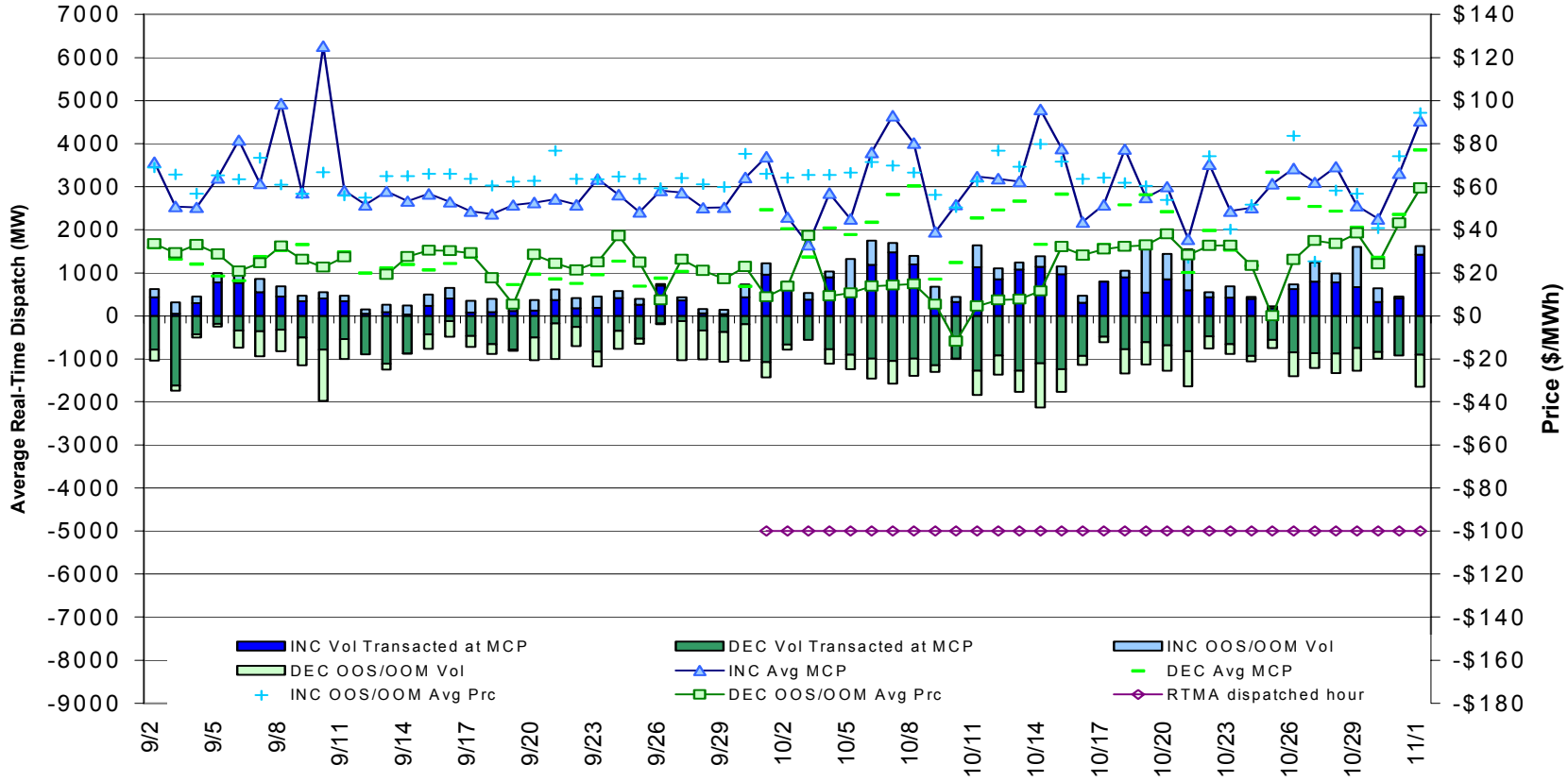
RTMA prices similar to those observed under BEEP

Weekly Average ISO RTMA In-Sequence and OOS/OOM Volumes and Prices: 24-Aug through 23-Oct



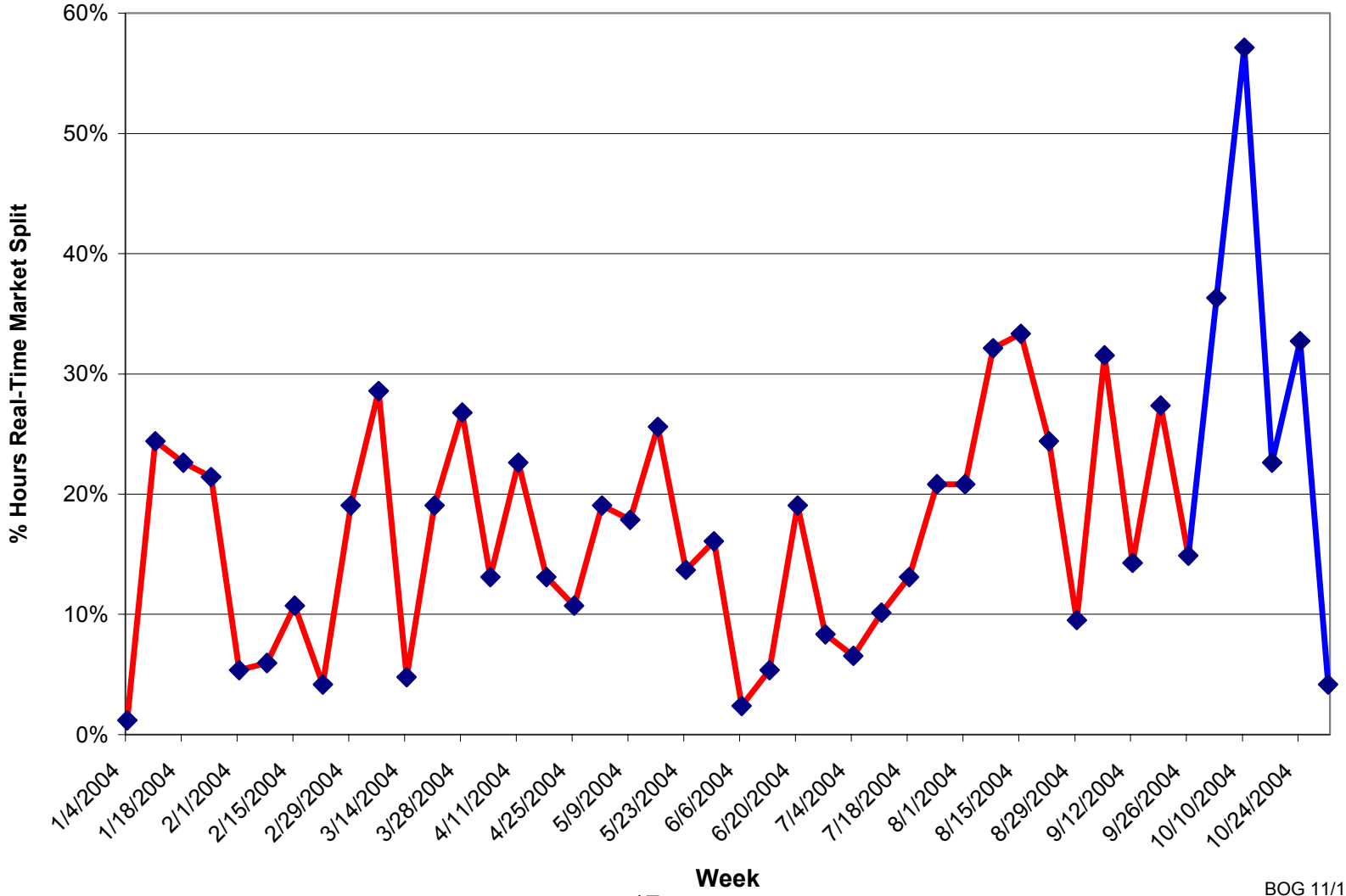
October RTMA real-time energy prices more volatile, more dispatch volume compared to September BEEP prices

Daily ISO RTMA In-Sequence and OOS/OOM Volumes and Prices: 02-Sep through 01-Nov



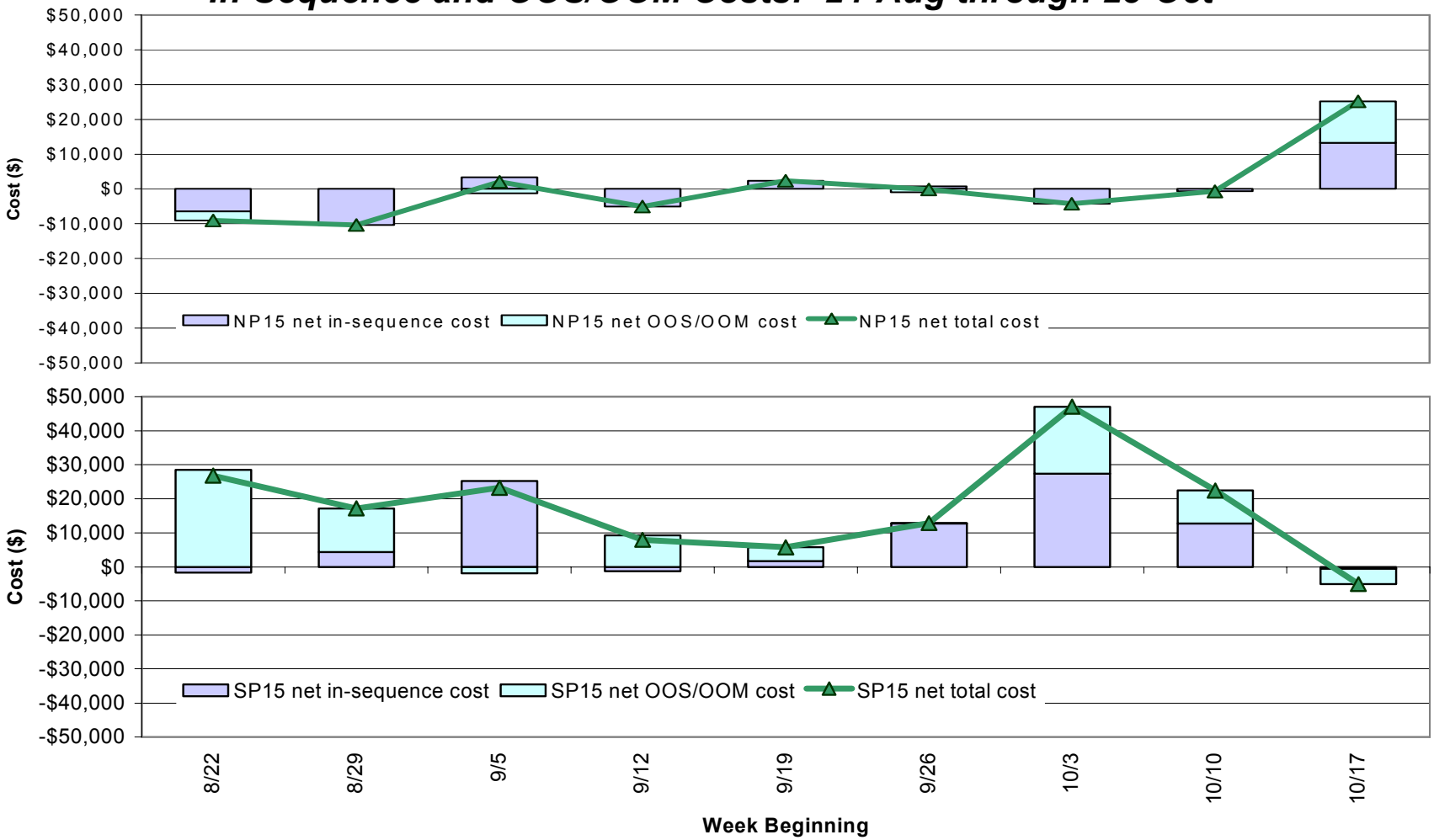
Zonal price splitting more frequent in early Oct: More congestion due to SONGS, PDCI outages; resultant tighter SCIT parameters

Frequency of Real-Time Zonal Price Splits: Percentage of Intervals



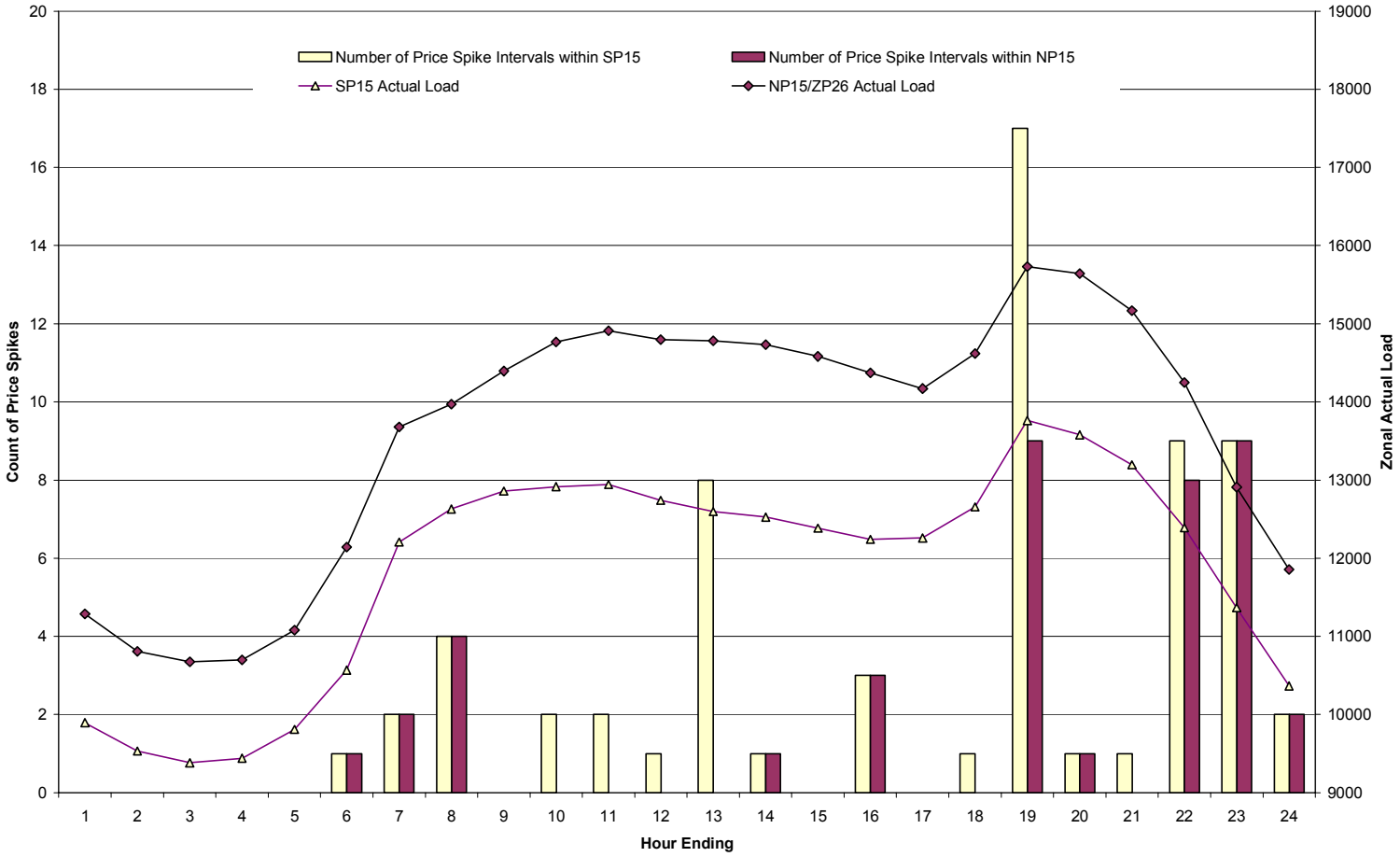
SP15 Costs were higher the first week but generally have been declining

Weekly Average ISO RTMA NP15/ZP26 (Top) and SP15 (Bottom) In-Sequence and OOS/OOM Costs: 24-Aug through 23-Oct



Price spikes tend to occur during ramping periods

Number of Real-Time Zonal Price Spike Intervals by Hour of Day v. Zonal Actual Loads, Oct. 24-30



Notes:
A spike is defined as the interval MCP > $100/MWh.
Prolonged spike in HE 13 is due to an ISO dispatch software issue on 10/25.

Spikes occur most often at the beginning of the hour as RTMA resolves imbalances due to schedule changes. Price spikes generally brief, usually limited to 1 or 2 intervals.

Price Spike Frequency by Dispatch Interval (bottom): 17-Oct through 23-Oct