





The Perfect Storm: The First Ten Months of the California Failure

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The Perfect Storm

- This Week's "Emergencies"
- Villian and Victim
- The Role of Secrecy
- AB-1890
- Twenty Years of Efficient Markets
- May 22, 2000
- Market Power
- Inefficient Administered Markets
- Solutions?

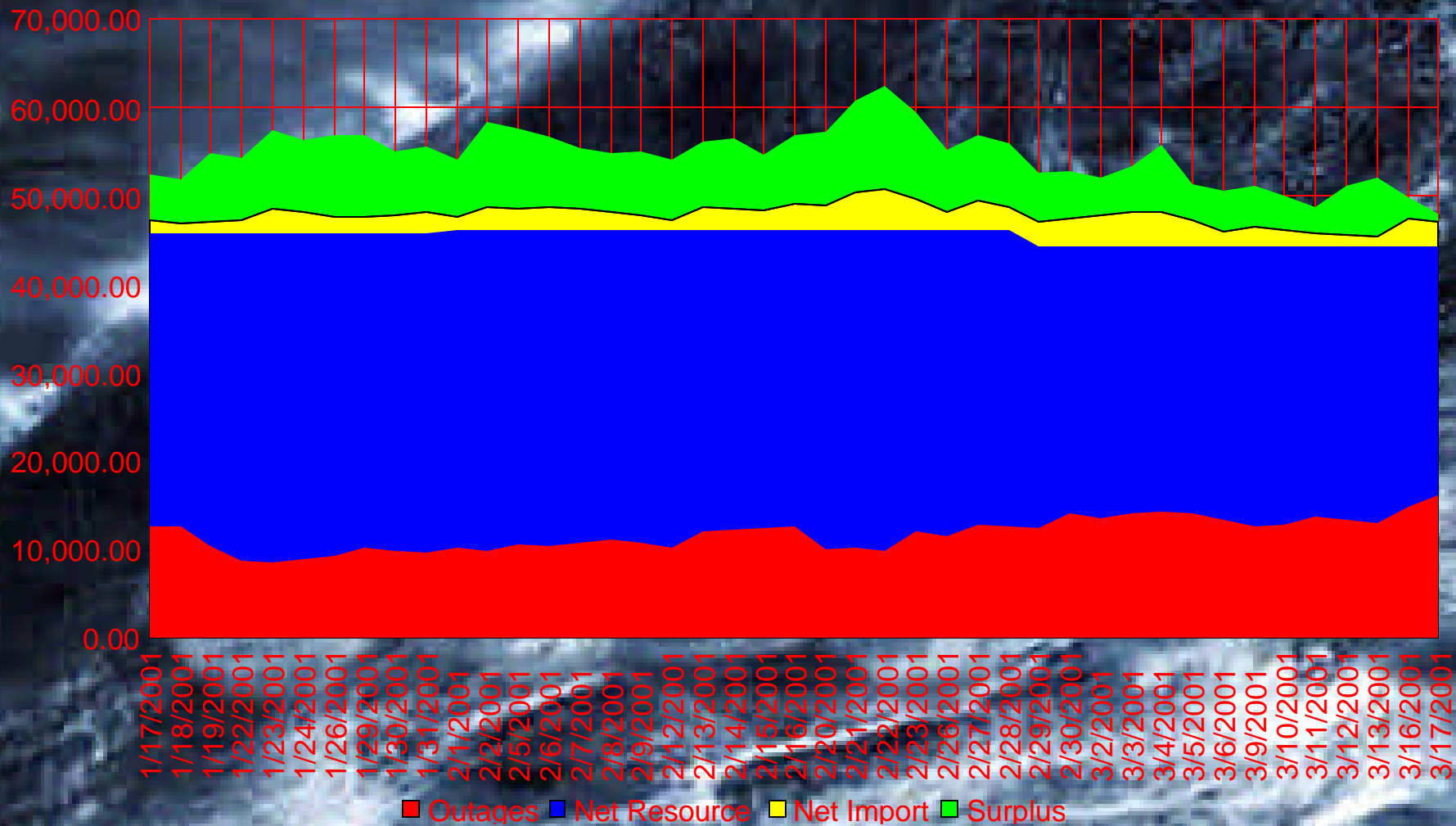


This Week's "Emergencies"

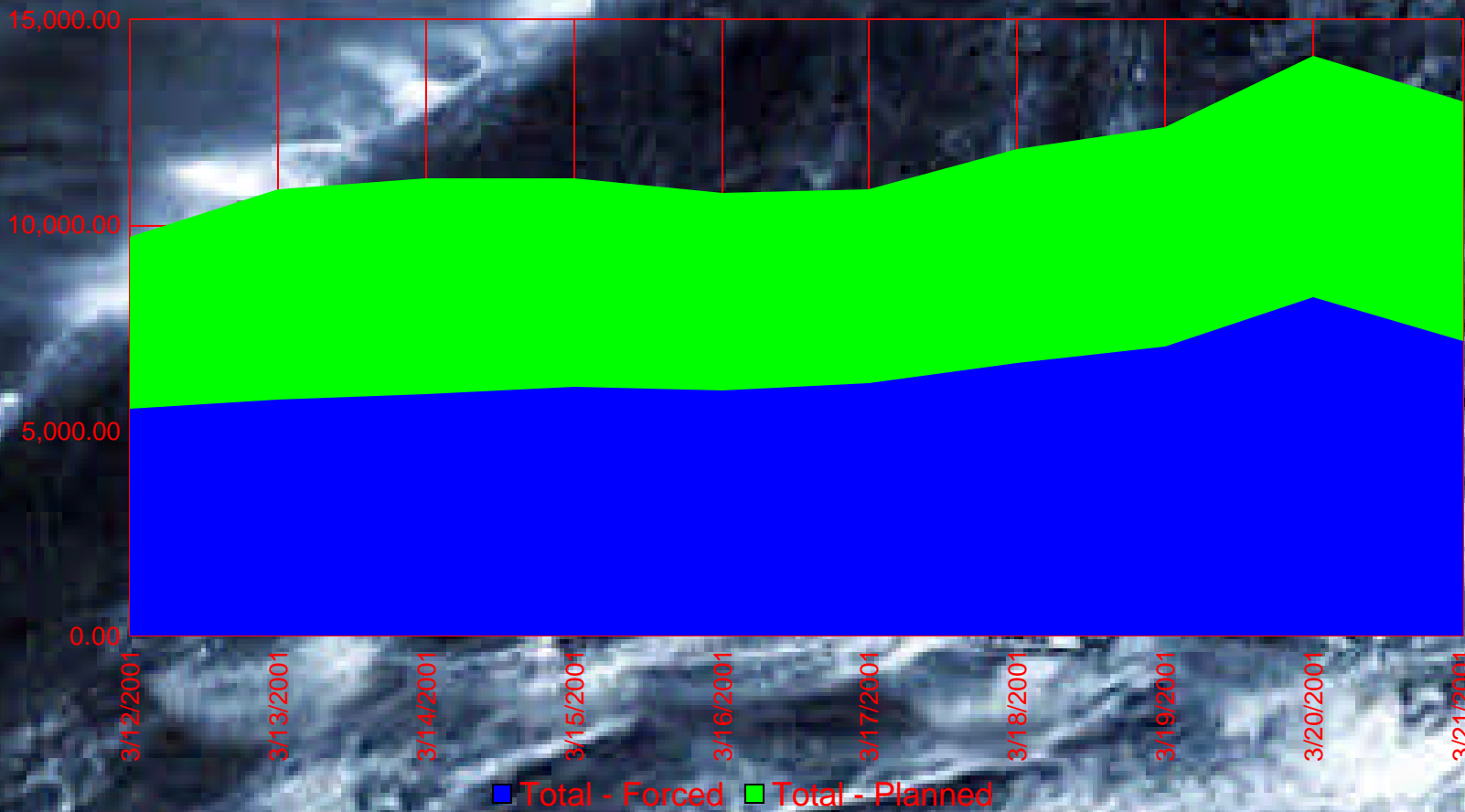
- March is a period of low loads in both electric resistance heating and cooling areas
- The California ISO announced blackouts two days this week
- The problem was not loads (as they announced) but outages



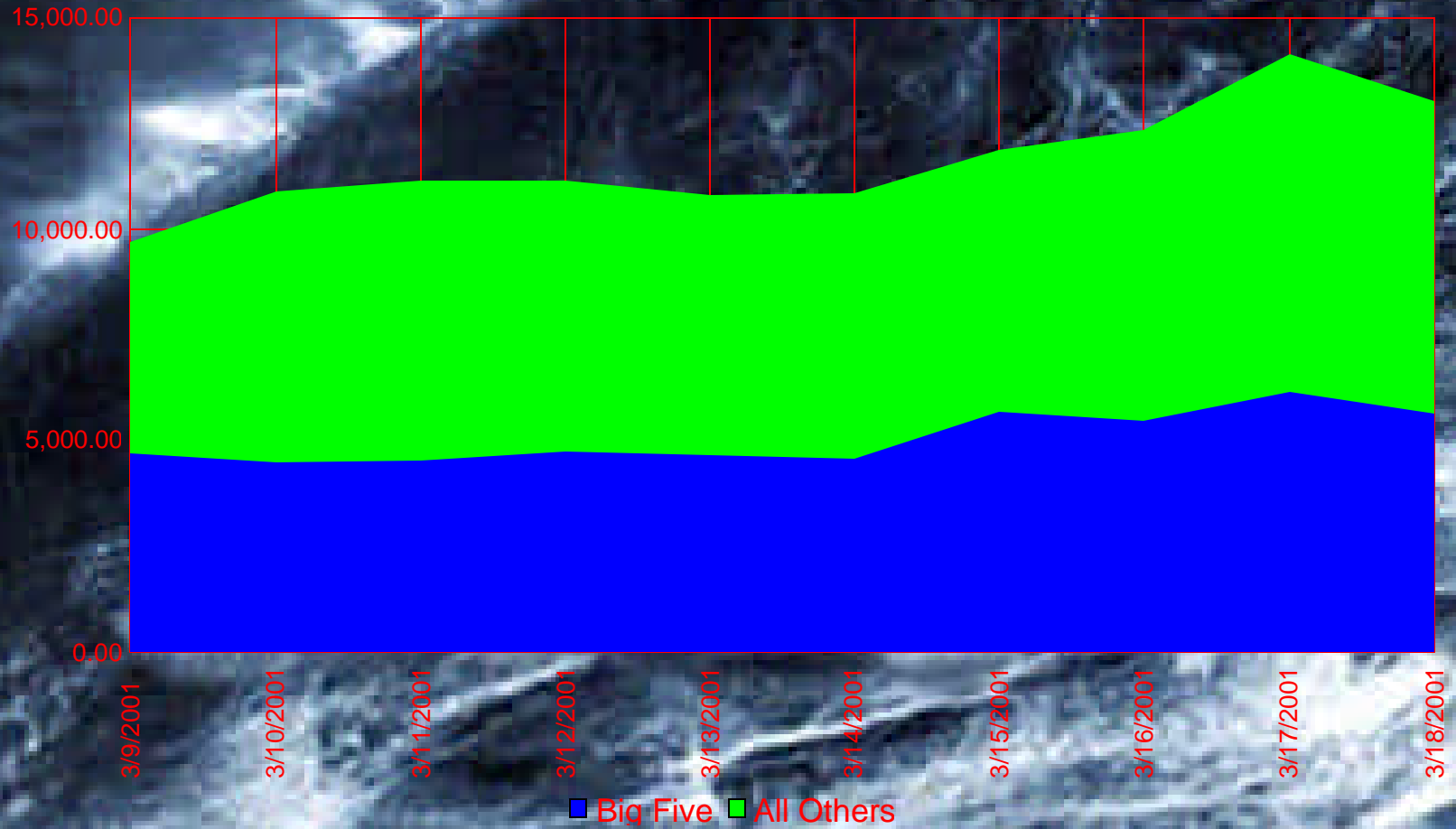
Loads and Resources



Outage Types



Outage Owners



Villian and Victim



Lucius N. Littauer
Professor of Public
Policy and
Administration at the



Emeritus Professor of
Law
University of California
at Davis School of Law



Villians and Victims

- Professor Hogan believes (to this day) that markets must be guided and managed by government
- Professor Fessler believes (he has been understandably silent since may 22nd) that prices cannot be measured accurately without Professor Hogan's mechanisms
- Their unfortunate common understanding of the world set California down the path to administered markets, mandated secrecy, inefficiency, and ultimately blackouts



The Role of Secrecy

- Secrecy was a central tenet of the California experiment
- The logic was that cost recovery required "transparent" pricing (Dan Fessler), "transparent" pricing required administered markets (Bill Hogan), the absence of competitors required secrecy of bids and outcomes
- The result was that market manipulation and management failure became obscured by the mantle of competition embracing secrecy
- Simply stated, secrecy in areas of central public policy importance is neither required nor desirable



AB-1890

- AB-1890 was neither engineered nor inspired -- it was a disaster designed by a committee
- The primary plan was the creation of two new state agencies -- the ISO and the PX -- to administer California markets
- Customer choice was an early and inadvertant casualty -- eliminated by the formulas designed to recover stranded costs



California's System



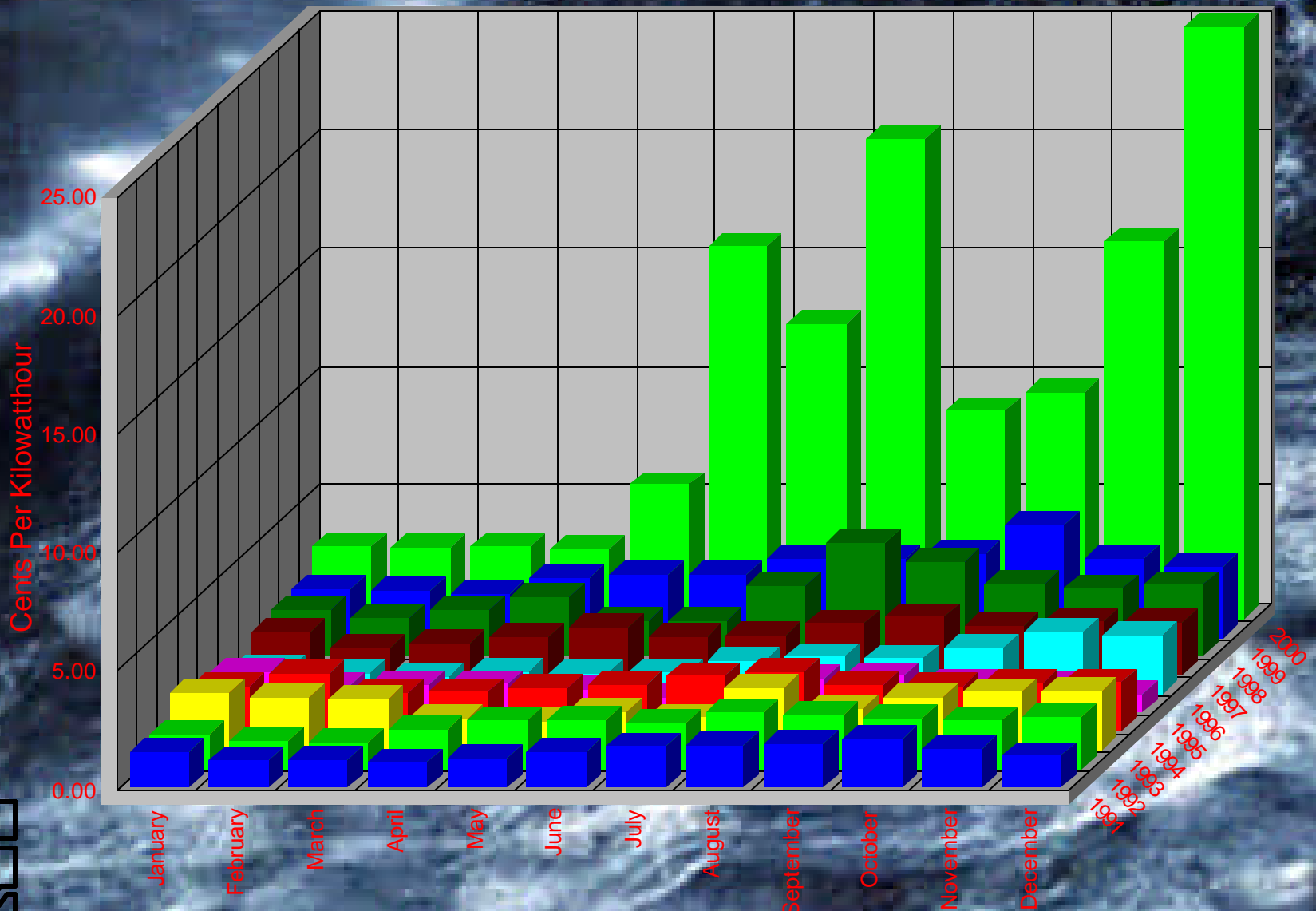
Prices

Twenty Years of Efficient Markets

- Since 1980 the West Coast has enjoyed an active wholesale market
- FERC ratified the market in 1987
- California's deregulatory scheme was a step backwards



Ten Years

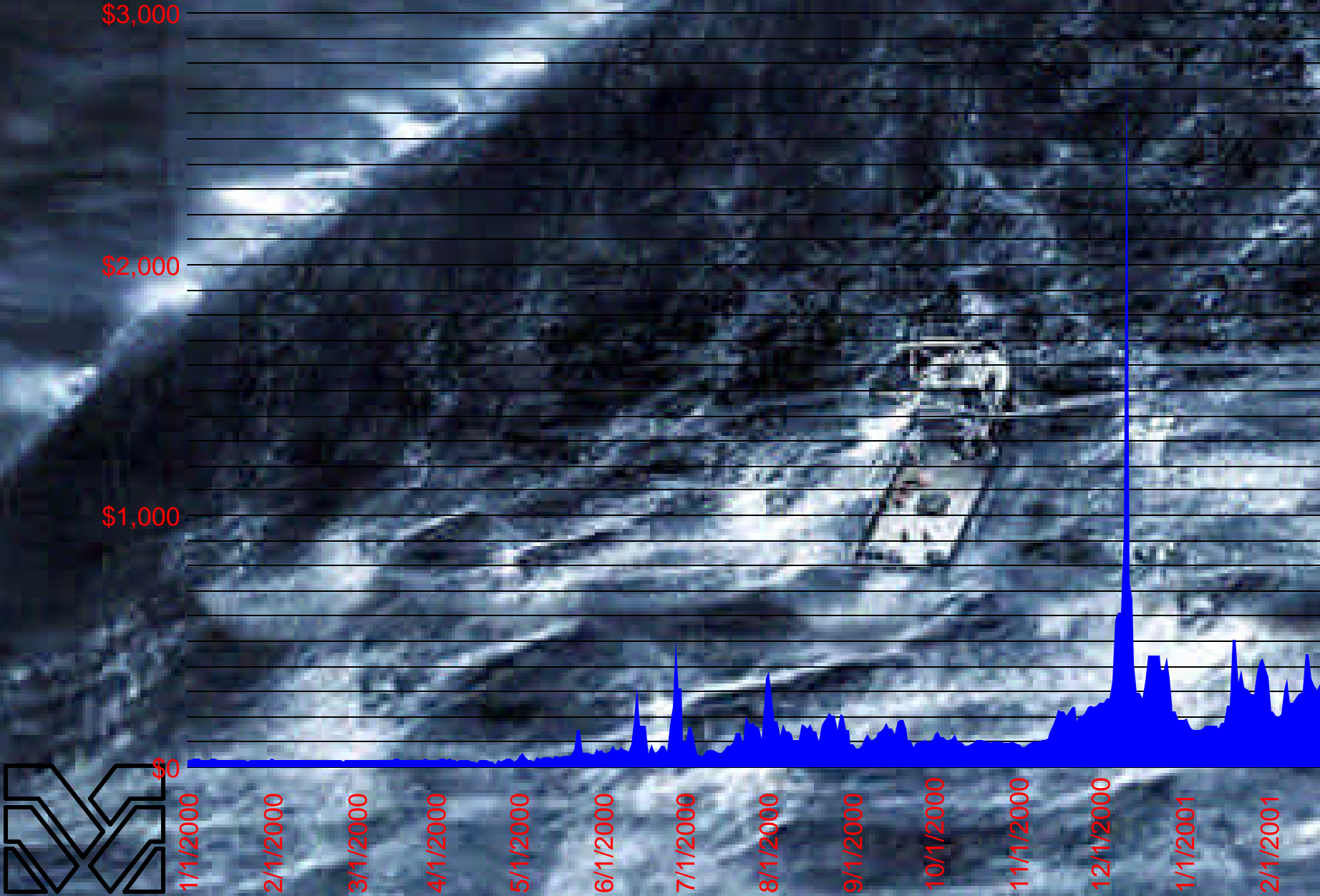


May 22, 2000

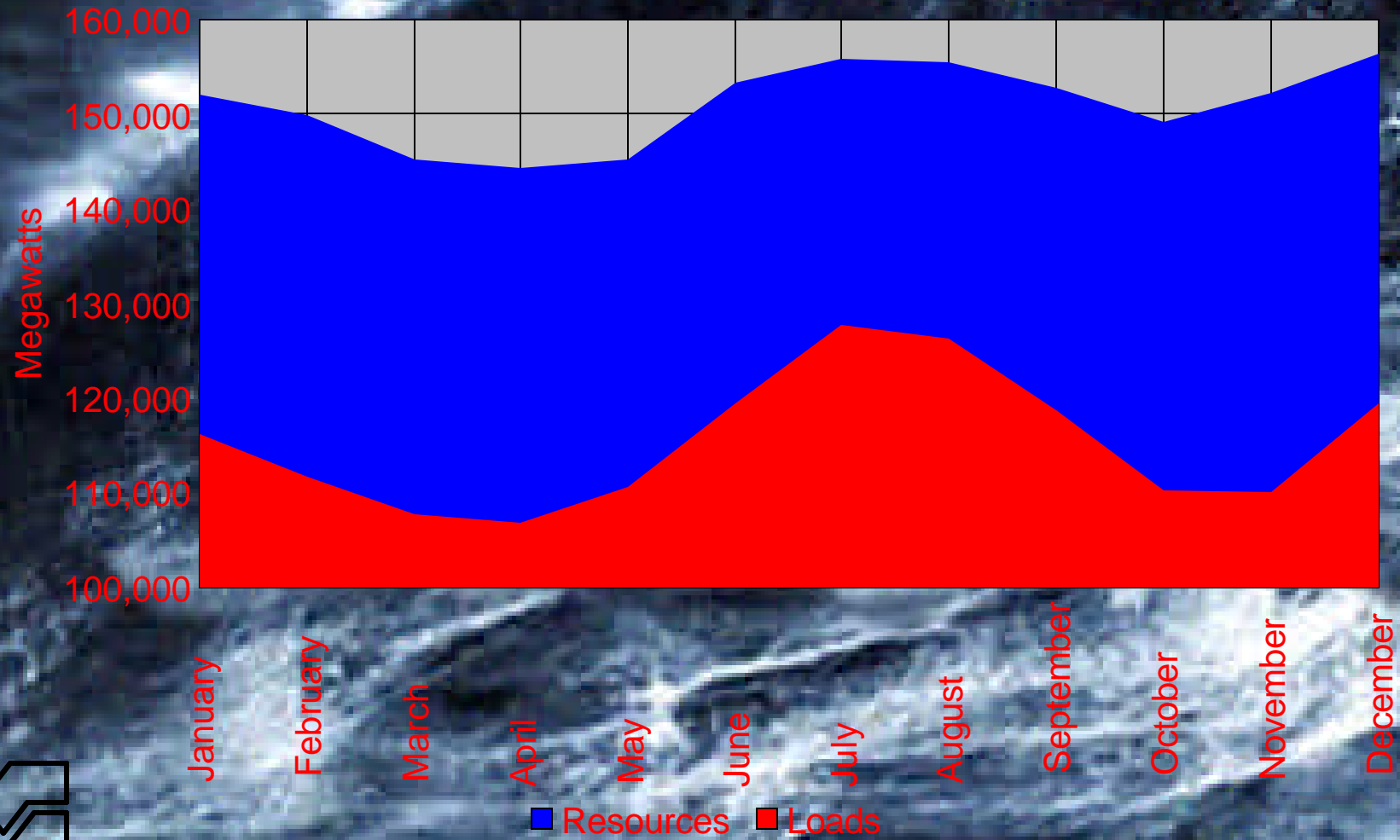
- Pricing changed on May 22nd
- There are almost no explanations for the shift



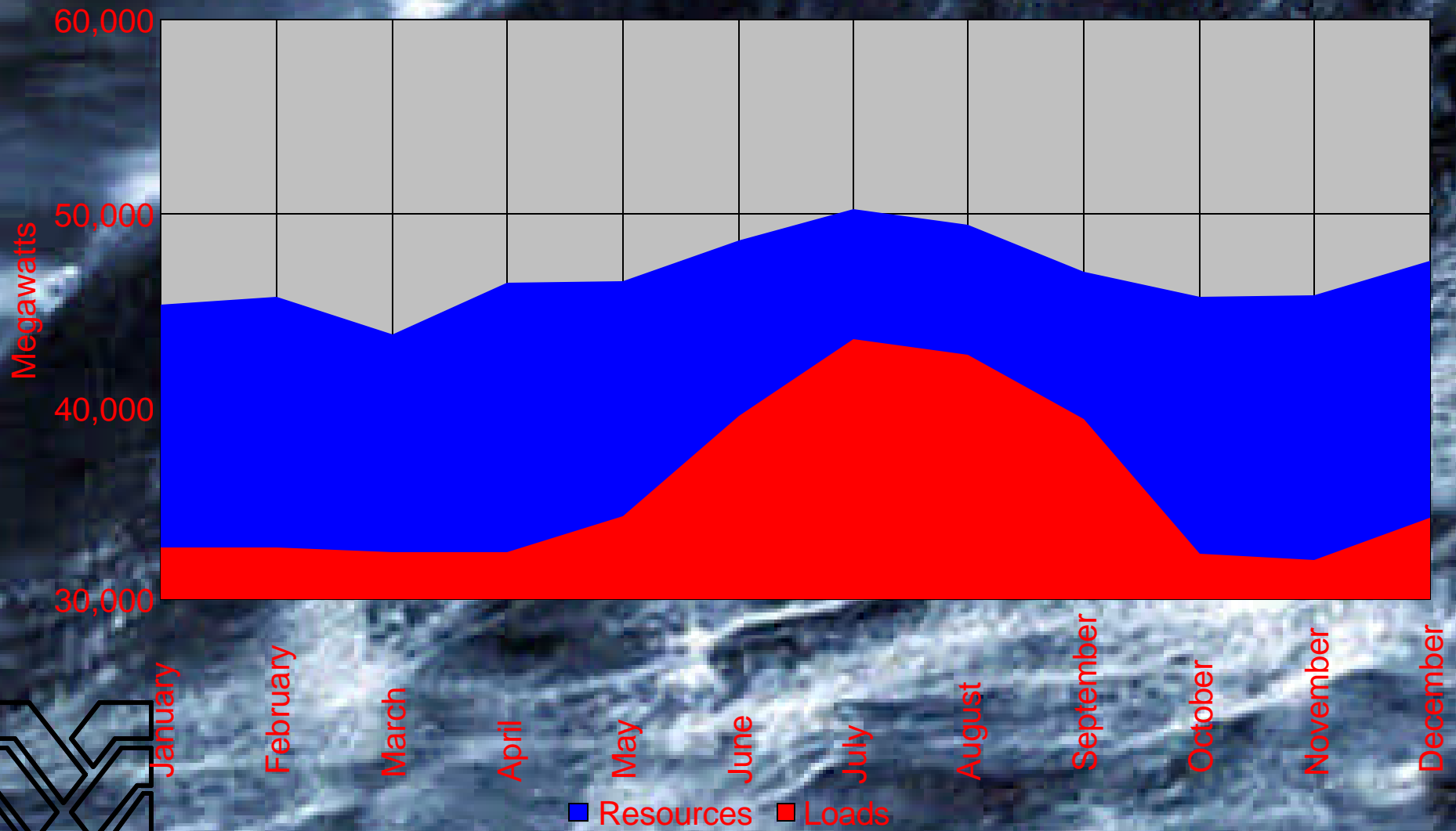
Current Prices



WSCC Capacity Balance



California Capacity Balance



January

February

March

April

May

June

July

August

September

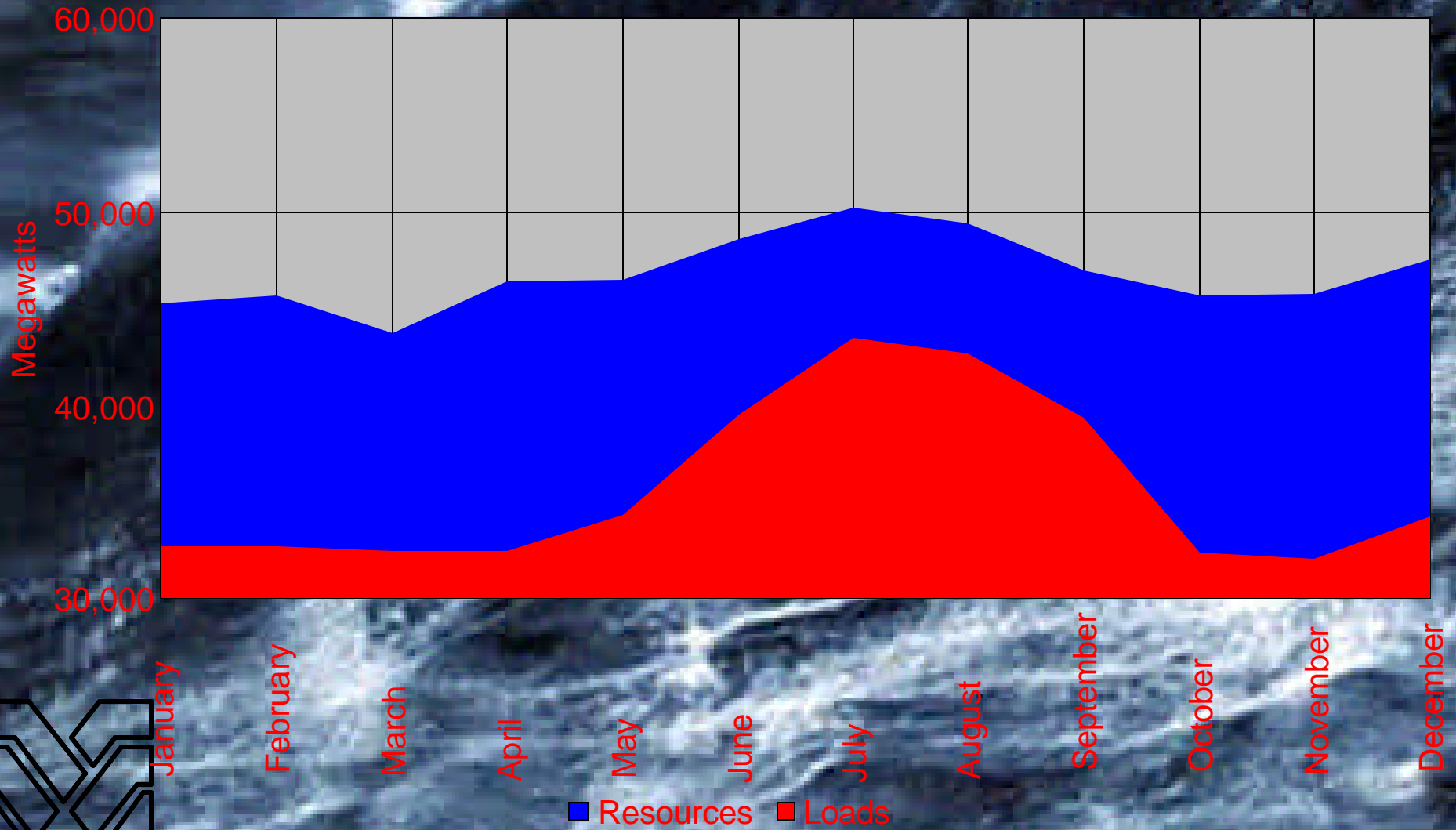
October

November

December

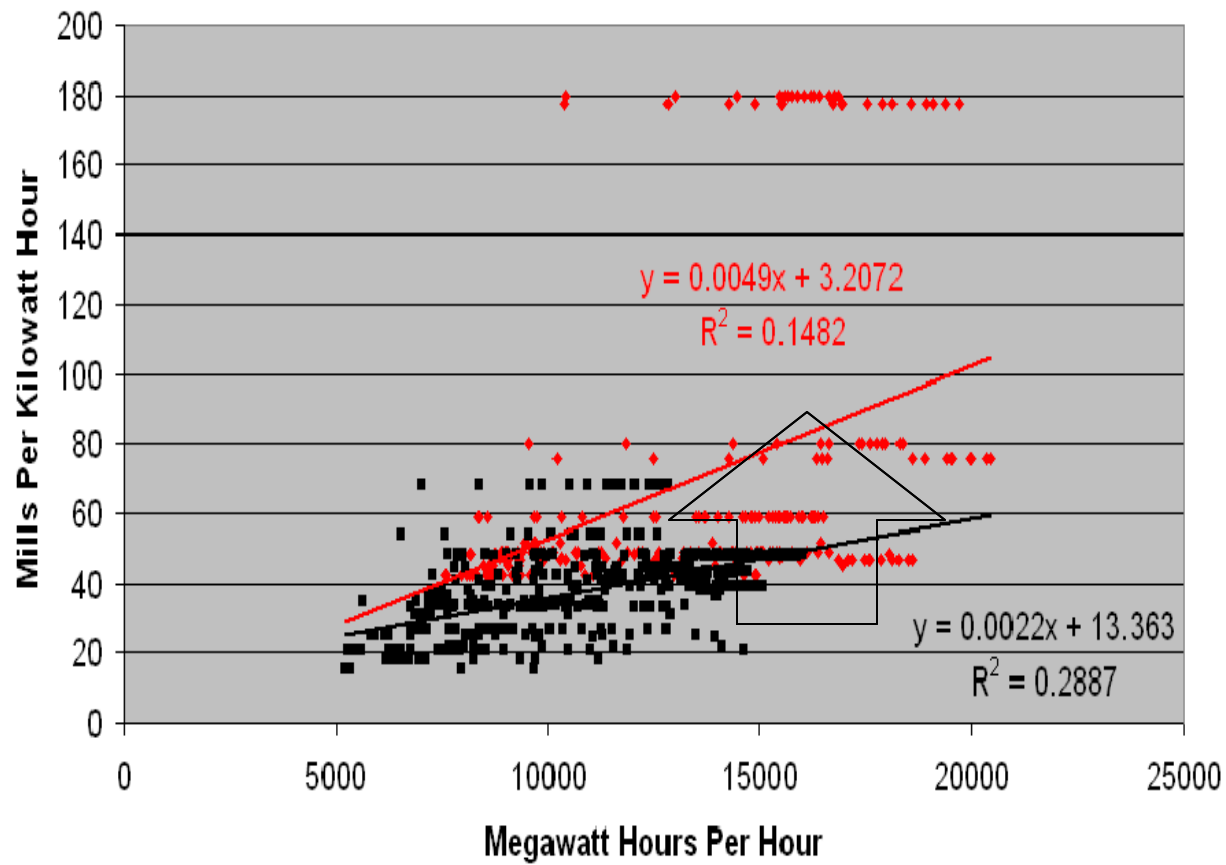
Resources Loads

ISO Capacity Balance



May Shift

COB Prices Versus Cumulative ISO Generation
(From EHV Data Supplied By The California ISO) For May 2000



◆ COB May 22-31 ■ COB May 1-21 — Supply Curve (May 1-21) — Supply Curve (May 22-31)

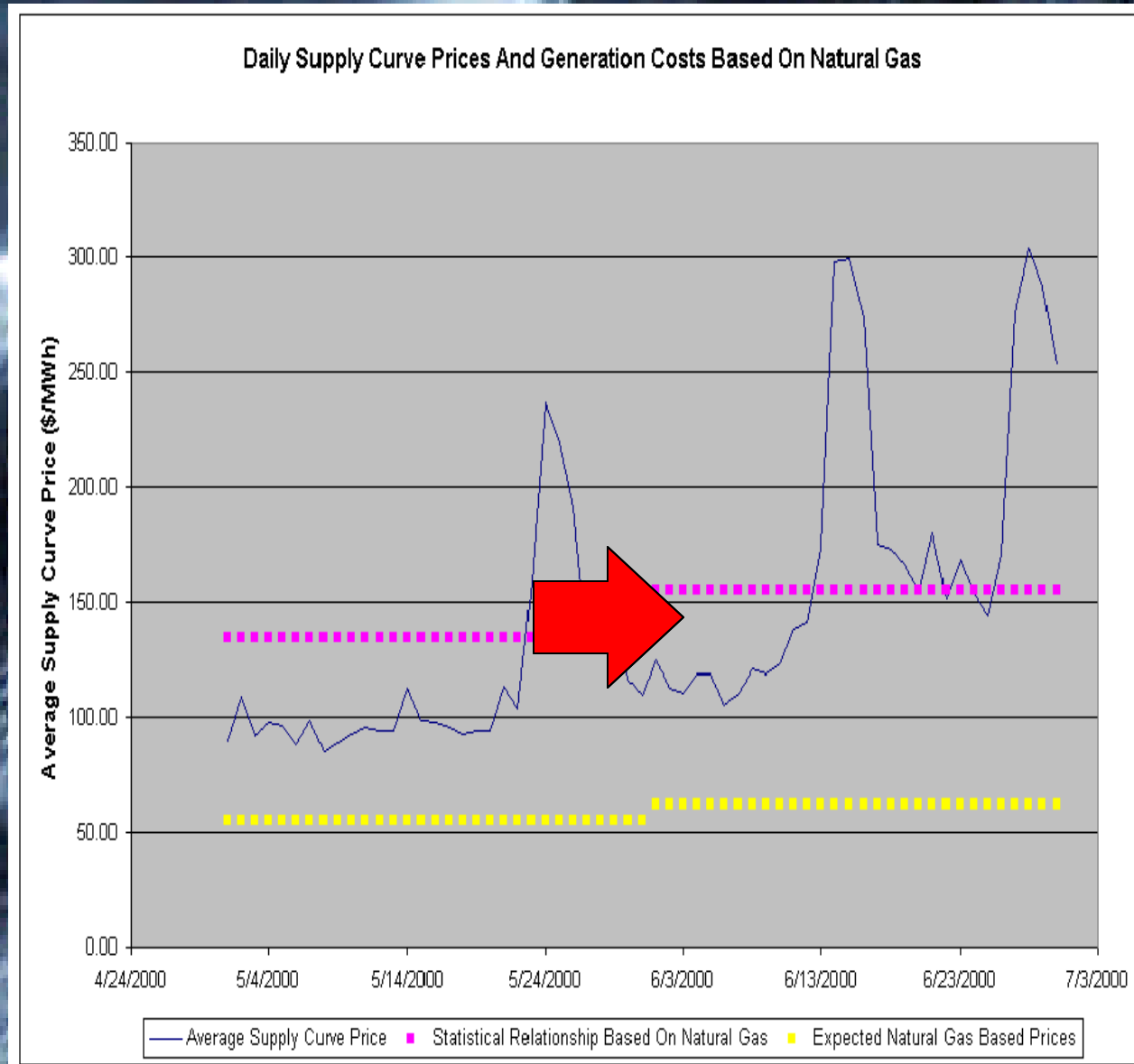


Market Power

- California's forced divestiture brought five outside owners into the center of their administered market
- These owners have very different incentives than vertically integrated utilities or qualifying facilities



PX Supply Curves



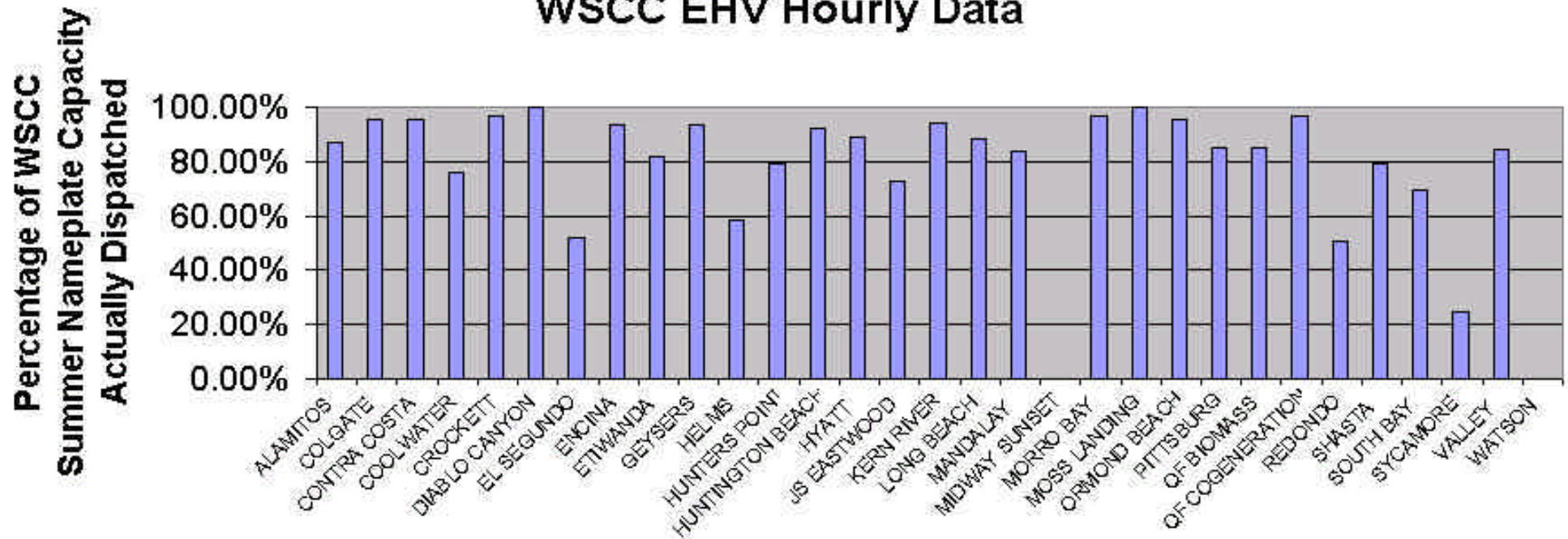
California On-Peak

- ISO perceptions of shortage are proving very subjective
- Inadequate ISO methods are securing scarcity in the midst of abundance
- Overall, in the contest between the ISO and the WSCC, the ISO is failing to prove their case



An ISO Emergency

July 24, 2000 ISO Emergency
WSCC EHV Hourly Data

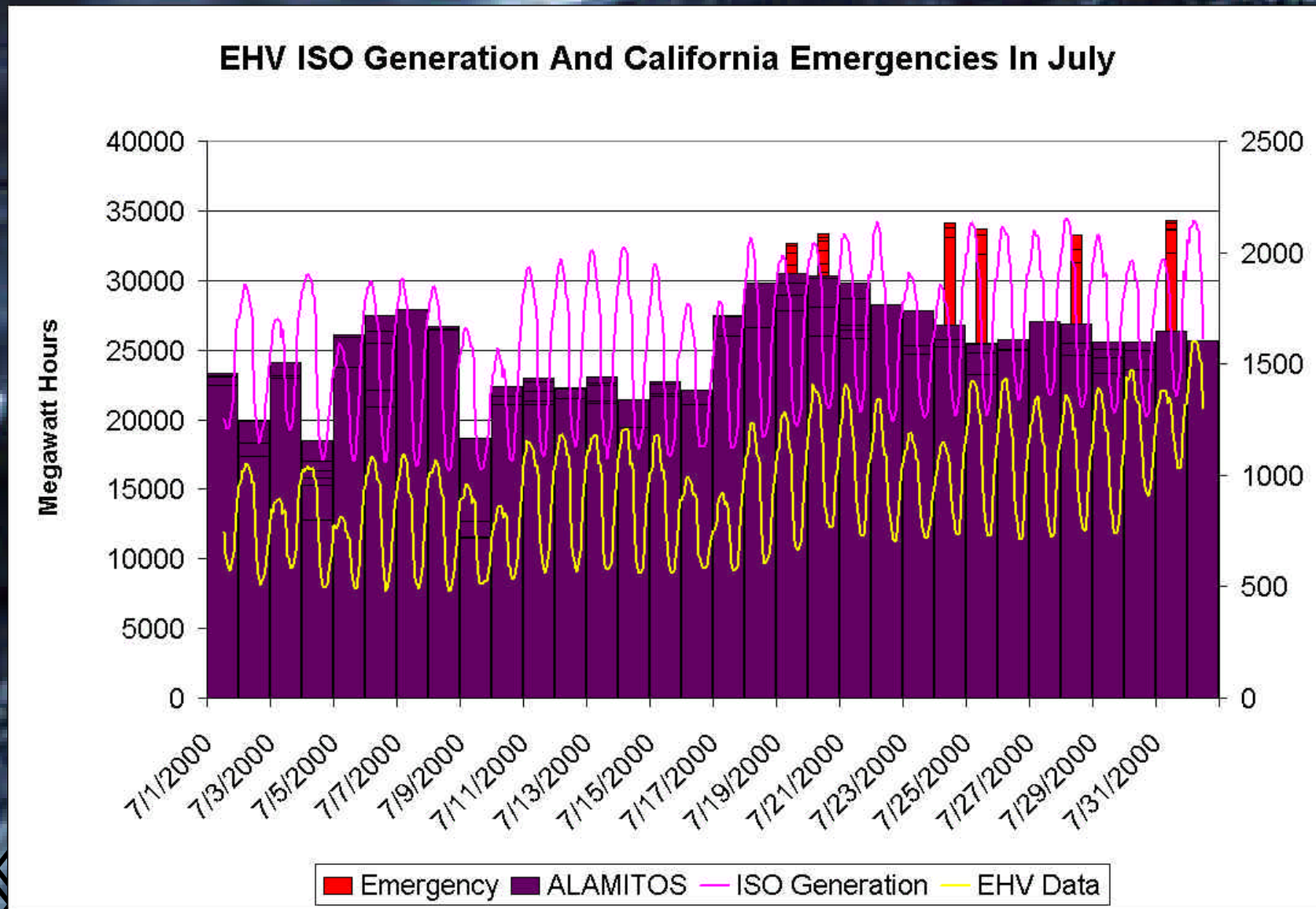


The Missing Peak

- Alamos dispatch isn't close to maximum during system emergencies
- Overall, system dispatch matches emergencies poorly -- raising questions of how seriously the emergencies are taken by generators



The Missing Peak

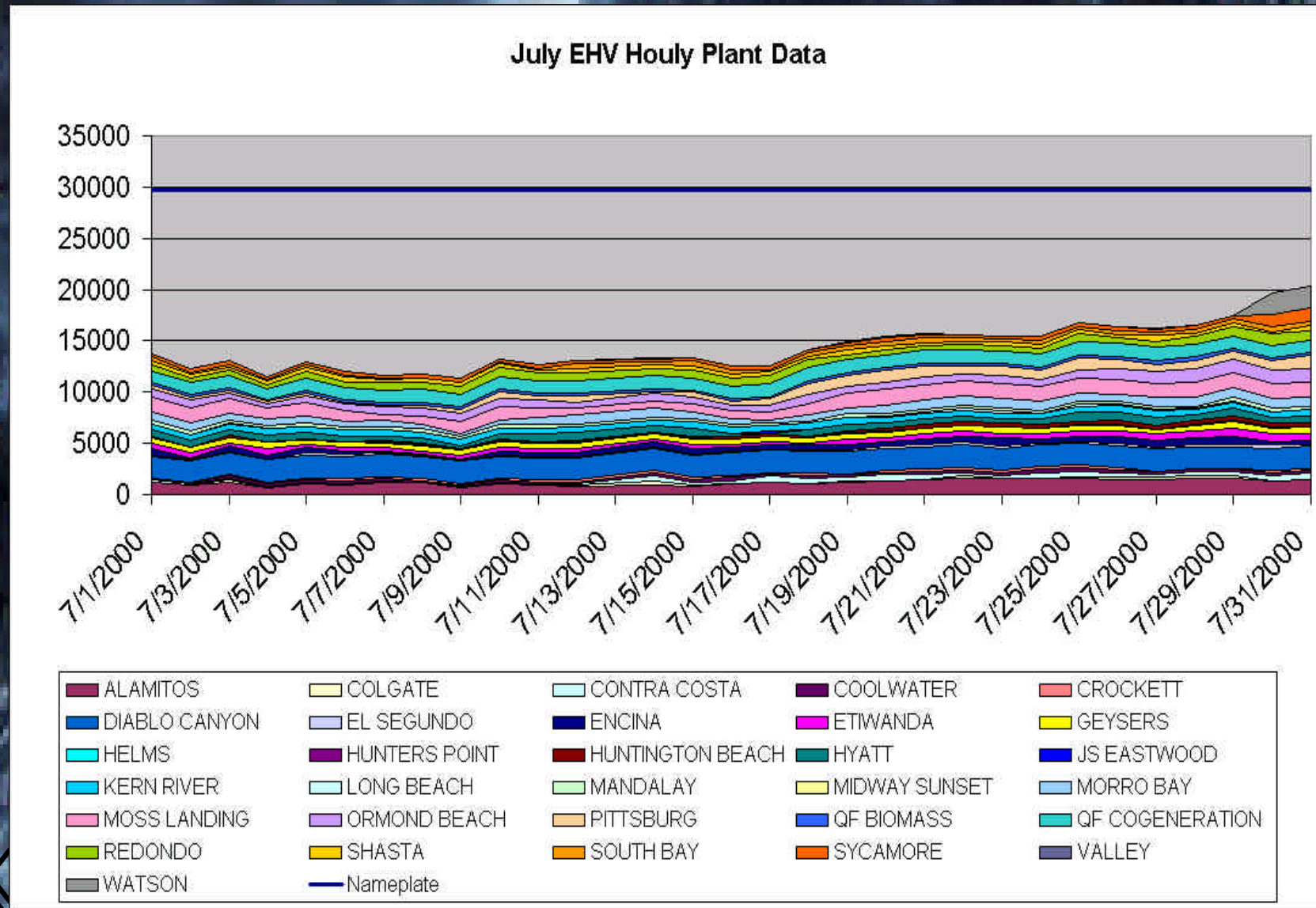


Inefficient Peak Dispatch

- ISO plants dispatch erratically
- Although total capacity equals nameplate, actual dispatch averages only 50% of nameplate
- ISO dispatch doesn't even approach nameplate during system peaks



Inefficient Dispatch

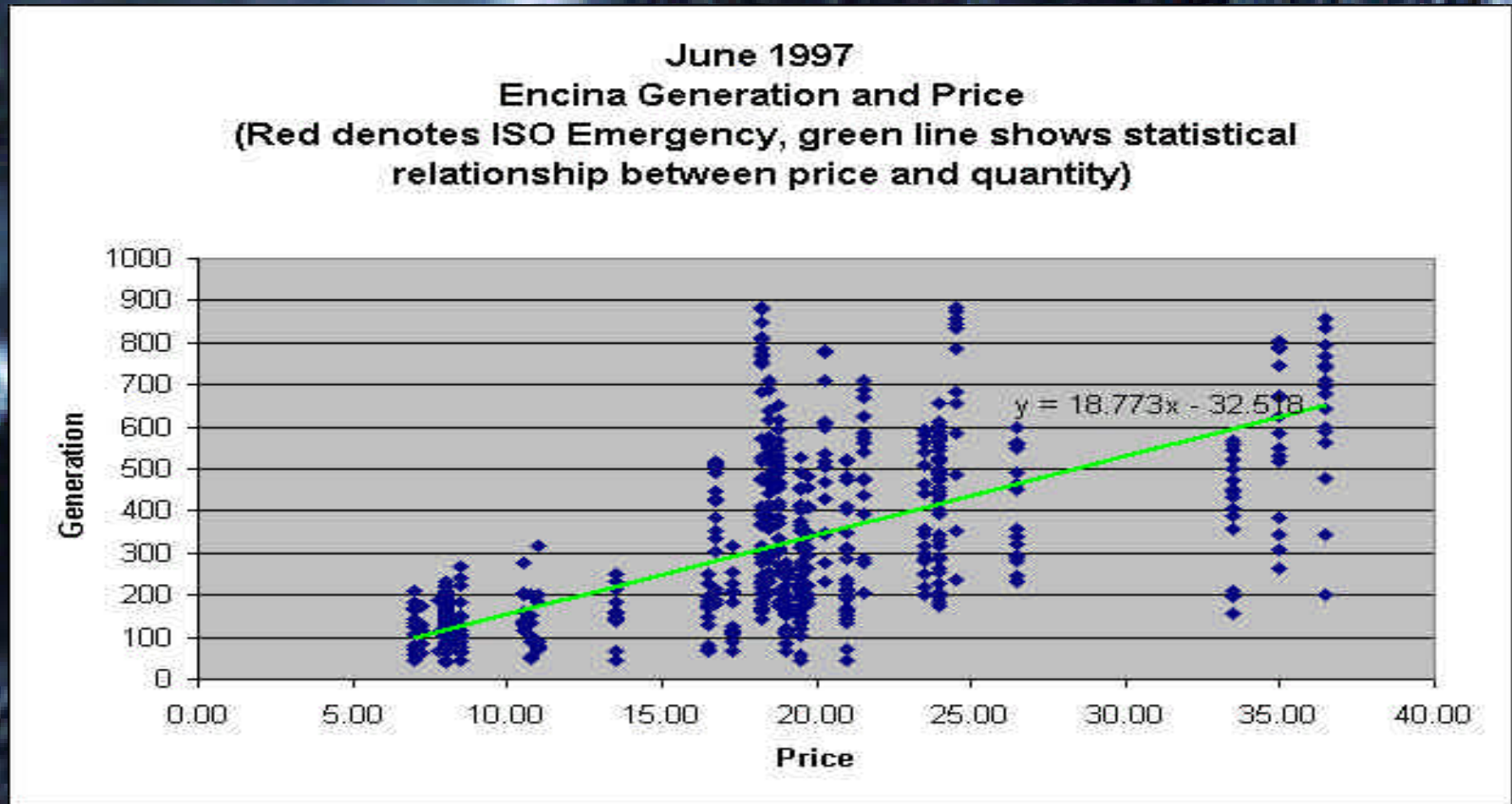


California Off-Peak

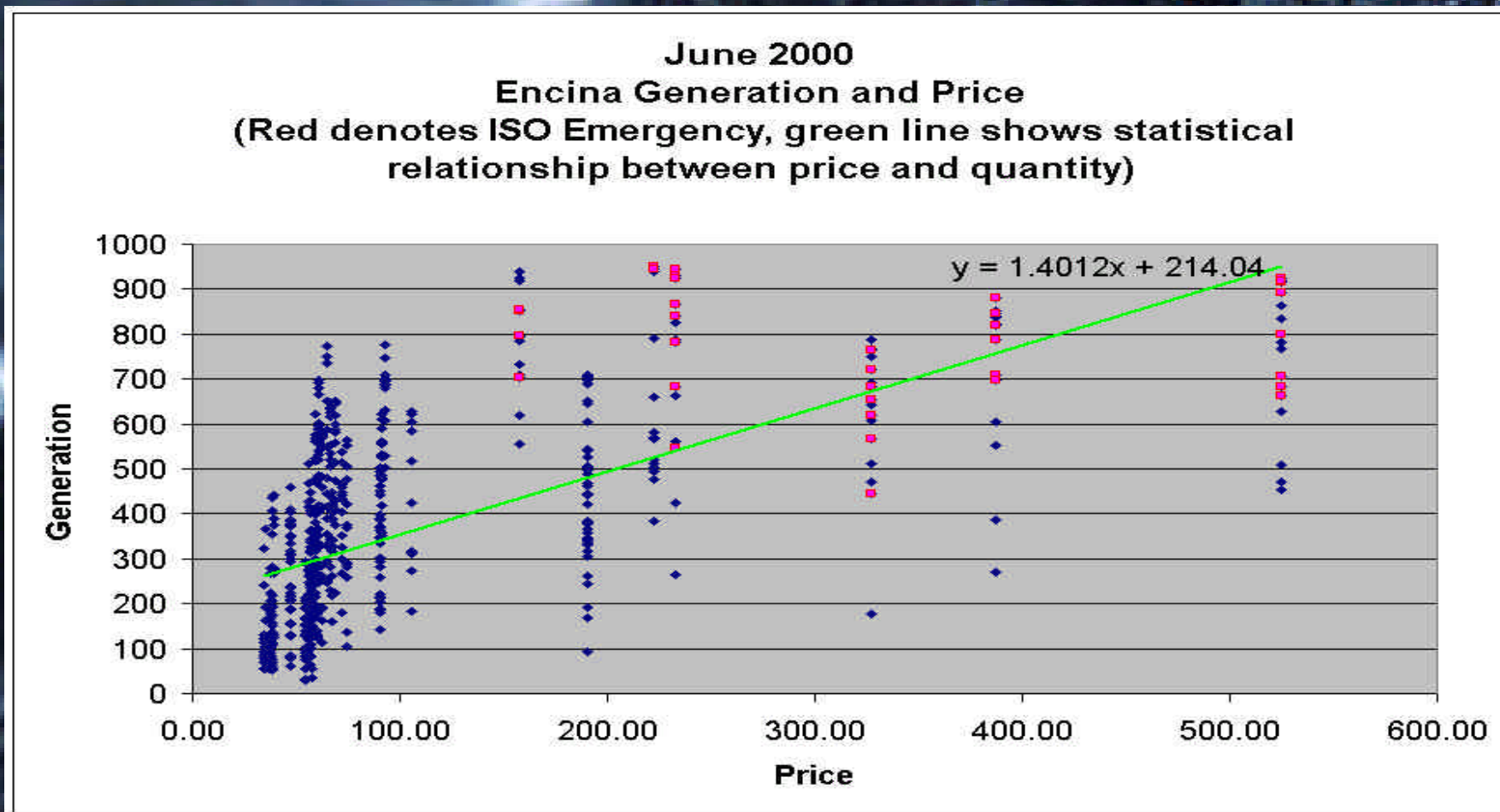
- Hourly investigation of economic dispatch at California "marginal" plants indicate large changes in behavior -- both on-peak and off-peak
- Price responsiveness of dispatch has seemingly diminished dramatically



June 1997: Encina Generation and Price



June 2000: Encina Generation and Price



Off-Peak Conclusions

- It now costs the market 13 times as much to raise generation levels as it did in 1997
- Substantial evidence exists for signaling -- change production levels to check the responses of other generators
- Replacing the internet with major generating units as "tom-toms"



Regional Off-Peak

- Northern off-peak generation appears far more logical
- Marginal generating units in Oregon, and Washington do reflect traditional marginal dispatch rules
- Moving California plants to Oregon would increase generation from 30% to 50%



Optimal Dispatch: June 2000

- Encina 180%
- South Bay 164%
- Hermiston 100%
- Gadsby 120%
- Naughton 101%



Phase 2

- Since November 15th, California generators have changed their behavior from a form of price based market manipulation to physical manipulation
- Plant outages are "secret" but some plants have publicly admitted a three month planned outage cycle



Current EMR Outages

Western Generating Unit Outages

Current	Begins	Ends	Reason
CAISO units/<250/3671 total planned/unplanned*	NA	NA	
Colstrip #2/330/coal	10-Feb-01	?	unplanned*
Contra Costa #6/339/gas	05-Dec-00	?	maintenance
El Segundo #3/342/gas	29-Jan-01	?	maintenance
Escalante/235/coal	11-Feb-01	13-Feb-01	tube leak*
Etiwanda #4/333/gas	28-Jan-01	?	maintenance
Haynes #4/222/gas	05-Nov-00	Feb-01	maintenance
Haynes #5/341/gas	05-Nov-00	Feb-01	maintenance
Haynes #6/341/gas	05-Nov-00	16-Feb-01	maintenance
Hunter #1/440/coal	25-Nov-00	01-Apr-01	maintenance
Moss Landing #6/739/gas	01-Oct-00	?	maintenance
Navajo #1/750/coal	20-Jan-01	18-Feb-01	maintenance
Pittsburg #1-3/489/gas	10-Nov-00	?	maintenance
Redondo Beach #8/495/gas	11-Feb-01	?	unplanned*
San Juan #2/350/coal	10-Feb-01	14-Feb-01	tube leak*
San Onofre #3/1080/nuclear	02-Jan-01	20-Feb-01	unplanned



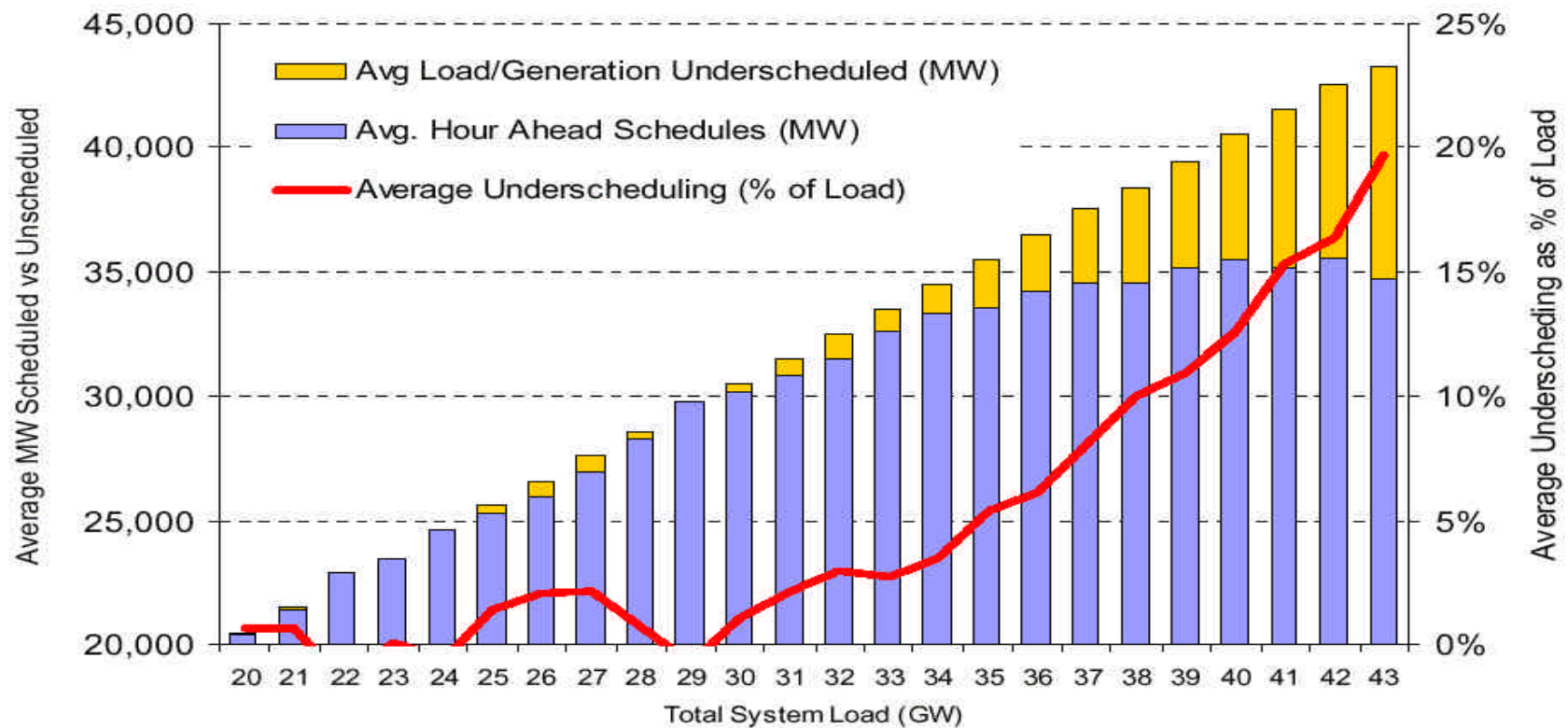
Inefficient Administered Markets

- The ISO is undertrained, undermanned, and inexperienced in its current role
- ISO dispatchers neither understand hydro (25% of the states resources) nor have direct control over dispatch
- The ISO has no control over QF dispatch



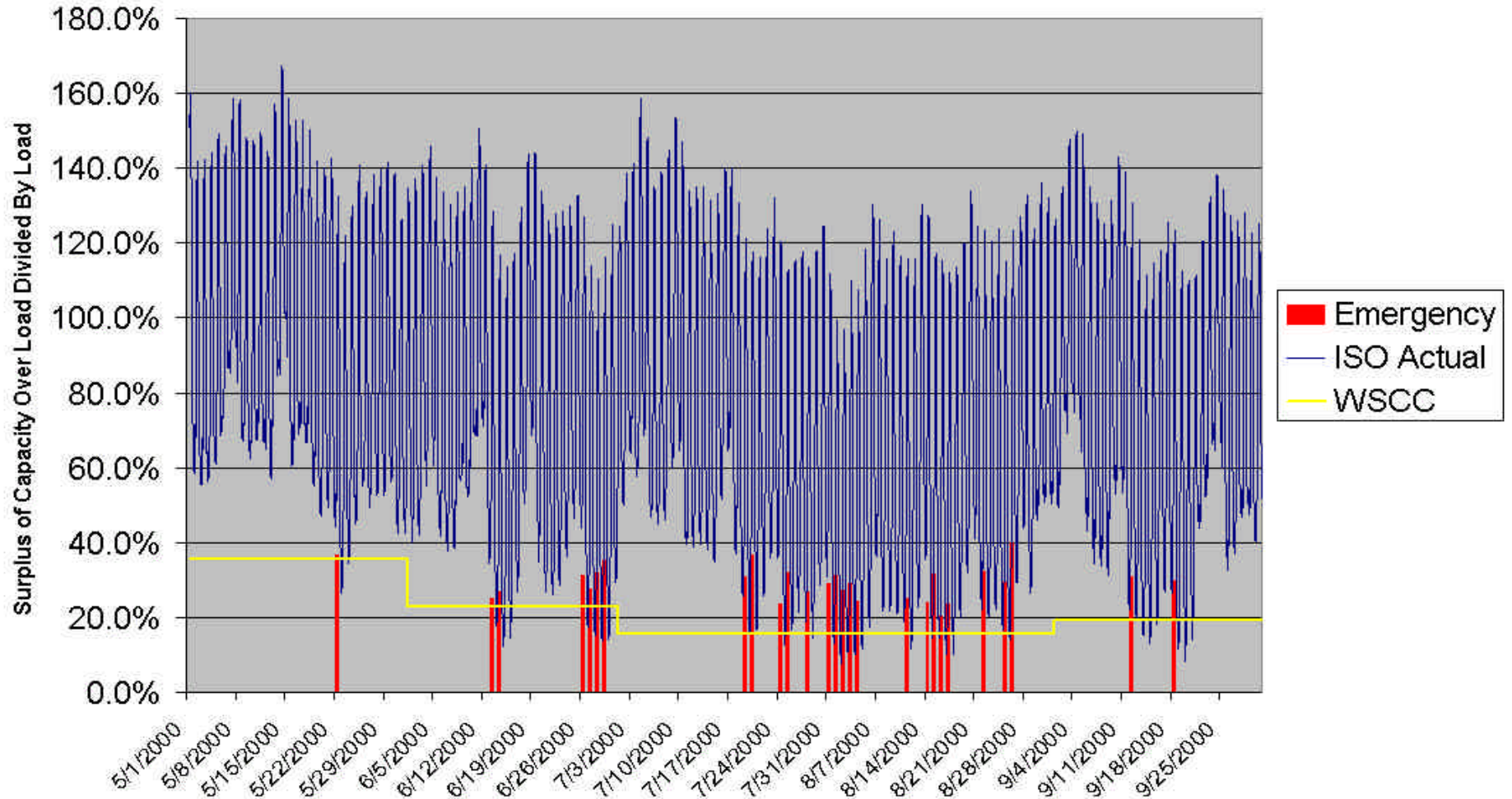
Undergeneration

Figure 13. Average Underscheduling of Loads and Generation by System Load Level (June, 2000)



Actual ISO Capacity Margins

Actual ISO Capacity Reserve Margins Compared To WSCC Summer Adequacy Report Forecasts



Solutions?

- Refunds
 - The ISO DMA has recently asked for \$5.5 billion
- Elimination of the daily capacity auction
- Direct dispatch of hydro and QFs
- Open information

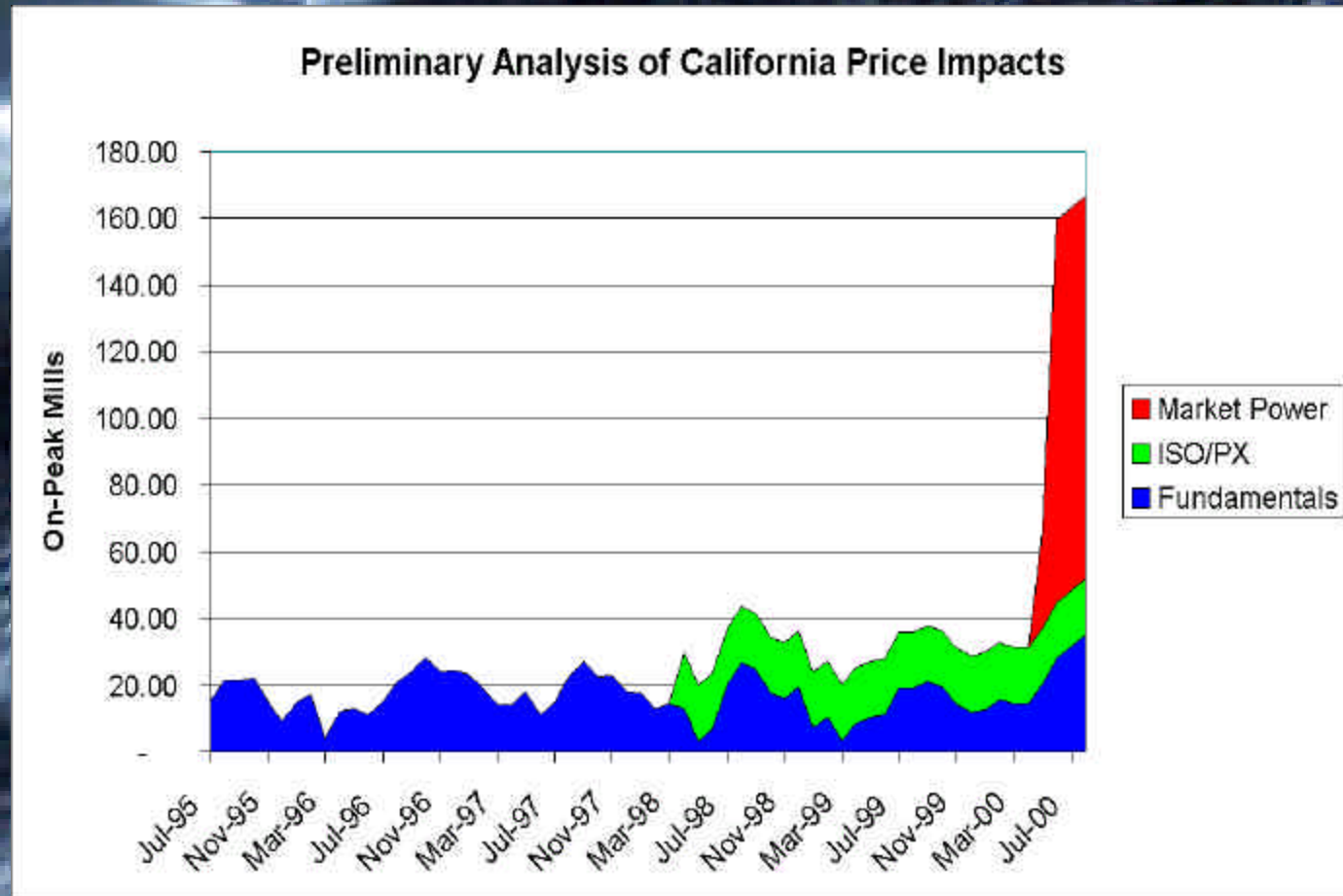


Calculated Refunds

- On-Peak: 99.4 mills +/- 13.4 Mills
- Off-Peak: 32.6 mills +/- 8.4 Mills
- Refunds appropriate from May 22nd through August 31st
- Additional data will continue to refine estimates on a month by month basis



On-Peak Price Impacts



Off-Peak Price Impacts

