



JUDGE ROY BEAM

NEW BAR ROOM

LAW WEST OF THE PECOS





Caveat Emptor Or The Law West of the Pecos

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June 8, 2004

The Law East of the Pecos



State of Energy Markets

January 1, 2002–June 30, 2003:
Staff Report to the Commission



January 22, 2004

Office of Market Oversight and Investigations
Federal Energy Regulatory Commission



Restructuring Today

Friday January 23 2004

FERC resolves 23 West Coast market gaming charges

Enron lost its market-pricing privilege.

Commissioner Joseph Kelliher agreed and reminded marketers that market-based rates are not a right but a privilege.

Charges were dropped against most but two were denied motions to dismiss the charges — Sempra Energy Trading because a settlement is pending and the Colorado River Commission of Nevada.

The latter body had told FERC it had no paper showing a partnership that was mentioned in the initial show-cause order.

The agency brushed that viewpoint aside.

Some litigants settled and FERC OK'd those agreements yesterday — American Electric Power (\$45,240), the City of Redding (\$6,300), Puget Sound Energy

(\$17,092), San Diego Gas & Electric (\$27,972) and Williams (\$45,230).

The agency's authority does not include penalty authority but it has the right to order the return of excess profits whatever that may be.

The commission's staff urged dismissal of show-cause orders on the grounds that it could not find enough evidence to show the 23 had gamed the market in 2000-2001, the California crisis period.

Charges were dropped against Constellation Power Source, El Paso Merchant Energy, Eugene Water & Electric Board, Idaho Power, Koch Energy Trading, MIECO and PPM Energy.

Another group included Arizona Public Service, Automated Power Exchange, BPA,

LADWP, the Power Exchange, Cargill-Alliant, municipal power firms of Anaheim, Azusa, (not Cucamonga), Pasadena and Riverside, EPL Energy, the Northern California Power Agency, Pacific Gas & Electric and its marketing affiliate PGE Energy Services, Public Service of Colorado, Public Service of New Mexico, Salt River Project, Sierra Pacific Power, Southern California Edison, TransAlta Energy Marketing, Tucson Electric Power and WAPA itself.

Chairman Wood was asked what he would say if California critics say the settlement is not enough considering the state's injury.

FERC's message, Wood replied, is that "we're doing the maximum we can do."



Caveat Emptor Or The Law West of the Pecos

- Who is the "Law West of the Pecos?"
- Displacing performance based operations
- The Elusive Goal of Transparency
- ERCOT's power crisis of February and March 2003
- How efficient are ISO markets?
- Lessons For the Future



Where are the Pecos?



Who Is The Law West of The Pecos?

- FERC is very busy
- The California ISO has caught exactly zero offenders over the past six years
- The California PUC has no jurisdiction
- The courts have deferred to FERC
- The U.S. Department of Justice has two guilty pleas and several outstanding prosecutions
 - Only Reliant is facing criminal prosecution
- Market surveillance has devolved to the local "posse", Pacific Northwest market participants and the California AG



Death Star At 8/1/2000 4:00:00 PM To 8/1/2000 6:00:00 PM

In A Death Star imaginary power was wheeled across the West Coast in order to fool the California ISO into making payments to Enron.

Profit is \$31,054.17

Holden Salisbury (Enron)
offers \$5.00/MWh to
PacifiCorp to disguise the
origin of the schedule from
the California ISO.

Malin, Oregon
PacifiCorp
"launders"
transaction at
COB
Deal #384649

California
Oregon Intertie
LADWP carries
schedule to
Mead
Deal 292672

Matt Motley (Enron) calls
Suegen Mao (LADWP)

See Kim Durham or Val
Sabo with questions. Val
Sabo (Enron) later worked
for PacifiCorp

Holden Salisbury (Enron)
offers "congestion relief" to
the ISO charging them
\$13,965 at 4:00 P.M. and
\$15,995 at 5:00 P.M.

Transmission schedule:
EPMI_CISO_GOLDEN

Mead, Nevada
Enron
California Pool
sells to Enron
Real Time
Desk



Start of the California Crisis

Ricochet at 5/22/2000 4:00:00 PM To 5/22/2000 7:00:00 PM

In this Ricochet, Enron purchased undervalued real time energy from the ISO and then sold it back to them for \$750/MWh

Profit is \$222,678.00

Michael Driscoll (Enron) offers \$5.00/MWh to PacifiCorp to disguise the origin of the schedule from the California ISO.

Malin, Oregon
PacifiCorp
"launders"
transaction at
COB
Deal #343540

Michael Driscoll (Enron) sells the energy back to the ISO on an emergency "Out of Market" basis

California ISO
buys the power
from Enron
Deal #348539

Michael Driscoll (Enron) purchases 300 MWh from the California ISO for \$0/MWh

He transports the power from Southern California to Malin, Oregon

Schedule named:
CISO_EPML_5050

California ISO
sells the power
to Enron
Deal #348538



Lavorato Call To Belden

August 8, 2000

Ex. SNO-222
Page 3 of 5

1 shows up on any curve shift, where he just buys it from the day-ahead. He just fucks
2 California. Then, another –
3 PERSON 2: Wait a minute. OK.
4 TIM: He steals money from California to the tune of about a million –
5 PERSON 2: Will you re-phrase that?
6 TIM: OK, he, um – he arbitrages the California market to the tune of a million bucks or
7 two a day.
8 PERSON 2: Will that ever stop?
9 TIM: Yeah.
10 PERSON 2: OK. [chuckling] Maybe we can put him into an – a special purpose vehicle, or
11 [inaudible]
12 TIM: Right.
13 [laughter]
14 TIM: Um, then, ah, what else did we have yesterday? We typically get about 2 million bucks
15 a day in FTR revenue.
16 PERSON 2: OK [chuckling] Is that going to go on forever?
17 TIM: No, that's going to stop as well.



Replacing Performance Based Operation With Rule Based Operations

- FERC's initiatives to replace open markets with centralized bureaucracies is shifting operations from performance based operation to rule based operation
- The lesson of the August blackout is that rules are a relatively poor approach to resource sufficiency and reliability planning
- Nine months later, the major questions -- why the blackout was cascaded across four RTOs even though transmission links were a very minor part of the resource portfolio
- Rapidly changing rules, high levels of secrecy, and lack of transparency are the major problems
- Vulnerability is provocative
- Complexity is an opportunity



Belden's Approach To ISO Rules

From: Tim Belden/HOU/ECT
Sent: Monday, July 10, 2000 10:19 AM
To: Chris H Foster/HOU/ECT; Greg Wolfe/HOU/ECT; Stewart Rosman/HOU/ECT; John M Forney/HOU/ECT
Subject: Get Shorty

First, congratulations on earning so much money on shorting ancillary services last month. It is a beautiful thing. That is textbook Enron. Find a wierd part of the market, try a few things, a bag of money drops out. It is truly impressive.

Second, we need to ensure that proper controls are in place. It has come to my attention that we had some performance issues last week in terms of zeroing out the schedules. We have to get a handle on this. By the end of the week I would like a written procedure outlining a failproof procedure. As part of this procedure, I would like to see a daily log that illustrates what schedules we have in, who put them in, and who is accountable for zeroing them out.

Once again, amazing job on the A/S plays over the last few weeks. I don't mean to rain on your parade or place blame for past mistakes. But I am serious about getting this procedure ironed out and air tight. Once the procedure is ready let's have a meeting to discuss.



Tim's Later Conclusion

From: Tim Belden/HOU/ECT
Sent: Monday, August 28, 2000 12:36 PM
To: Greg Wolfe/HOU/ECT; Chris H Foster/HOU/ECT
Cc: John M Forney/HOU/ECT; Jeff Richter/HOU/ECT
Subject: Get Shorty Suspended

It has come to my attention that we failed to zero out a "Get Shorty" schedule on Friday. Fortunately, the real time desk was able to fill it. Kim Ward tried to zero it out and put in blanks rather than zeros which doesn't work. This highlights the need to clearly document exactly what is supposed to be done to implement these schedules. For several months I have asked for a written procedure on ancillary service schedules. Nobody has listened to me and mistakes keep happening. Such a mistake occurred in June and is now requiring a \$900k prior month adjustment. On top of that, the California Attorney General is in search of a smoking gun and is looking to find someone who is "gaming" the market. I don't want to provide them with any fuel for their fire.

I AM TEMPORARILY SUSPENDING ALL GET SHORTY ANCILLARY SERVICE ACTIVITY. When I see a written procedure that will be fail proof, and an airtight log that assigns accountability I will be happy to reinstate. The procedure needs to be thorough and thoughtful. The test will be whether someone who knows almost nothing about ISO scheduling can implement the procedure. This is long overdue. Chris or Greg, please let me know how you plan to proceed.

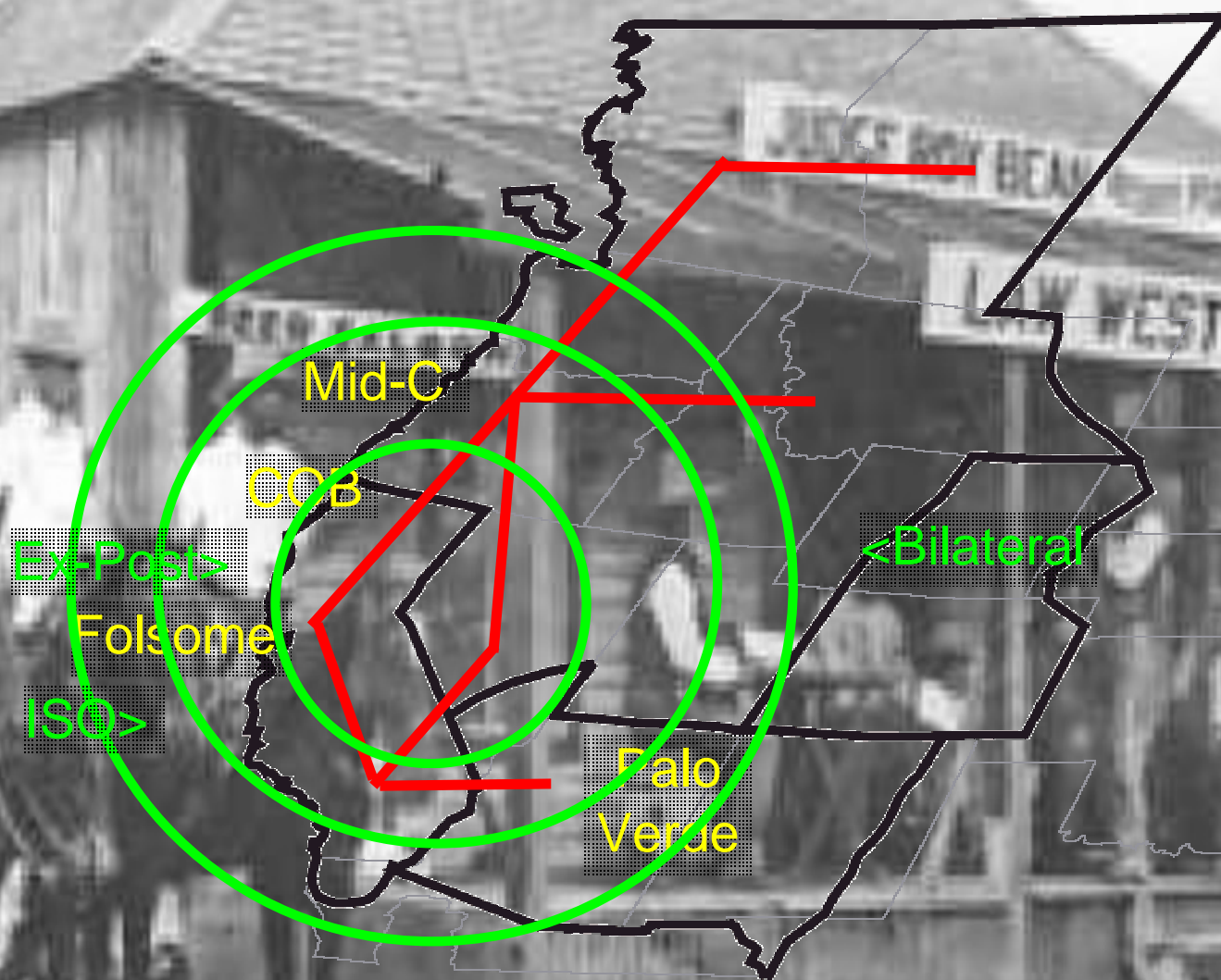


Central Structural Features of the Bureaucratic Authorities Are Protected By Layers of Obscurity

- Has anyone in this room seen the rules for the California ISO's Ex-Post market?
- Does anyone in this room know anyone who has seen these rules?
- Does anyone in this room know how to go about finding these out?



WECC Markets



Peeling the Artichoke

- 75% of the electricity in the WECC is self-generated or transacted on a bilateral basis
- 25% of the electricity is transacted or generated subject to California ISO rules and direction
- 3% of total electricity (estimated, of course, since this is an ISO secret) is transacted in real time on the Ex-Post market
- To quote one trader during the March 2003 ERCOT market manipulations, "why would I answer the phone when I can sell it to real time?"
- Bottom line, lack of oversight and transparency make high value in administered markets a common event.



Traditional load/resource balance

State of the WECC Interconnected Bulk Power System Through 2012

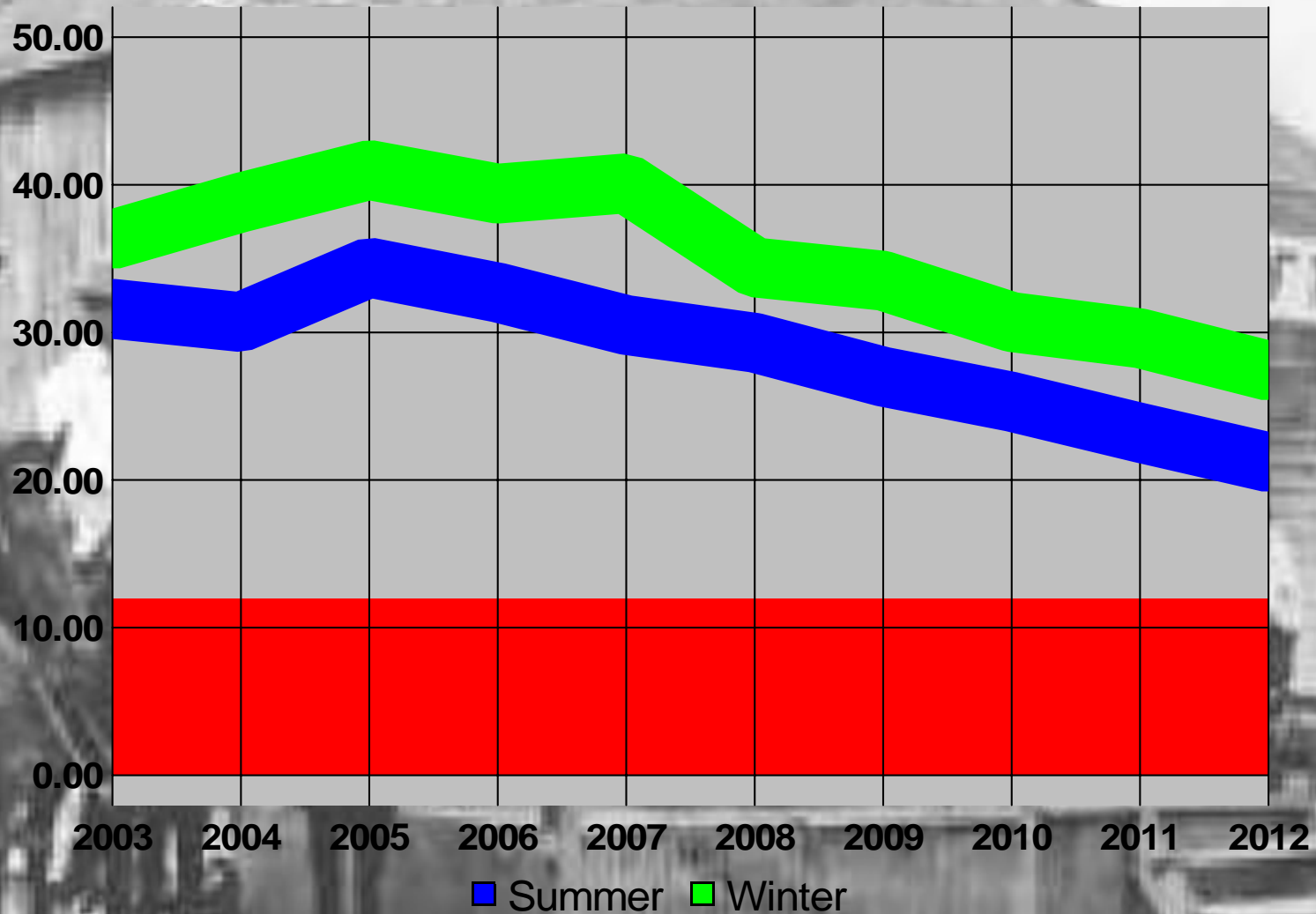
Despite a dramatic decrease in proposed new generation during the past year, generating capacity in the region is expected to be adequate to reliably supply the forecast firm peak demand and energy requirements throughout the assessment period. Transmission capacity is expected to be adequate to supply firm customer demand and firm transmission transactions. Plans have been announced for the construction of 4,319 miles of 230 kV, 345 kV and 500 kV transmission during the 2003-2012 period.



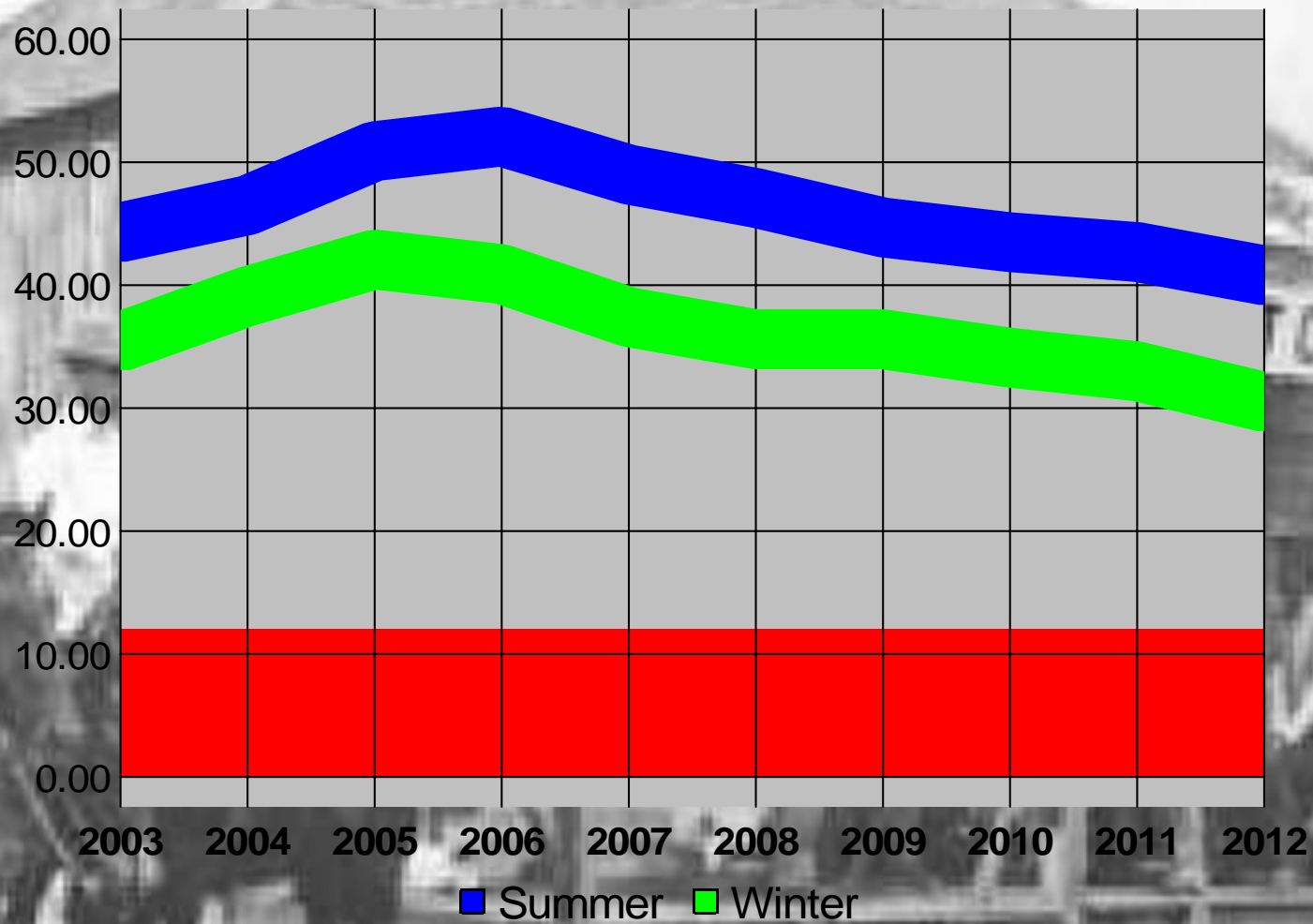
**Western Electricity Coordinating Council
10-Year Coordinated Plan Summary
December 2003**



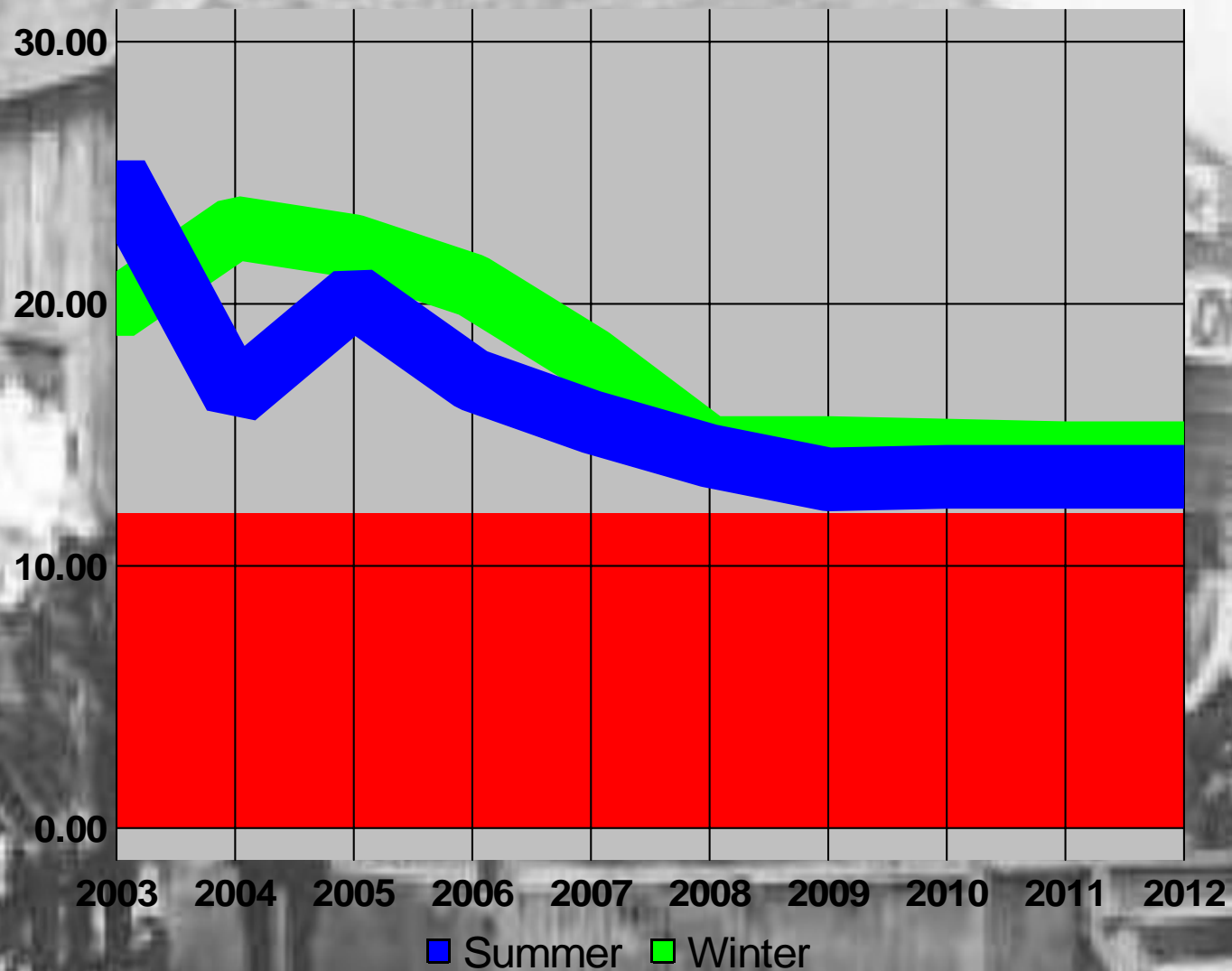
WECC Reserve Margins



Pacific Northwest Reserve Margin



California Reserve Margins



So What Happened On March 29, 2004?



WECC Daily Report

Other Comments: None

Yesterday/Weekend/Holiday Notable Events: At 1124 PST on Monday March 29, 2004 the CAISO declared a Restricted Maintenance Operation due to higher than anticipated temperatures and load. At 1224 the CAISO issued a System Warning due to the high temperatures and load and a loss of resources south of Path 15. At 1350 the CAISO declared a Stage 1 emergency due to an imminent deficiency in Operating Reserves. At 2000 the CAISO terminated the Stage 1 emergency, System Warning and Restricted Maintenance Operation. Stage 2 emergency was not reached and no load was interrupted.

Yesterday's Non-simultaneous Peaks, Reserves, and Generation Limitations at time of Peak					
Area	Peak Demand	Actual Reserves		Req. Reserves	Gen. Outages/Limitations
Northwest SC	42,375	20.5%	8,684	2,966	5,948
RM/DSW RC	21,922	19.4%	4,245	1,481	2,743
Calif/MX RC	40,314	9.1%	3,685	2,754	13,748

¹ Required reserves calculated to be 7% of peak demand.



December 2003 WECC Ten Year Report

	WINTER PEAK							Adverse Hydro Conditions		
	<u>03-04</u>	<u>04-05</u>	<u>05-06</u>	<u>06-07</u>	<u>07-08</u>	<u>08-09</u>	<u>09-10</u>	<u>10-11</u>	<u>11-12</u>	<u>12-13</u>
Month	JAN	JAN	JAN	JAN	JAN	JAN	JAN	JAN	JAN	JAN
Loads - Firm	42017	42940	43881	44843	45828	46818	47817	48826	49856	50921
Int. & Load Mgt	0	0	0	0	0	0	0	0	0	0
Total - MW	42017	42940	43881	44843	45828	46818	47817	48826	49856	50921
Growth from Previous Yr. - %	6.5	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
Generation ± Transfers - MW	60787	61941	62954	63475	63526	64302	64170	66571	66503	67820
Maint./Inoperable Cap. - MW	10446	9178	9314	9342	9516	10688	9437	10720	9493	9613
Reserve Capability										
MW	8324	9823	9759	9290	8182	6796	6916	7025	7154	7286
Percent of Firm Peak Demand	19.8	22.9	22.2	20.7	17.9	14.5	14.5	14.4	14.3	14.3



So What Really Happened?

- The ISO did not receive sufficient bids for reserves
- ISO rules required them to "invent" an emergency to go outside of their market
- Savvy market participants received a small windfall
- The extent of the windfall is (of course) secret



Vanishing Transparency

- On an annual basis, each of NERC's reliability councils publishes a ten year appreciation
- Spokesmen for market manipulators often disparage these reports. Bill Hogan, for example, simply ignores these reports in his frequent efforts to convince policy makers that the WECC was short on resources in 2000 and 2001
- Simultaneously, a massive lobbying effort is underway to remove these reports from the public and restrict them to market participants -- in ERCOT these are no longer available to the public
- There is a certain irony in the argument that reporting on resource adequacy is of so little importance that it should be discontinued and so important that it should be made confidential
- The central theme is to remove critical market data from the public view



ERCOT's 2003 Reliability Crisis

- In February and March last year, ERCOT (spelled Texas by lay folk) experienced a shortage of real time energy
- We now know that the crisis reflected a change in the rules called "relaxed balancing" that allowed major players in the Texas market to manipulate ERCOT's real time market
- The rules were changed almost immediately after the price soared from \$30/MWh to \$990.01/MWh during an off-peak month
- Texas rules are kinder and gentler than California's -- secrecy is less pervasive



Saturday Night's Price Excursion In Texas

BALANCING SERVICES MCP

Market Date: 05-JUN-2004

Interval Ending	Zone HOUSTON2004	Zone NORTH2004	Zone NORTHEAST2004	Zone SOUTH2004	Zone WEST2004
2015	\$44.89	\$41.47	\$41.45	\$37.50	\$41.08
2030	\$39.88	\$39.88	\$39.88	\$39.88	\$39.88
2045	\$40.88	\$40.88	\$40.88	\$40.88	\$40.88
2100	\$42.34	\$42.34	\$42.34	\$42.34	\$42.34
2115	\$45.00	\$45.00	\$45.00	\$45.00	\$45.00
2130	\$45.87	\$45.87	\$45.87	\$45.87	\$45.87
2145	\$47.73	\$44.99	\$44.97	\$41.81	\$44.67
2200	\$44.99	\$44.99	\$44.99	\$44.99	\$44.99
2215	\$50.37	\$50.37	\$50.37	\$50.37	\$50.37
2230	\$46.55	\$46.55	\$46.55	\$46.55	\$46.55
2245	\$49.44	\$44.01	\$43.96	\$37.70	\$43.38
2300	\$47.19	\$42.71	\$42.67	\$37.50	\$42.19
2315	\$75036.50	\$40348.86	\$40060.65	\$41.20	\$36355.15
2330	\$73.26	\$58.43	\$58.31	\$41.20	\$56.72
2345	\$41.20	\$41.20	\$41.20	\$41.20	\$41.20
2400	\$38.90	\$38.90	\$38.90	\$38.90	\$38.90



Commercially Significant Constraints

COMMERCIALY SIGNIFICANT CONSTRAINTS

Market Date: 05-JUN-2004

Hour: 2400

Interval: 2315

Capability	EN	NH	SH	SN	WN
OC0	1401	1232	818	763	533
OC1	9999	9999	1000	9999	9999

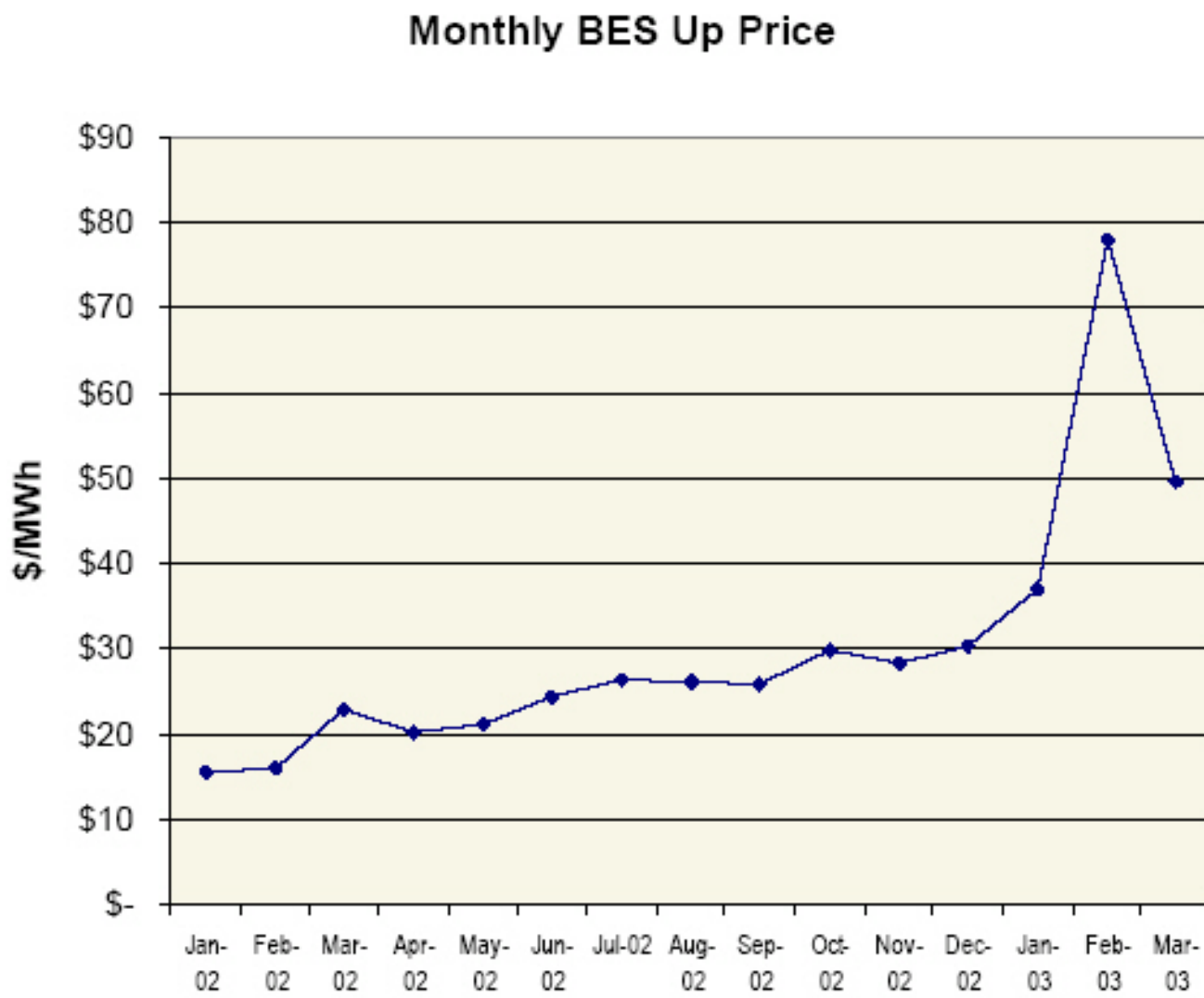
CM Zone	EN		NH		SH		SN		WN	
	Shift Factor	MW Scheduled Impact	Shift Factor	MW Scheduled Impact	Shift Factor	MW Scheduled Impact	Shift Factor	MW Scheduled Impact	Shift Factor	MW Scheduled Impact
HOUSTON2004	-4.73%	154	35.29%	1151	17.28%	564	20.31%	-662	1.81%	-59
NORTH2004	-5.14%	-15	0.35%	1	-0.43%	-1	0.65%	2	1.02%	3
NORTHEAST2004	35.49%	546	0.32%	5	-0.29%	-4	0.61%	9	0.17%	3
SOUTH2004	-4.01%	-69	21.96%	-377	19.15%	329	38.35%	658	3.11%	53
WEST2004	-0.11%	0	-1.78%	5	1.51%	-4	2.2%	-6	40.63%	-119
Total Scheduled Impact		616		785		884		1		-119
Shadow Price	\$0.0		\$0.0		Under Investigation		\$0.0		\$0.0	

CSC/CRE Data

Help



Average ERCOT Real Time Prices

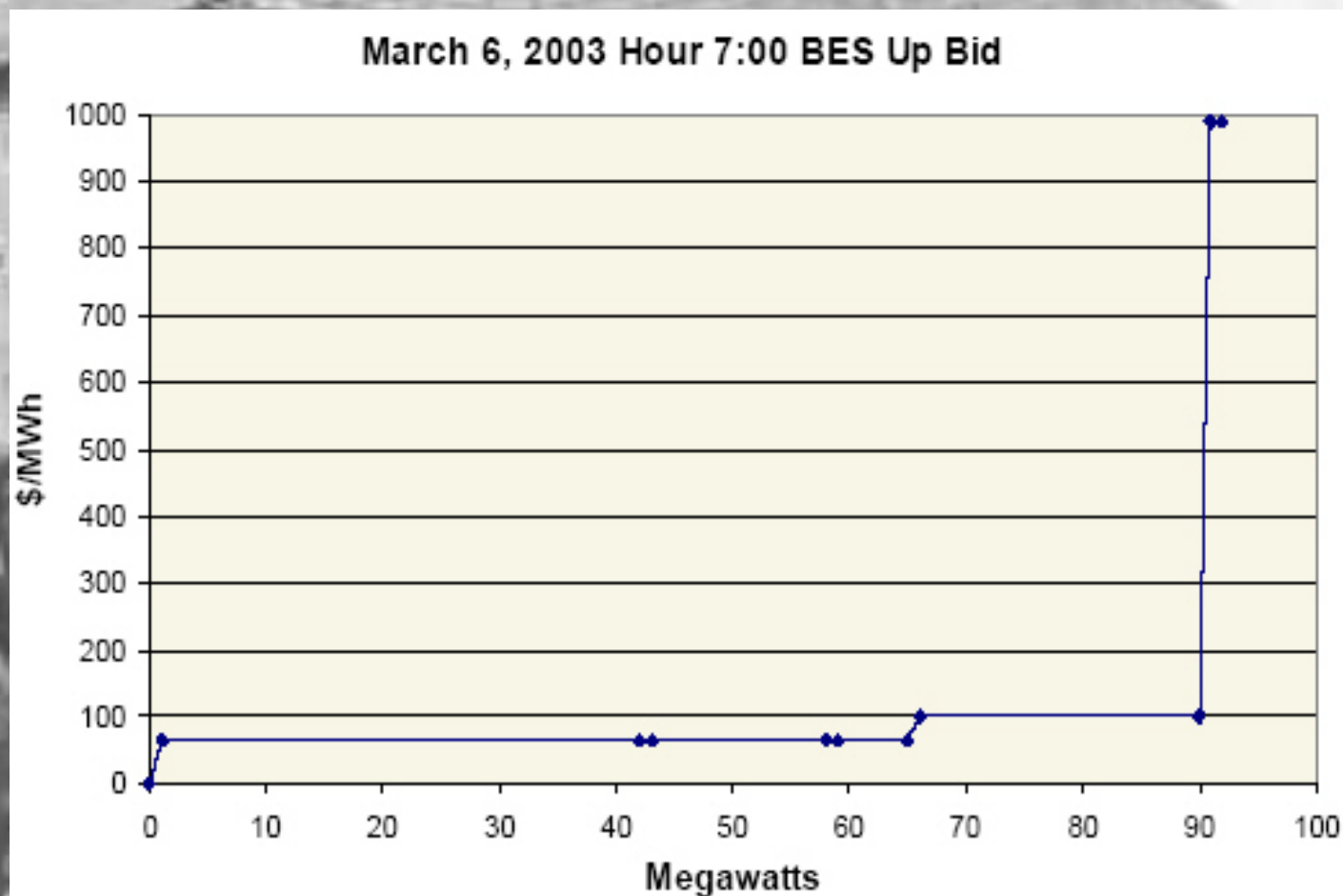


Mr. \$990.01

- In ERCOT, an RTO generally regarded as a success, real time prices have frequently been set at \$990.01/MWh.
- The identity of the market participant who sets this unusual "signature bid" is a tightly kept secret
- While Mr. \$990.01 has been active for almost two years, his actual market presence is miniscule -- about 60 megawatts -- even though he is one of the most influential market operators in North America
- Mr. \$990.01's significance is based on his knowledge of the computer computations under ERCOT's real time (BES) market
- ERCOT finally began to adjust their market rules in June after Mr. \$990.01 raised real time prices to \$990.01/MWh on a number of occasions -- bankrupting a number of market participants
- Use of such signature bids was one of the topics recorded in Mary Hain's infamous notes during the meetings that led to the Yoder/Hall "Death Star" memo



Mr. \$990.01's Signature Bid



Texas Reserve Margins

TABLE 3: ESTIMATED 2002/2003 WINTER RESOURCES AND DEMANDS (MW) AND MARGINS (%)

	December				January				February			
	Available 1 Resource s (MW)	Net	Available	Available	Available 1 Resource s (MW)	Net	Available	Available	Available 1 Resource s (MW)	Net	Available	Available
		Internal	Capacity	Reserve		Internal	Capacity	Reserve		Internal	Capacity	Reserve
		Demand 2	Margin 3	Margin 4		Demand 2	Margin 3	Margin 4		Demand 2	Margin 3	Margin 4
		(MW)	(%)	(%)		(MW)	(MW)	(%)		(%)	(MW)	(MW)
United States												
ECAR 5	118,884	81,868	31.3	45.6	121,749	84,394	30.7	44.3	118,215	81,417	31.1	45.2
ERCOT	73,849	41,097	44.3	70.7	74,588	43,725	41.4	70.6	74,588	37,183	50.1	100.6
FRCC	46,889	32,924	29.8	42.4	49,166	39,565	19.5	24.3	49,166	34,188	30.5	43.8
MAAC	65,495	41,859	36.1	56.5	66,345	44,015	33.7	50.7	66,345	42,082	36.6	57.7
MAIN	69,162	38,595	44.2	79.2	68,405	39,056	42.9	75.1	67,727	37,095	45.2	82.6
MAPP	32,330	22,579	30.2	43.2	32,067	22,926	28.5	39.9	32,319	21,692	32.9	49.0
NPOC	60,852	45,540	25.2	33.6	61,136	46,310	24.3	32.0	61,981	45,230	27.0	37.0
New York	29,619	24,550	17.1	20.6	29,619	24,550	17.1	20.6	29,619	24,550	17.1	20.6
NEPOOL	31,233	20,990	32.8	48.8	31,517	21,760	31.0	44.8	32,362	20,680	36.1	56.5
SERC 6,7	167,327	122,302	26.9	36.8	168,916	131,161	22.4	28.8	168,576	126,139	25.2	33.6
Entergy	29,023	20,004	31.1	45.1	29,023	18,924	34.8	53.4	29,023	18,443	36.5	57.4
Southern	42,101	30,777	26.9	36.8	43,815	34,413	21.5	27.3	44,024	32,715	25.7	34.6
TVA	31,346	25,001	20.2	25.4	31,610	26,908	14.6	17.1	31,611	25,824	18.3	22.4
VACAR	64,384	46,520	27.7	38.4	63,859	50,826	20.4	25.6	63,309	49,157	22.4	22.8
SPP	46,935	28,290	39.7	65.9	46,935	28,611	39.0	64.0	46,935	27,346	41.7	71.6
WECC 8	131,794	98,965	26.4	35.9	131,087	97,143	25.9	34.9	127,858	91,805	28.2	39.3
NMFP	47,539	35,026	26.3	35.7	48,096	34,816	27.6	38.1	47,862	31,790	33.6	50.6
RMFA	10,780	8,495	21.2	26.9	10,722	8,279	22.8	29.5	10,652	8,198	23.0	29.9
AZ-NM-SNV	23,691	16,421	30.7	44.3	22,846	16,747	26.7	36.4	21,898	15,684	28.4	39.6
CA-MK	49,784	37,023	25.6	34.5	49,403	37,301	24.5	32.4	47,446	36,133	23.8	31.3
Total-United States	813,044	551,819	32.1	47.3	819,765	576,906	29.6	42.1	813,101	545,177	33.0	49.1



TXU Traders Planning the Shortage

Jim Dunkin: *"I'd still go the same strategy tomorrow of having plenty on, but cut the load."*

Tim Drennan: "Hey, cut -- cut the load, go short, but just hold the price below 100 bucks.

Jim Dunkin: "Yeah, hold the price below 100 bucks. But I wouldn't roll a hundred bucks until I got the CT."

Tim Drennan: "Exactly. That's what I've done. I've got -- I've got -- here is my bid stack right now; 47 bucks, 52, 54, 59. And then I break -- that -- that -- I've got 18 -- well, I had 18. I'm revising it right now, but this is this morning, too. I had 1800 bid in there. And then the -- the remaining 1200, it broke over -- for that 1801 megawatt, it broke over to 250, 270, 290."

Jim Dunkin: "Okay."

Tim Drennan: "And that's what we did this morning. And what we'll do is we'll just -- we'll pull those prices back and keep it under 100, and I'll pass that on to Chad. And we're going to be fine."



A Little Customer Respect

TXU Trader 2: "Did I put Caller ID on that or something?"

Tim Drennan: "No. Well, you do. You've got Caller I.D. I just didn't know who it was. I knew it was a 972 prefix, so I just -- I wanted to make sure it wasn't somebody local here, Garland or somebody like that trying to call me. Oh, City of Garland calls me all the time."

TXU Trader 2: "For what?"

Tim Drennan: "They got a little power plant out there. I think they've got 250, 300 megs. And if they're short, you know, they buy it from me sometimes."

TXU Trader 2: "Is that right?"

Tim Drennan: "When I -- when I bend them over the bench and give it to them."

(Laughter)

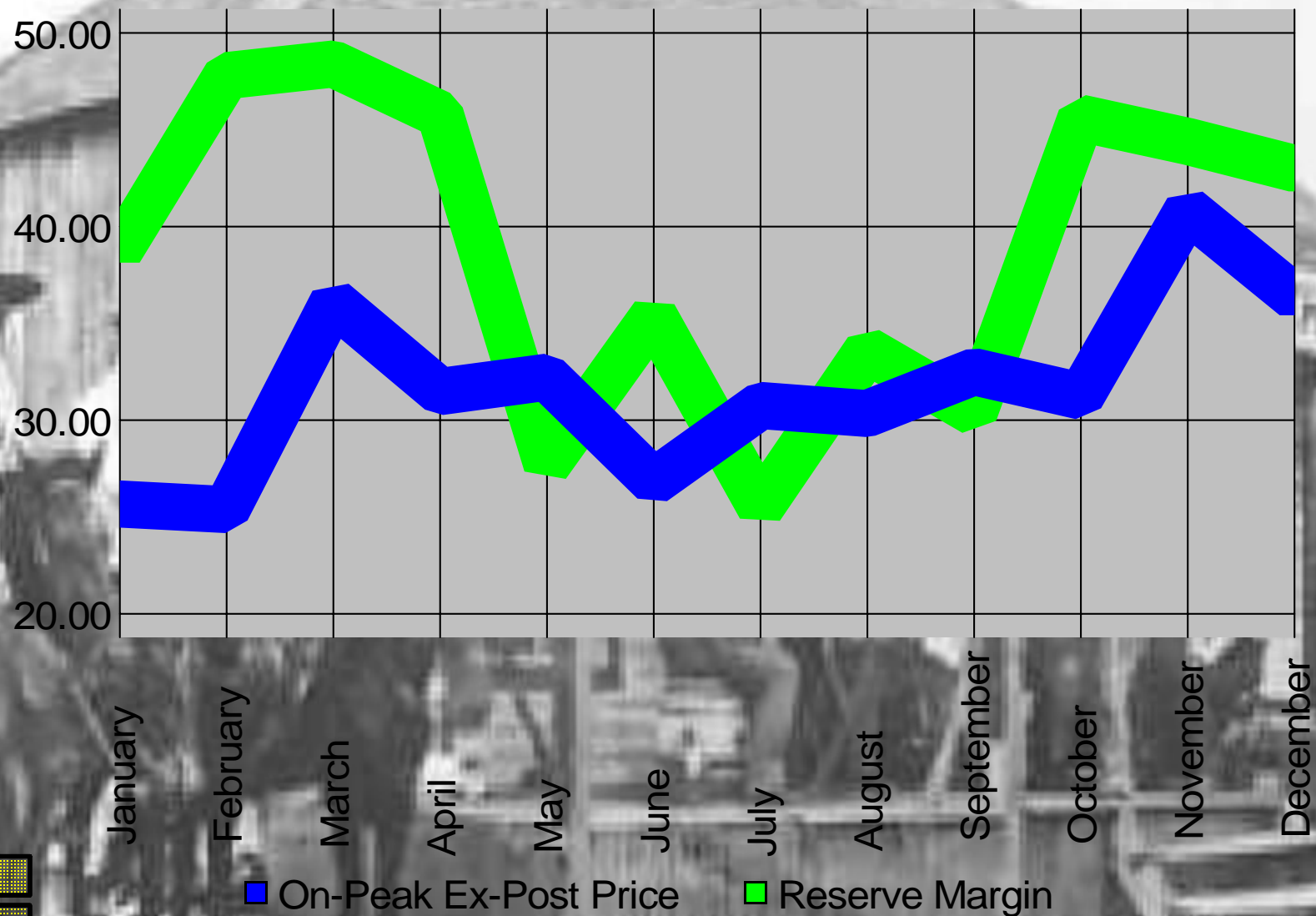


How Efficient Is The California Real Time Market?

- The Ex-Post market provides energy to the California ISO every ten minutes
- Enron shipped thousands of megawatts from Northwest markets to California during the California crisis using a poorly understood scheme called "Fat Boy"
- This was the most significant of the Enron schemes since Fat Boy energy received the Ex-Post price was not counted as a supply in the Ex-Post market
- As far as I know, no one has ever checked to see if this market is a good deal



2002 On-Peak Ex-Post Prices



This leads to many questions

- Why were prices so high?
- Why were they high when reserve margins were good?
- What was the rate of return for assets committed to the Ex-Post market?
- The first two questions have no answers. The third is very simple.



How much money did a peaker make in the California Ex-Post market in 2002?

- A peaker with a 10,000 mmbtu/kWh heat rate would have been dispatched 2,848 hours -- approximately 35% of the time
- Capital costs for a peaker would have been \$63,000/MW.
- Profits would have been \$36,574 -- a rate of return of 58%

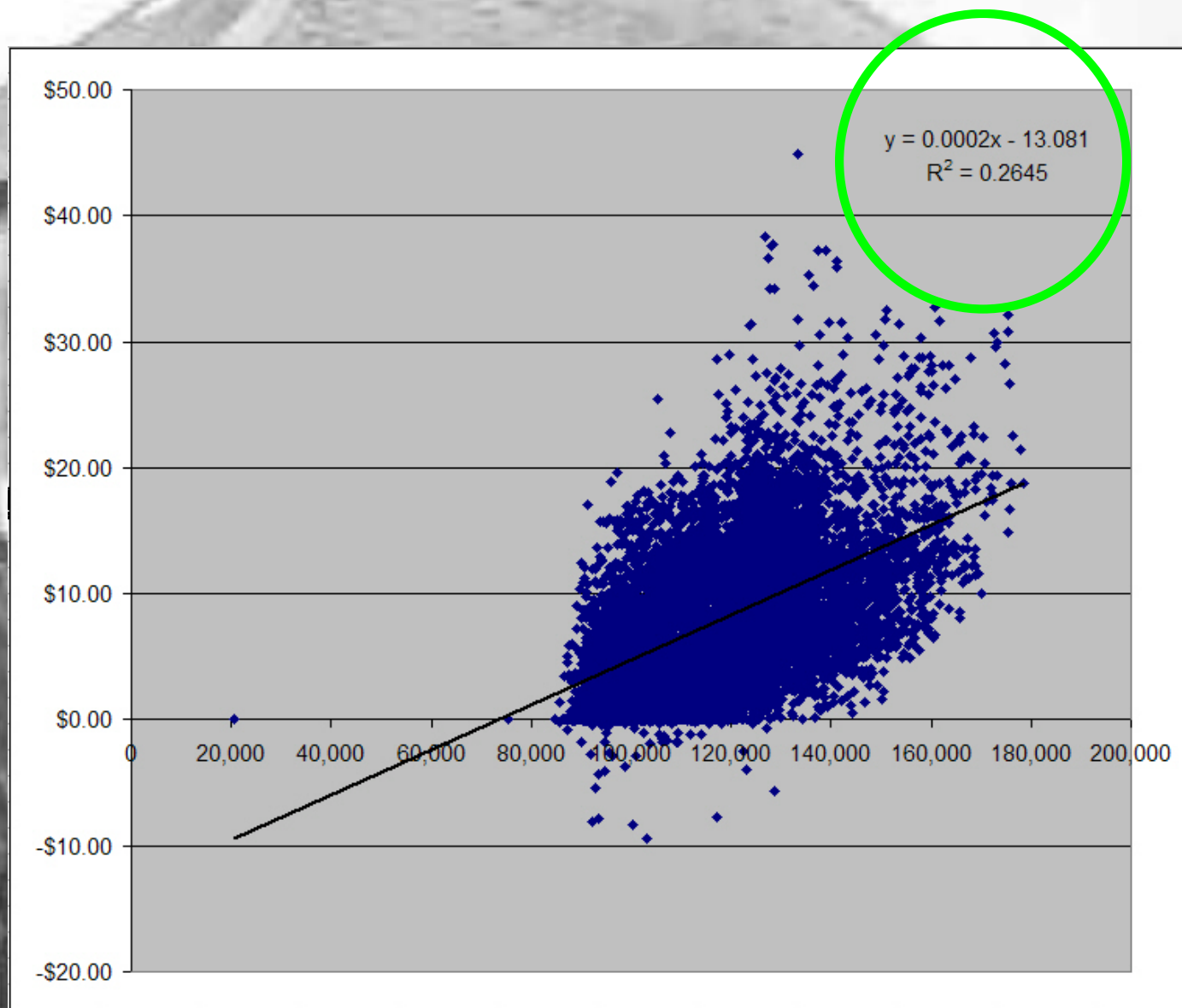


How much money did a Frame 7 make in the California Ex-Post market in 2002?

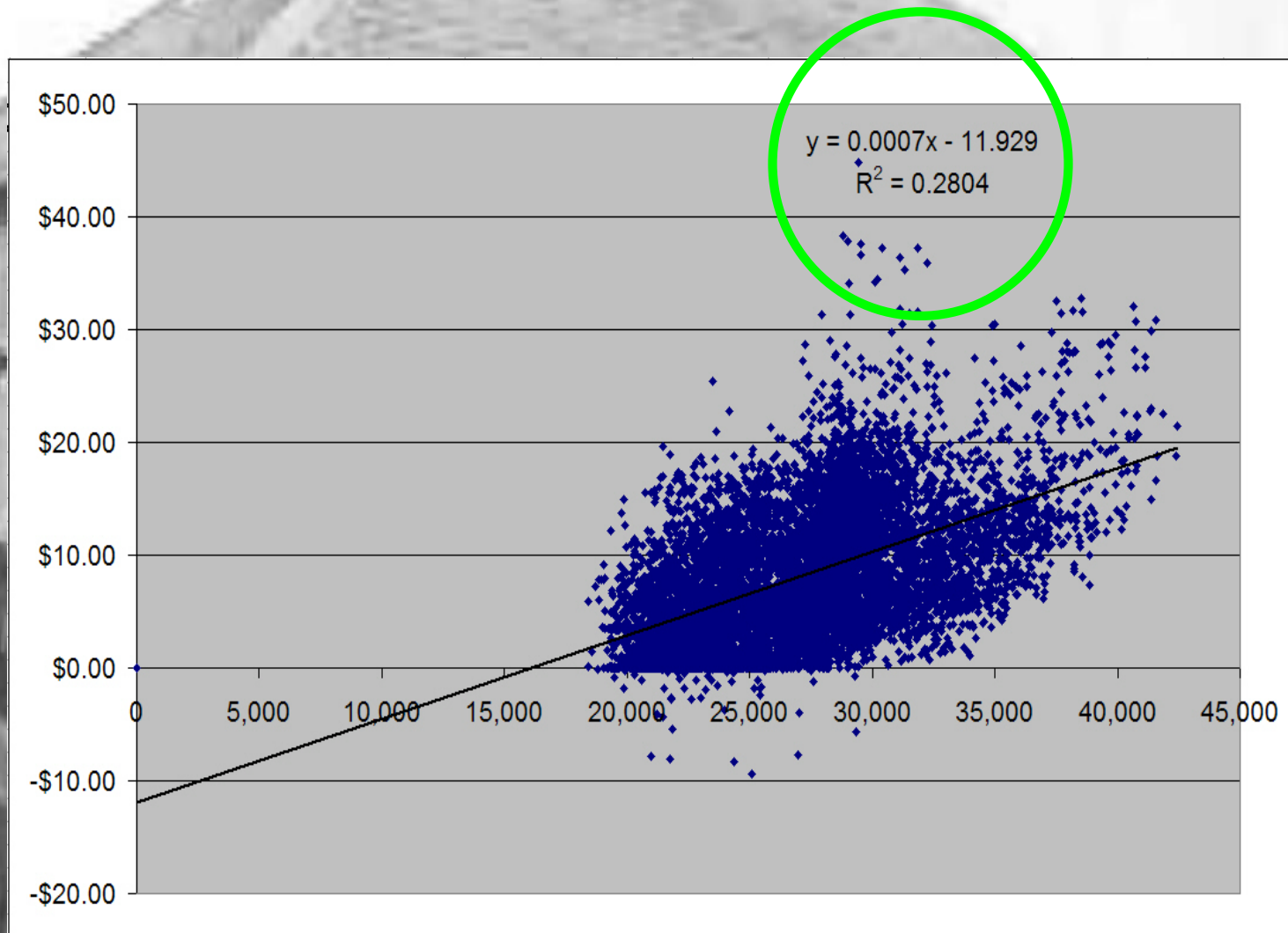
- A Frame 7 with a 7,000 mmbtu/kWh heat rate would have been dispatched 4,180 hours -- approximately 65% of the time
- Capital costs for a peaker would have been \$108,000/MW
- Profits would have been \$70,905 -- a rate of return of 65%



Loads and Prices in the WECC



Loads and Prices at the ISO



Lessons For the Future

- Open meeting laws and public documents rules are not a luxury -- they are a necessity
- Responsibility needs to be clearly identified -- when all are equally responsible, no one is responsible
- Market surveillance should not report to the entities being "surveilled"
- Enforcement should be independent -- the police should not report to the criminals
- Simple tests for efficiency are required
- Rules are not a suitable replacement for performance





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