

Performance Review of Electric Power Markets

Presentation to the Legislative Transition Task Force
Part I: National Overview and Updates

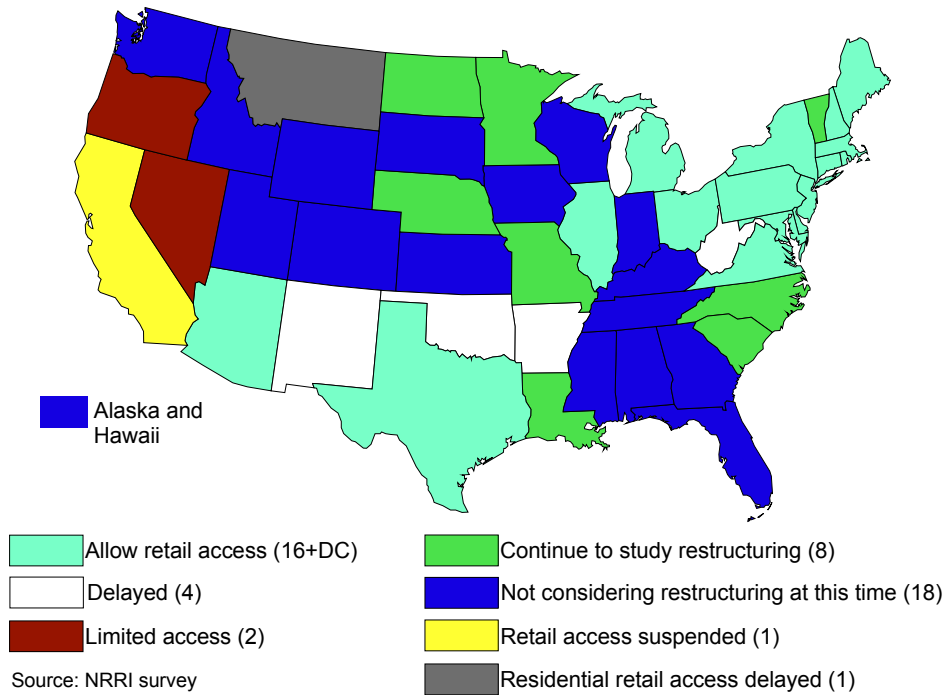
November 26, 2002

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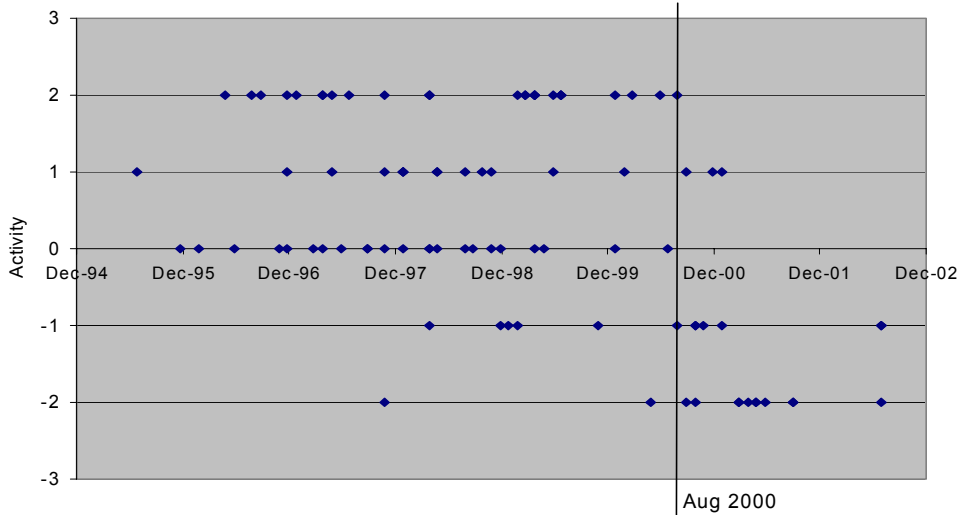
Summary

- Overview of state retail access status
- Retail market performance overall
- Some recent industry developments
- Regional market overview

Status of State Retail Access



Summary of State Electric Restructuring Activity



Values assigned to determine overall direction of electric restructuring:

+2 = Decision to go ahead with restructuring,

+1 = Efforts or recommendations to go ahead with restructuring, pilot programs, state facilitation of RTO formation, efforts to mitigate market power, etc.,

0 = Study by the state commission or by a legislative committee,

-1 = Efforts or recommendations to not go ahead with restructuring by either a study committee, a task force, the staff of the state commission, or judicial intervention, and

-2 = Decision to not go ahead or to delay restructuring either indefinitely or to a specific date.

Data Sources: "Status of Electric Industry Restructuring Activity by State," Department of Energy, Energy Information Administration (www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html) and NRRl surveys.

Evaluation Criteria

- Retail market performance is based on:
 - ▶ number of offers, offers with savings opportunities, number of suppliers, type of offers, and percent of customers that selected an alternative supplier
- Wholesale market performance is based on:
 - ▶ how closely actual prices are tracking what would be expected in a fully competitive market -- where suppliers have no or only limited ability to control the price

Fig 3. Residential offers nationwide



**Fig 4. Residential offers nationwide
(with Texas shown separately)**

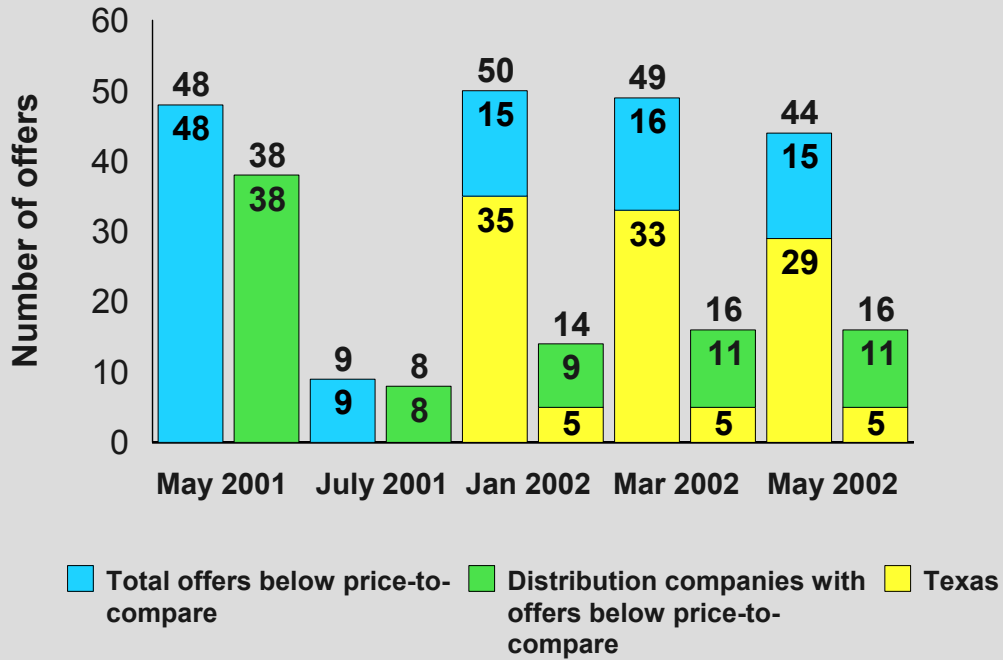


Table ES 1: Summary of residential offers for states with offers below the price-to-compare

State	Total number of distribution companies in the state	Number of distribution companies with offers below price-to-compare	Total number of offers in the state	Total number of offers below the price-to-compare in the state
Connecticut	2	1	8	1
District of Columbia	1	1	1	1
Maine	3	1	1	1
Maryland	4	1	4	2
New York	6	3	7	4
Ohio	8	3	3	3
Pennsylvania	8	1	33	3
Texas	6	5	45	29

Table ES 2: Summary of statewide customer and load switching

State	Percentage customers switched	Percentage load/usage/peak load switched	Date of information
District of Columbia	7.4	48.6	June 2002
Maine	1.3	37	July 1, 2002
Maryland	3.4	16.6	June 28, 2002
Massachusetts	3.2	31.3	June 2002
Michigan	0.15	6-7	July 2002
New Jersey	0.2	1.6	June 26, 2002
New York	5.2	18.9	May 31, 2002
Ohio	13.8	11.8	March 31, 2002
Pennsylvania	5.5	7.9	July 1, 2002
Rhode Island	0.58	12.9	June 2002
Texas	7.3	19.2	May 02 for load and Jul-02 for customers

Some recent retail access developments since the report was issued

- Maryland
 - ▶ utilities, consumer groups and large industrial customers in Maryland have proposed extending standard offer service for customers, allowing some non-shopping customers to pay fixed rates out to 2012
 - ▶ residential standard offer full-requirement services would be bid out on staggered terms and split into blocks to diversify sources

Some recent retail access developments since the report was issued (*continued*)

- The New York PSC voted to allow New York State Electric & Gas to get paid for extra costs for supplying default services for electric and gas
 - ▶ customers must choose a utility rate plan or other electric supplier by December 31
 - ▶ the utility offers a "premium" two year, fixed-price option that includes risk management costs
 - ▶ a variable-priced option varies from month-to-month, with about 25% of the residential supply price moving with the market and higher for C&I customers
 - ▶ Commission wants to move gradually toward cost-based rates to facilitate competition

Some recent retail access developments since the report was issued (*continued*)

- New Mexico
 - ▶ PNM, New Mexico's largest utility, filed an agreement with the Public Regulation Commission in October that would cut utility electric rates
 - ▶ PNM is urging all parties who sign the document to call for a repeal of the state's 1999 restructuring law
 - ▶ President and CEO of PNM was quoted as saying that he "is not sure it makes sense for New Mexico to take on the risk of being a leading edge, and potentially a bleeding edge, player"

Some recent retail access developments since the report was issued (*continued*)

- Arizona
 - ▶ The Arizona Corporation Commission reversed a 1999 rule that requires utilities to divest generation assets
 - ▶ A commission administrative judge had suspended the January 2003 deadline for divestiture until January 2004 -- citing a poorly structured Arizona wholesale market and susceptibility to potential failure and manipulation

Important Industry Developments Over the Past Year

- A series of revelations and scandals
- An industry-wide "credit crunch"
- New plant construction has dropped off considerably
- FERC's Standard Market Design, Notice of Proposed Rulemaking -- SMD NOPR

Electric Supply Industry Events of the Last Year

- Enron Corporation's collapse in late 2001
- Revealed that some energy companies inflated revenue and trading volume and misreported prices to trade publications
- Enron memos released that revealed how they were able to manipulate trading rules in California during the crisis of 2000 and 2001
- Continuing investigation by FERC of energy company trading activities in the West

Industry "Credit Crunch"

- Standard & Poor's assessment of the U.S. utility industry (electric, gas, pipeline, and water companies)
 - ▶ rating actions were overwhelmingly negative for the first half of this year
 - ▶ 78 downgrades among holding companies and operating subsidiaries -- compared with only six upgrades
 - ▶ average rating for the power sector as a whole slipped into the 'BBB' area
 - ▶ companies that continue to emphasize a vertically integrated structure average 'A-'
 - ▶ many utility holding companies "that have ventured too far afield from their core competencies" have had rating downgrades

Industry "Credit Crunch" (continued)

- "Indeed, there are still 26 to 27 states that remain untouched by deregulation, or where any such impulses have quickly retreated. Standard & Poor's sees a solid investment-grade picture among the utilities operating in these jurisdictions."

Standard & Poor's Utilities, November 20, 2002, "U.S. Power and Energy Sector Credit Slide to Continue."

- The rating agency notes that in the third quarter of 2002 there were 57 downgrades among utility holding companies and operating subsidiaries, compared to just eight upgrades. For the same period in 2001, there were nine downgrades and five upgrades.

Standard & Poor's Utilities & Perspectives, October 14, 2002, at 2.

Industry "Credit Crunch" (continued)

- Fitch Ratings
 - ▶ One out of four U.S. investor-owned utilities have had debt rating downgrades this year
 - ▶ downgraded 113 ratings in the sector since January -- the pace has been accelerating
 - ▶ the credit slump is unlikely to ease next year
 - ▶ they cite collapse in investor confidence, heavy debt loads relative to cash flow, and weak power prices
 - ▶ investor confidence lost by revelations of sham trades and improper accounting
 - ▶ companies with unregulated operations in particular are under pressure

Effect on Planned Capacity

- According to data from Platts
 - ▶ 179,565 MWs of planned new capacity have been tabled or canceled from January through July 2002
 - ▶ Over 60,000 MWs are expected to begin operation in 2003 and 2004
 - ▶ 140,000 MWs have been added in the last three years
 - ▶ General Electric's Power Systems division is forecasting an 80% decline in U.S. gas-fired turbine orders and shipments

Federal Energy Regulatory Commission's Proposed "Standard Market Design"

- FERC issued a Notice of Proposed Rulemaking (NOPR) on July 31, 2002
- Reasons FERC gives for why we need SMD
 - ▶ inconsistent rules across the country
 - raise costs to customers
 - hamper investment in infrastructure
 - allow discrimination by transmission owners
 - allow market manipulation

Major Elements of FERC's SMD Proposal

- Independent Transmission Providers (ITP)
- Transmission pricing reforms
- Congestion management through LMP
- Tradable Congestion Revenue Rights (CRRs)
- Energy spot markets (real-time & day-ahead)
- Market power mitigation and monitoring
- Resource adequacy requirement

Standard Market Design: The Big Picture

- FERC sees SMD as the next step in open access implementation
- Market design flaws and lack of uniformity cause a misallocation of transmission and generation resources
- According to FERC, "no region has been exempt from market design flaws of one type or another"
- Standardization of market design will, in FERC's view, increase efficiency both within the RTOs and across RTOs

Need for Standard Market Design

- Current market design rules allow suppliers that also provide transmission service to favor their own generation and disadvantage other suppliers
- Lack of regional coordination of the grid (for example, available transmission capacity, or ATC, calculated on a company basis) contributes to inefficient operations by causing unnecessary transaction curtailments when transmission congestion is overstated

General questions on the need for market standardization

- Should one standard design be required for all regions?
- FERC may allow regional variation *with* an approved RTO (approved RTOs require SMD?)
- How can regional variation be allowed and still meet the goals of SMD?
- Is SMD necessary when a state or region does not have retail access?
- States will lose jurisdiction over the bundled transmission component of retail rates
- Low-cost states are concerned by the loss of control of lower-cost generation for native load

Will SMD improve market performance?

- FERC believes that SMD should increase efficiency within RTOs and also across RTOs
 - ▶ however, additional benefits (benefits - costs) from larger RTOs may be modest and are uncertain
 - ▶ some inefficiencies are due to physical constraints, not because of market design flaws
 - ▶ LMP may increase efficiency, but it may also increase the potential for suppliers to exercise market power

Cost/Benefit analysis of the Southeast

- Study of the benefits and costs of establishing Regional Transmission Organizations (“RTOs”) in the southeast in conjunction with the adoption of the Standard Market Design (“SMD”) as proposed by FERC
- This study was undertaken by Charles River Associates and GE Power Systems Energy Consulting at the request of the Southeastern Association of Regulatory Utility Commissioners (“SEARUC”).

Cost/Benefit analysis of the Southeast

- Estimated the net benefits of forming three RTOs in the southeast—GridSouth, SeTrans and GridFlorida
- RTO formation will include the reduction of wheeling charges and potentially the implementation of SMD, which includes, among other things, a proposal to adopt Locational Marginal Pricing (“LMP”)

The principal conclusions of the SEARUC study

- There is considerable uncertainty as to whether RTOs and SMD would provide greater benefits to the southeast than the implementation costs
- The GridSouth and GridFlorida areas do not appear to have positive net benefits under the proposal, with GridFlorida being close to a breakeven position in some cases
- The SeTrans area would have positive net benefits in at least some scenarios under the proposal

The principal conclusions of the study (*continued*)

- There is some uncertainty about the magnitude of the SeTrans net benefits, in particular, which largely depends on two factors—a policy of Participant Funding of certain transmission investments and the number of merchant plants in the Entergy and Southern Company areas that become operational in the next year or so
- Although not quantified in the report, it is clear that the allocation of rights to the transmission system will be an important determinant of the benefits to native load

Data Availability and Quality

- Data on market prices and other trading activities are becoming less available and are of lower quality than what was available under regulation
- Competitive market participants are reluctant to share proprietary information with competitors
- National security concerns are also limiting market information
- Misreporting by some energy companies has damaged the credibility of the information collected

Performance Review of Electric Power Markets

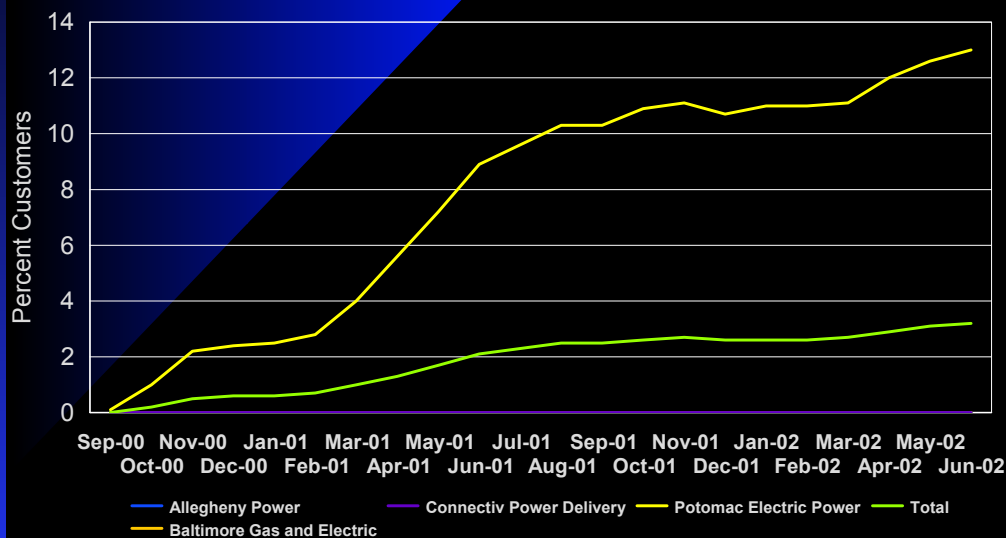
Part II: Regional Overviews

Presentation to the Legislative
Transition Task Force

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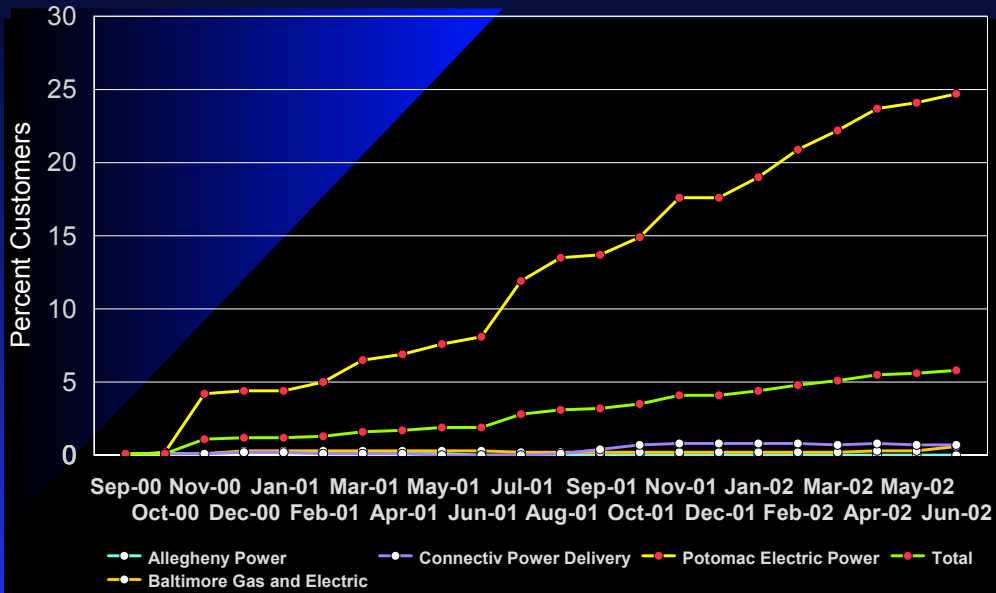
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Regional Review: Mid-Atlantic Maryland Residential Customers Switching to Alternative Suppliers



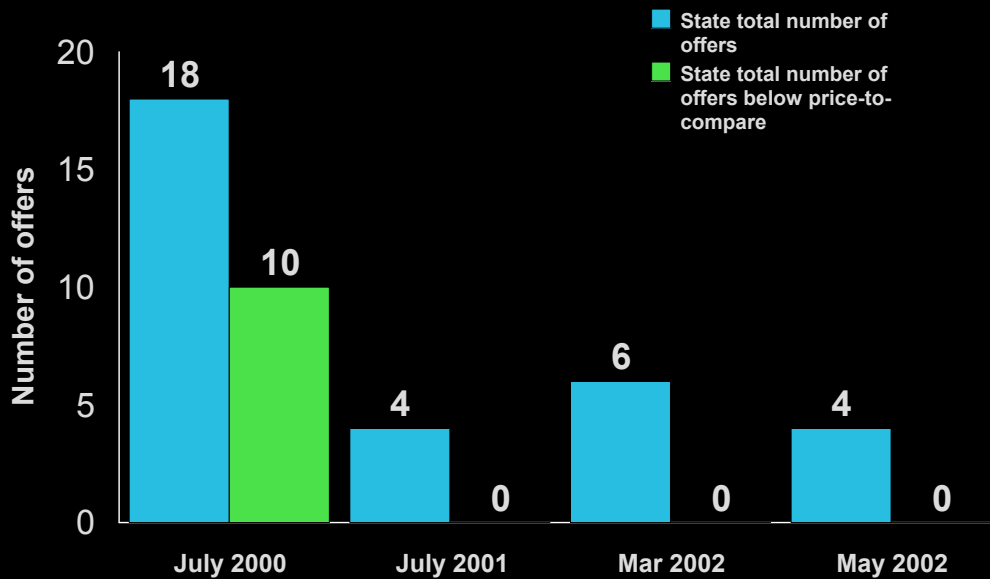
Source: Maryland Public Service Commission, June 28, 2002.

Maryland Non-Residential Customers Switching to Alternative Suppliers



Source: Maryland Public Service Commission, June 28, 2002.

New Jersey statewide residential offers



Data Source: Wattage Monitor (<http://www.wattagemonitor.com>)

Percent of New Jersey Residential Customers Served by an Alternative Supplier

	Nov 2000	May 2001	Oct 2001	Dec 2001	Aug 2002
Conectiv	5.9	1.5	0.12	0.22	0.10
GPU	1.0	0.2	0.03	0.04	0.04
PSE&G	1.8	1.5	0.42	0.40	0.30
State Total	2.2	1.1	0.26	0.27	0.19

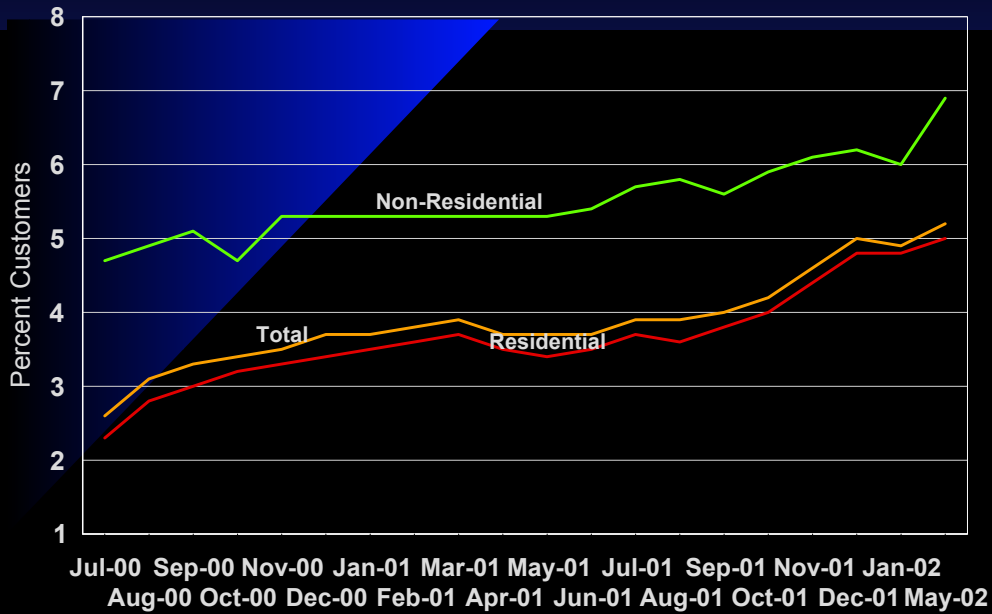
Data Source: New Jersey Board of Public Utilities

Percent of New Jersey Non-Residential Customers Served by an Alternative Supplier

	Nov 2000	May 2001	Oct 2001	Dec 2001	Aug 2002
Conectiv	11.8	1.1	0.26	0.40	0.76
GPU	5.8	1.1	0.01	0.01	0.05
PSE&G	6.3	5.2	0.09	0.09	0.06
State Total	6.9	3.4	0.09	0.11	0.15

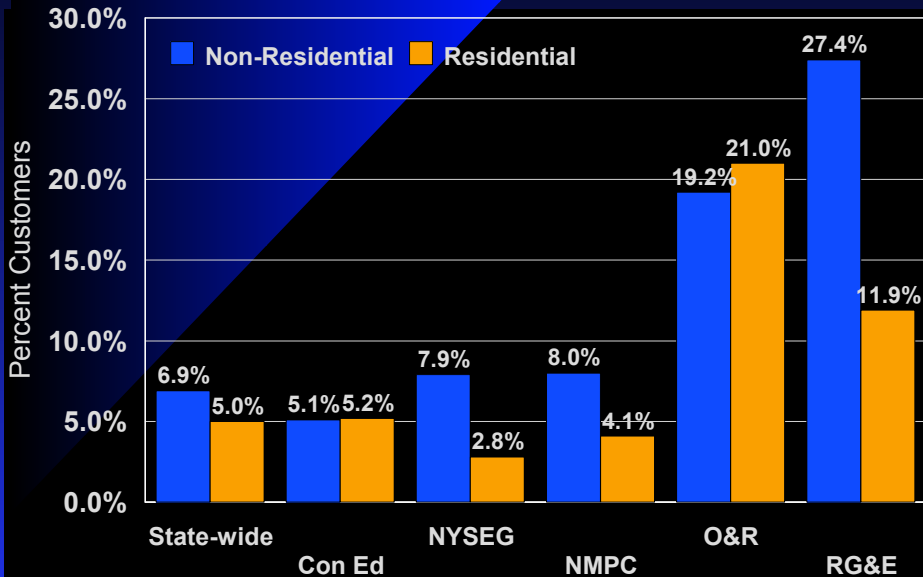
Data Source: New Jersey Board of Public Utilities

Percent of New York Customers Choosing a Competitive supplier



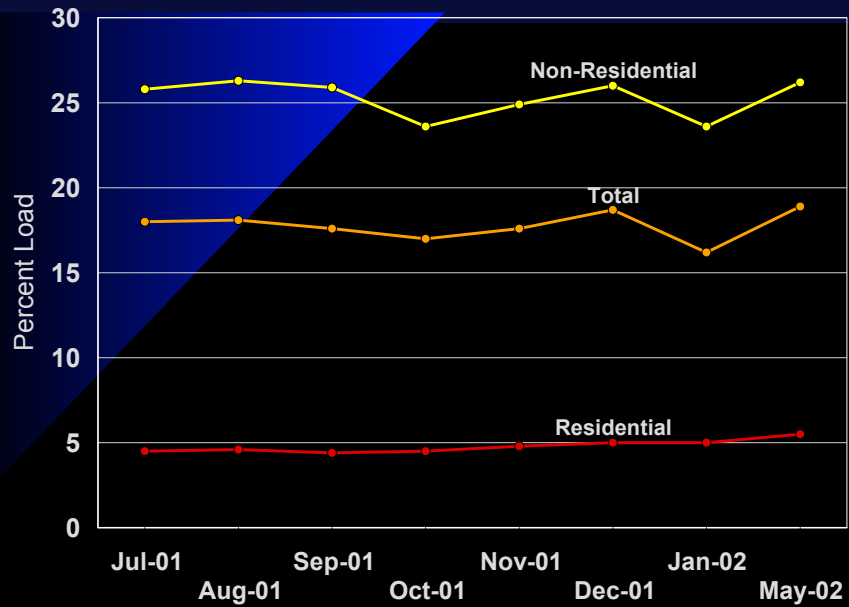
Source: New York State Public Service Commission

New York State Customer Migration in May 2002



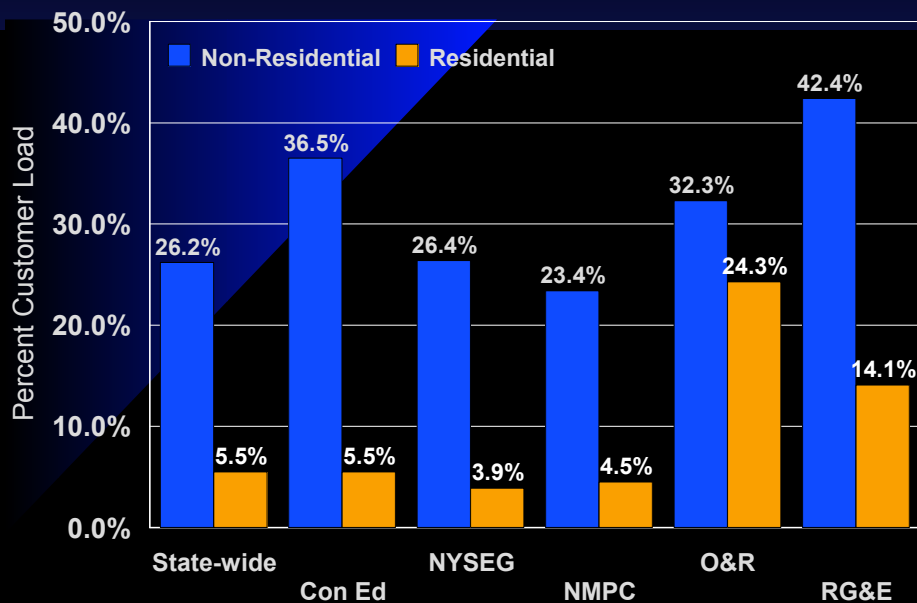
Source: New York State Public Service Commission, May 2002

Percent of New York Customer Load Served by Competitive suppliers



Source: New York State Public Service Commission

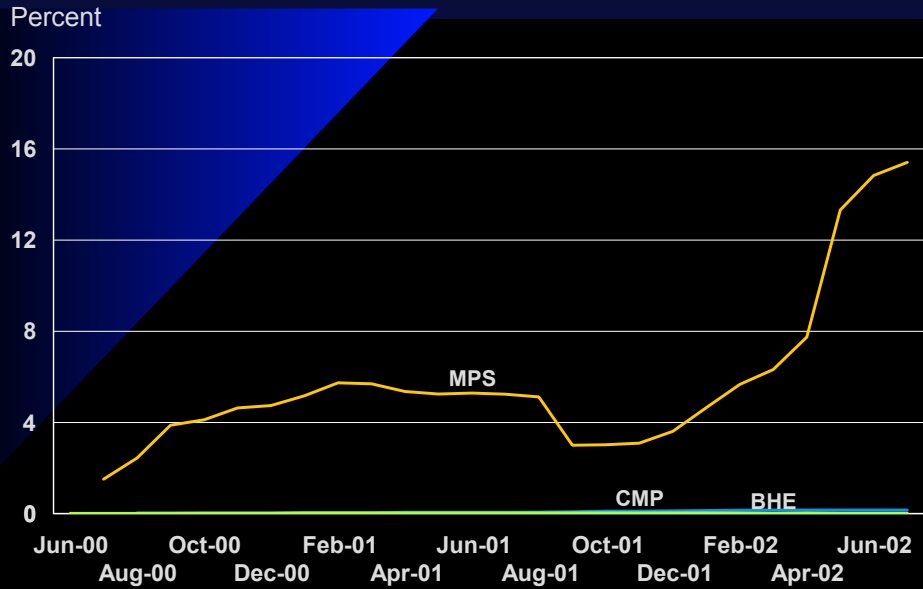
New York State Load Migration in May 2002



Source: New York State Public Service Commission, May 2002

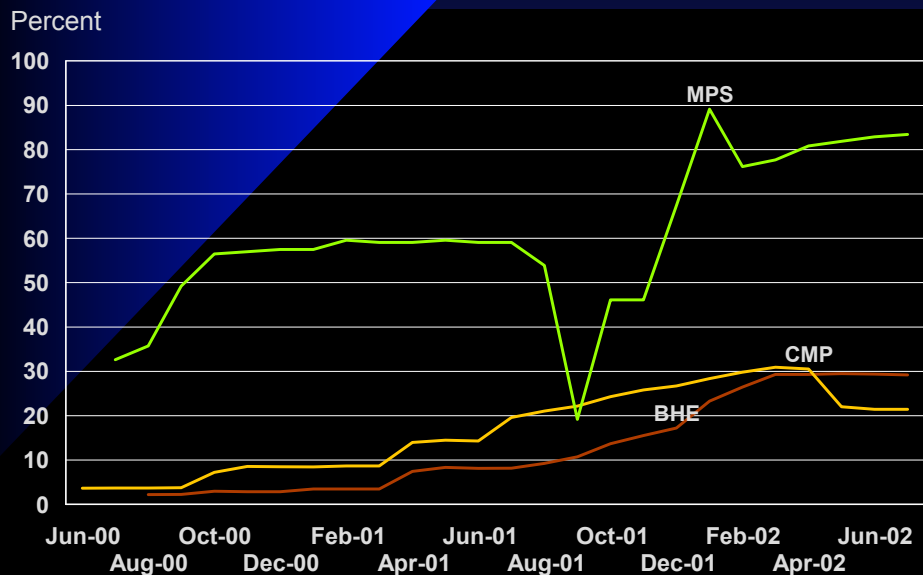
Review of Key States

Percent of Maine Residential & Small Commercial Customers Served by Alternative Supplier



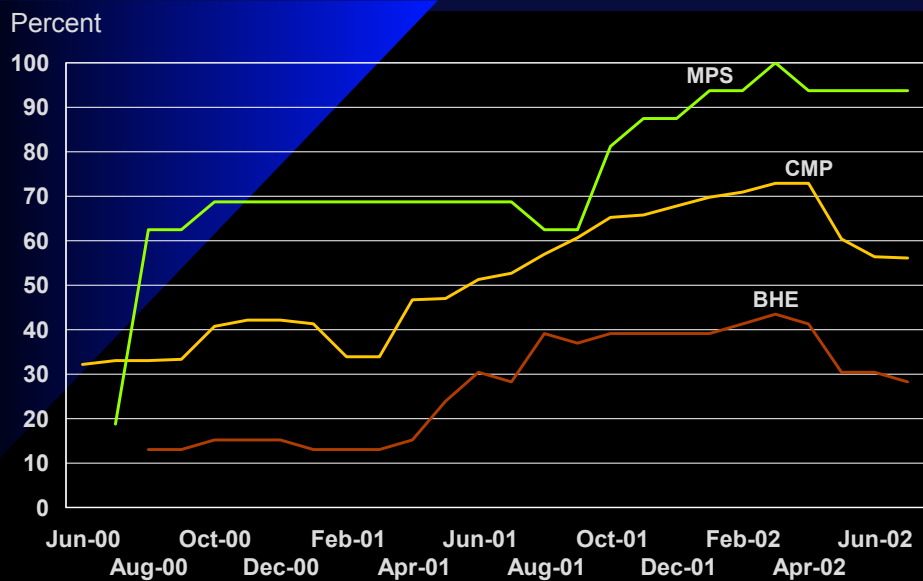
Data Source: Maine Public Service Commission

Percent of Maine Medium Customers Served by Alternative Supplier



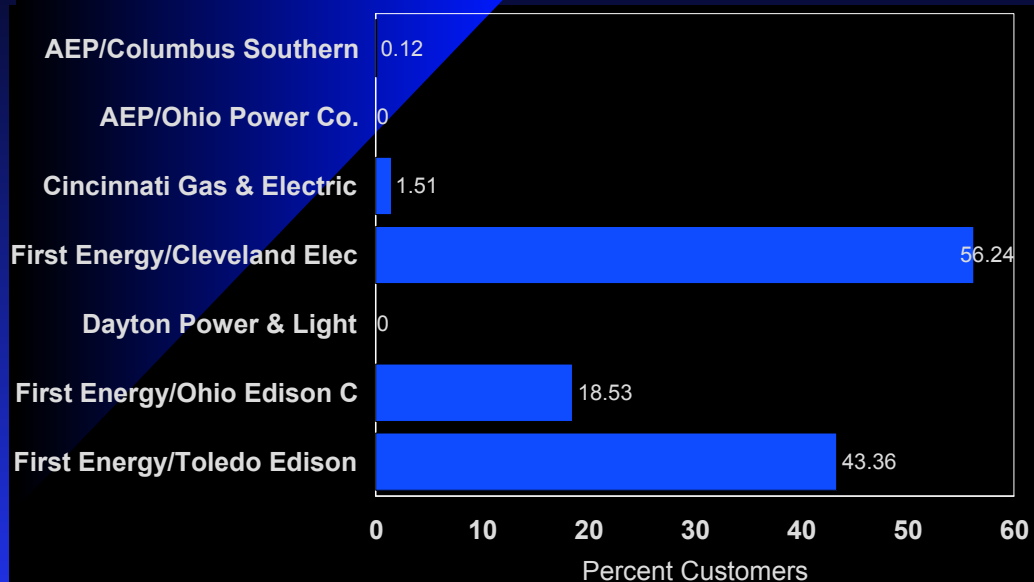
Data Source: Maine Public Service Commission

Percent of Maine Large Customers Served by Alternative Supplier



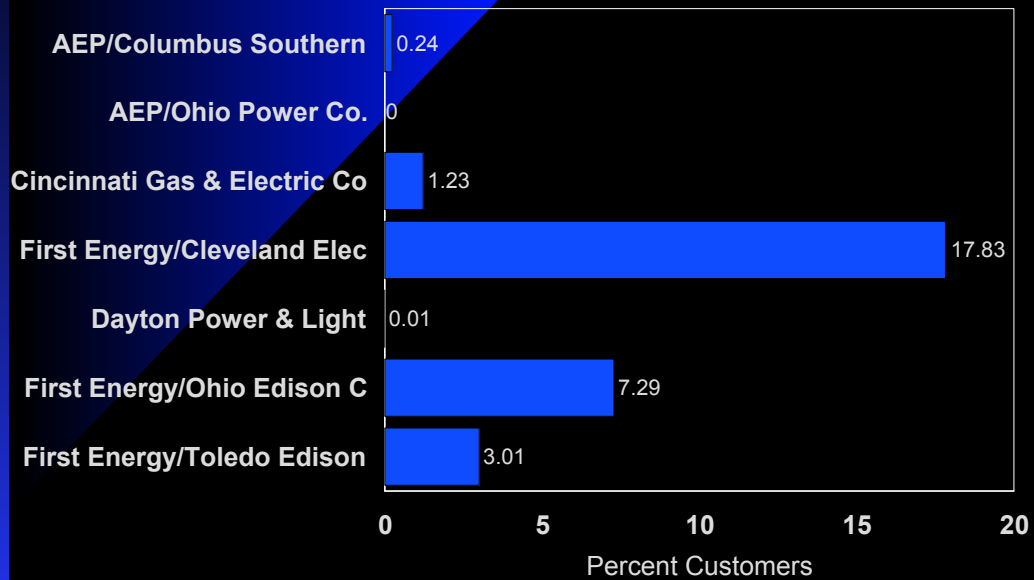
Data Source: Maine Public Service Commission

Ohio Residential Customers Switching to Alternative Suppliers



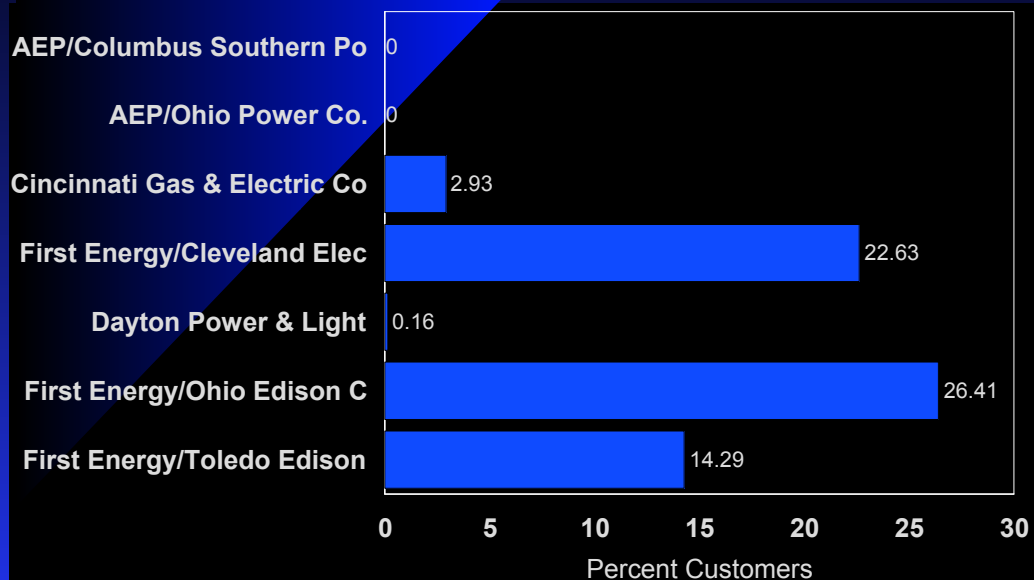
Source: Ohio Public Utilities Commission, Division of Market Monitoring & Assessment, June 30, 2002.

Ohio Commercial Customers Switching to Alternative Suppliers



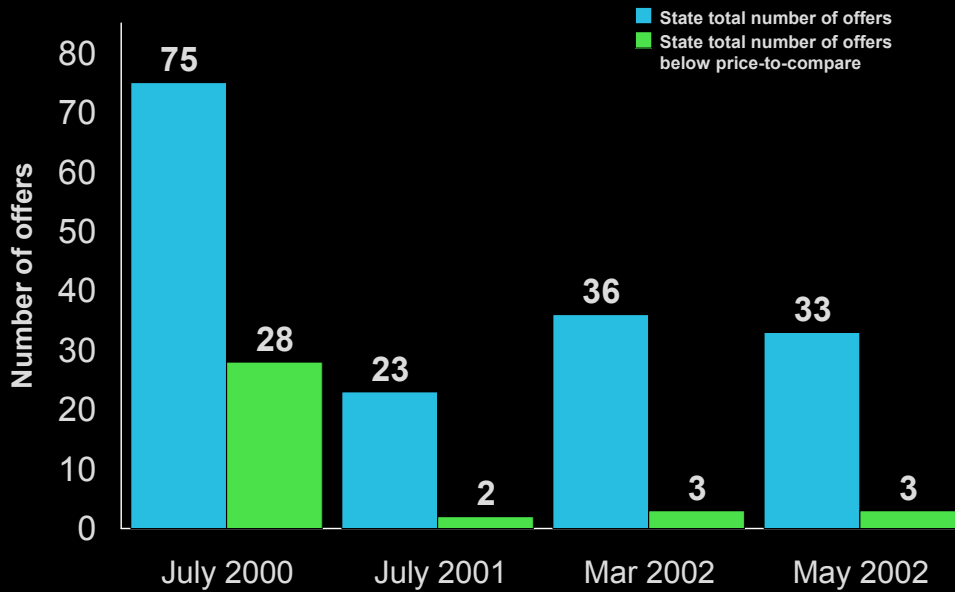
Source: Ohio Public Utilities Commission, Division of Market Monitoring & Assessment, June 30, 2002.

Ohio Industrial Customers Switching to Alternative Suppliers



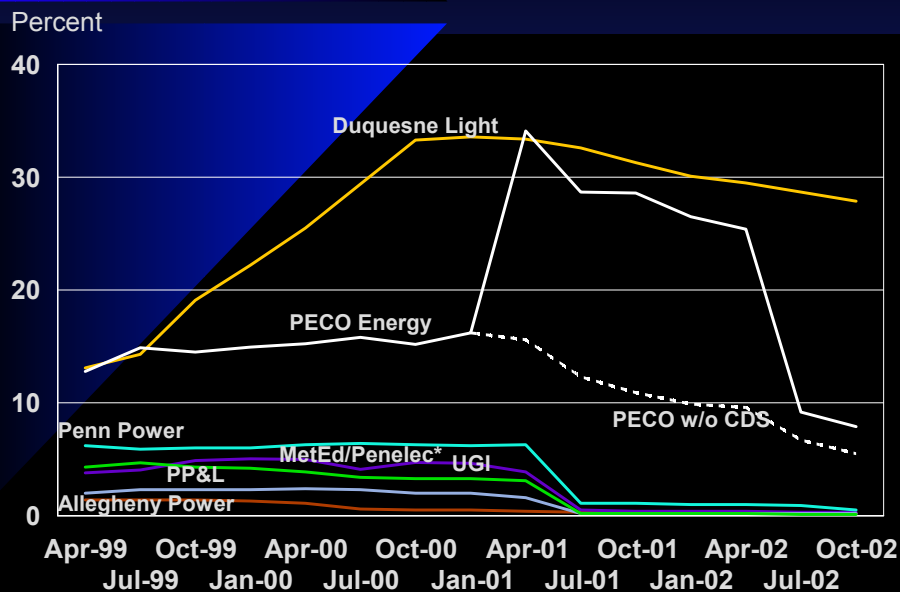
Source: Ohio Public Utilities Commission, Division of Market Monitoring & Assessment, June 30, 2002.

Pennsylvania statewide residential offers



Data Source: Wattage Monitor (<http://www.wattagemonitor.com>)

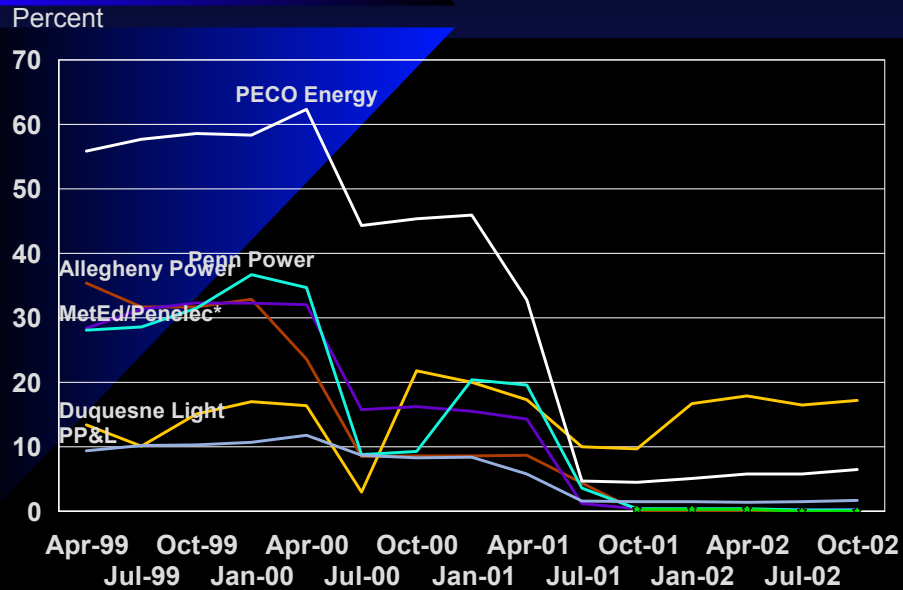
Percent of Pennsylvania Residential Customers Served by Alternative Supplier



*MetEd and Penelec were formerly part of GPU.

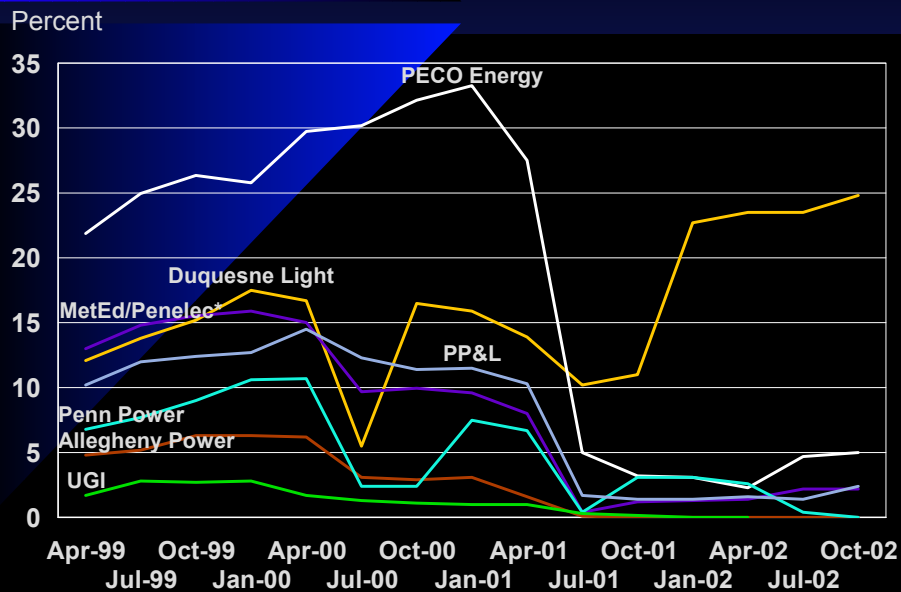
Data Source: Pennsylvania Office of Consumer Advocate

Percent of Pennsylvania Commercial Customers Served by Alternative Supplier



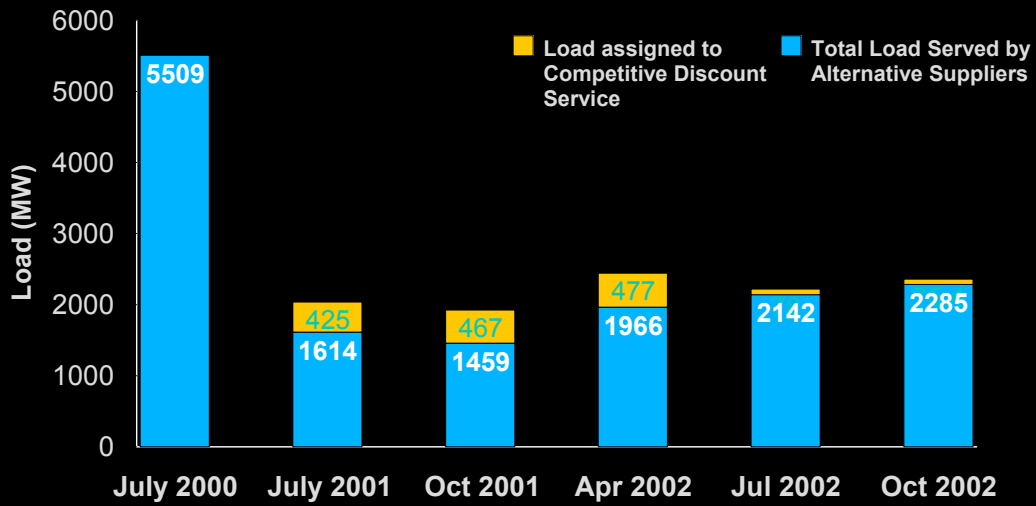
*MetEd and Penelec were formerly part of GPU.
Data Source: Pennsylvania Office of Consumer Advocate

Percent of Pennsylvania Industrial Customers Served by Alternative Supplier



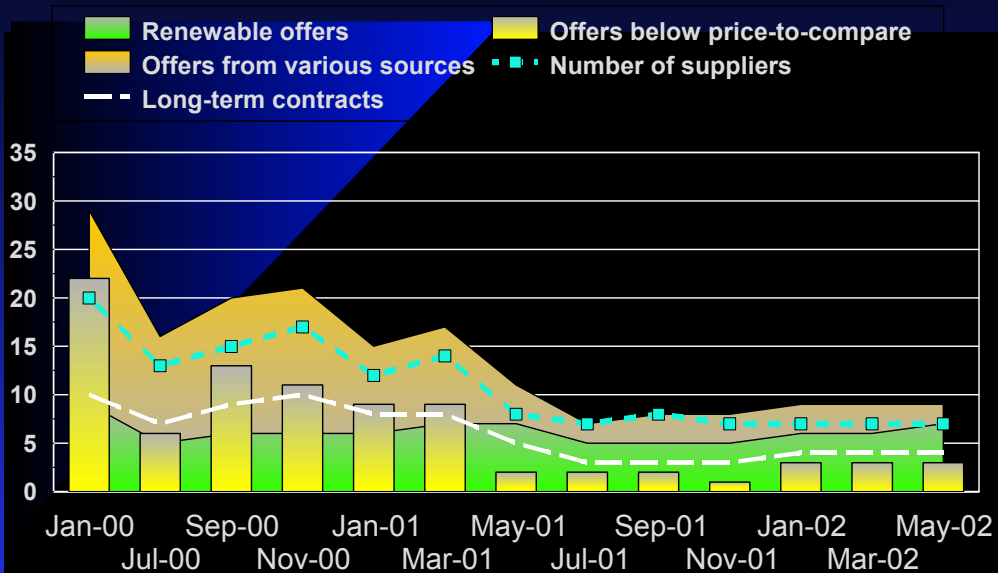
*MetEd and Penelec were formerly part of GPU.
Data Source: Pennsylvania Office of Consumer Advocate

Pennsylvania total load served by alternative suppliers



Data Source: Pennsylvania Office of Consumer Advocate

PECO Energy Trend



Data Source: Wattage Monitor (<http://www.wattagemonitor.com>)

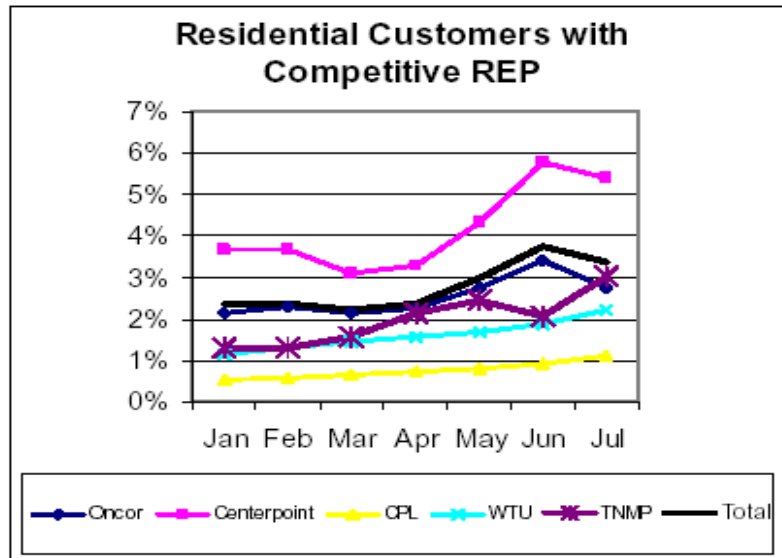
Table 9. Customer Switching Activity in Texas

T&D Utility	Percentage Customers in the process of moving to competitive suppliers	Percentage MWh sold by all REPs non-affiliated to T&D Utility
Oncor (TXU)	7.68%	11.9%
Reliant	9.47%	24.7%
CPL	3.21%	28.9%
TNMP	2.93%	21.0%
WTU	3.79%	32.0%
TXU-SESCO	0	NA
Total	7.31%	19.2%

Table 11. Summary of inter-affiliate offers in Texas' residential market in May 2002

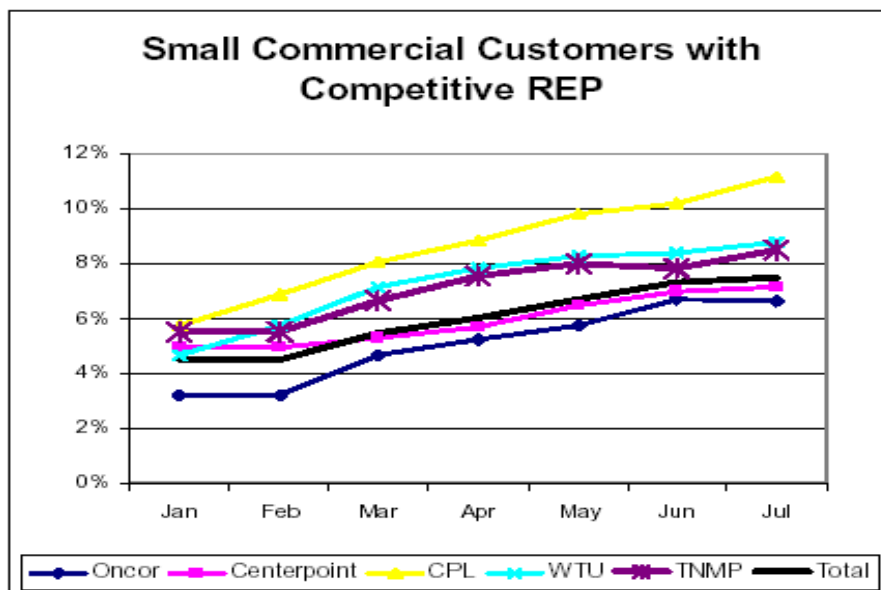
Transmission and Distribution Utility Service Area	Total number of offers	Number of offers from the affiliates of other T&D utilities	Total number of offers below the price to compare	Number of offers below price to compare from other T&D utilities
TXU Electric	13	6	9	5
Reliant Energy	12	6	9	5
Central Power and Light	8	5	4	3
TNMP	6	4	2	2
WTU	6	5	5	5
TXU SESCO	0	0	0	0
Total	45	26	29	20

Texas



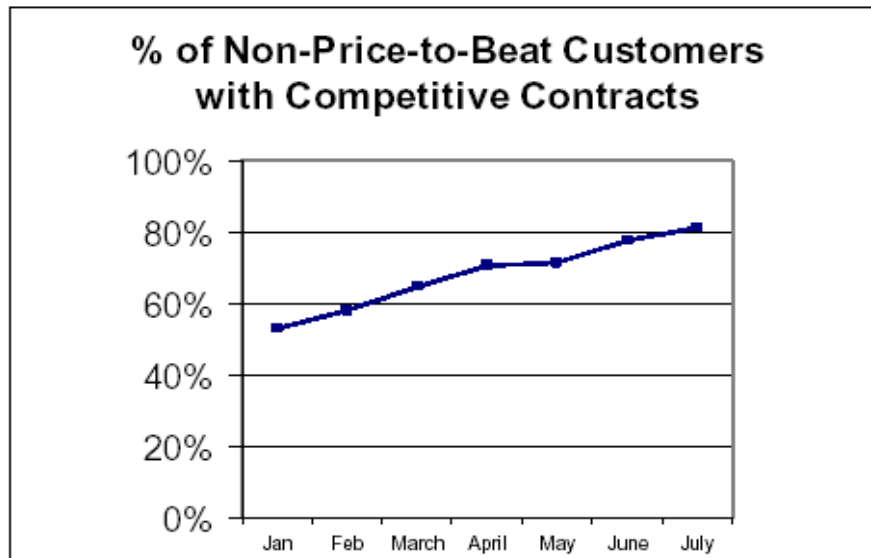
Public Utility Commission of Texas, September 2002 Report Card on Competition

Texas (continued)



Public Utility Commission of Texas, September 2002 Report Card on Competition

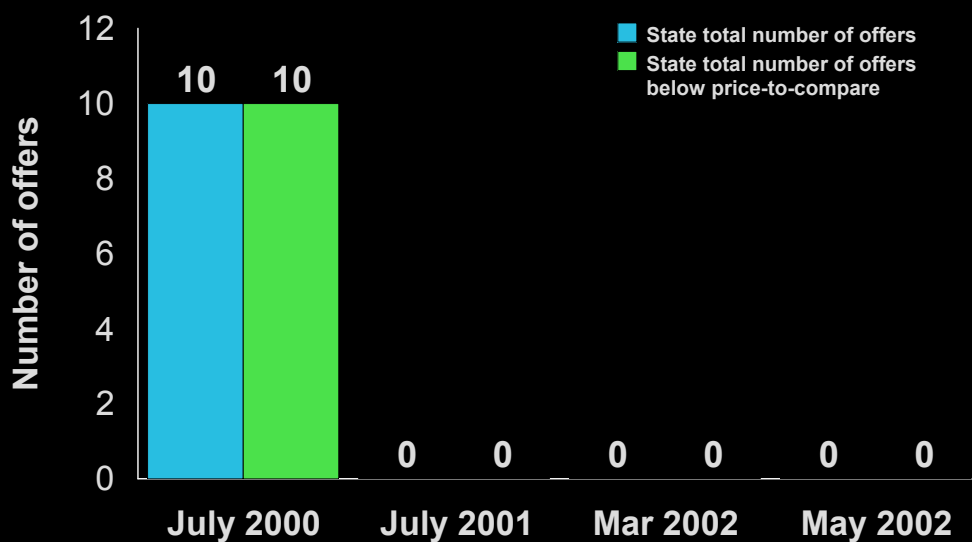
Texas (continued)



Public Utility Commission of Texas, September 2002 Report Card on Competition

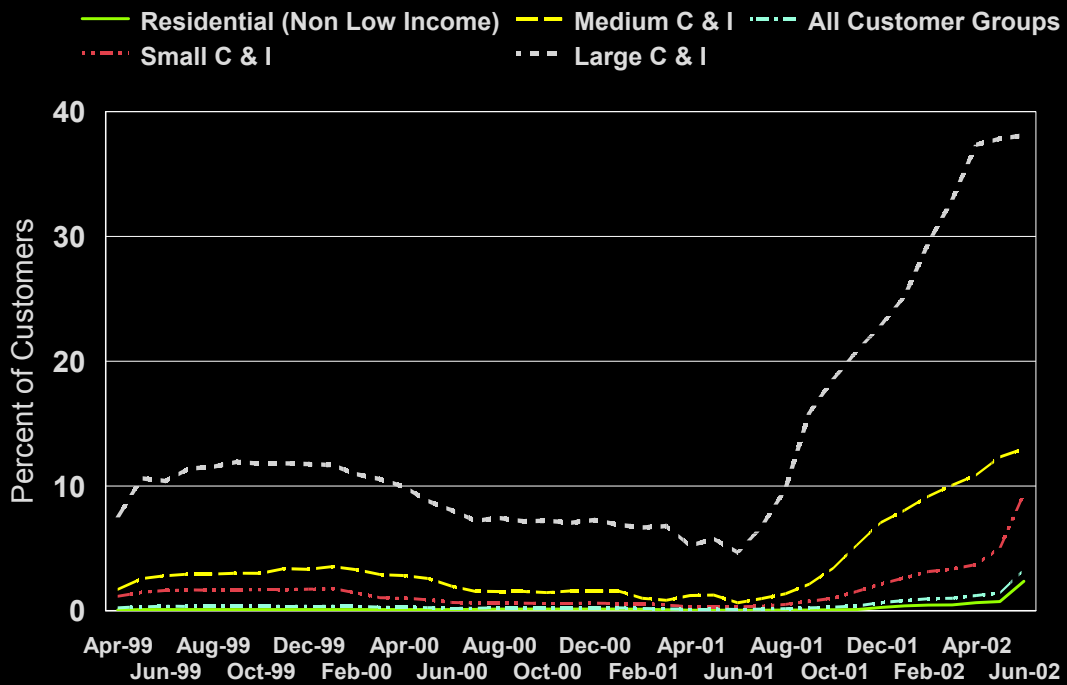
Review of Northeast States

Massachusetts statewide residential offers



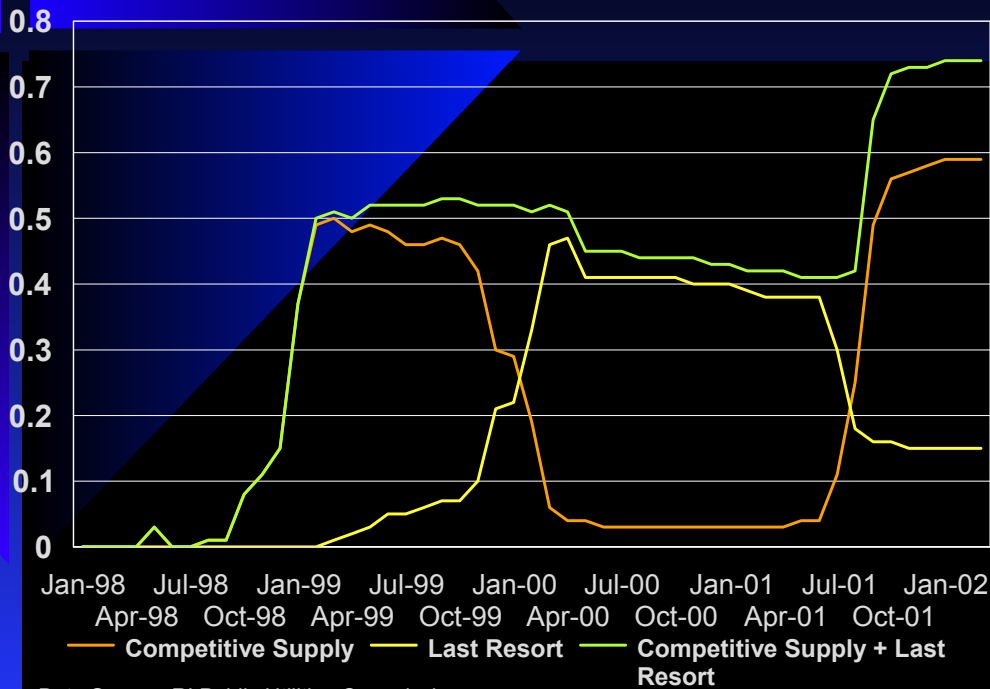
Data Source: Wattage Monitor (<http://www.wattagemonitor.com>)

Massachusetts Customers Choosing a Competitive Supplier



Source: Massachusetts Division of Energy Resources

Rhode Island Customer Migration



Data Source: RI Public Utilities Commission

Rhode Island Load Migration

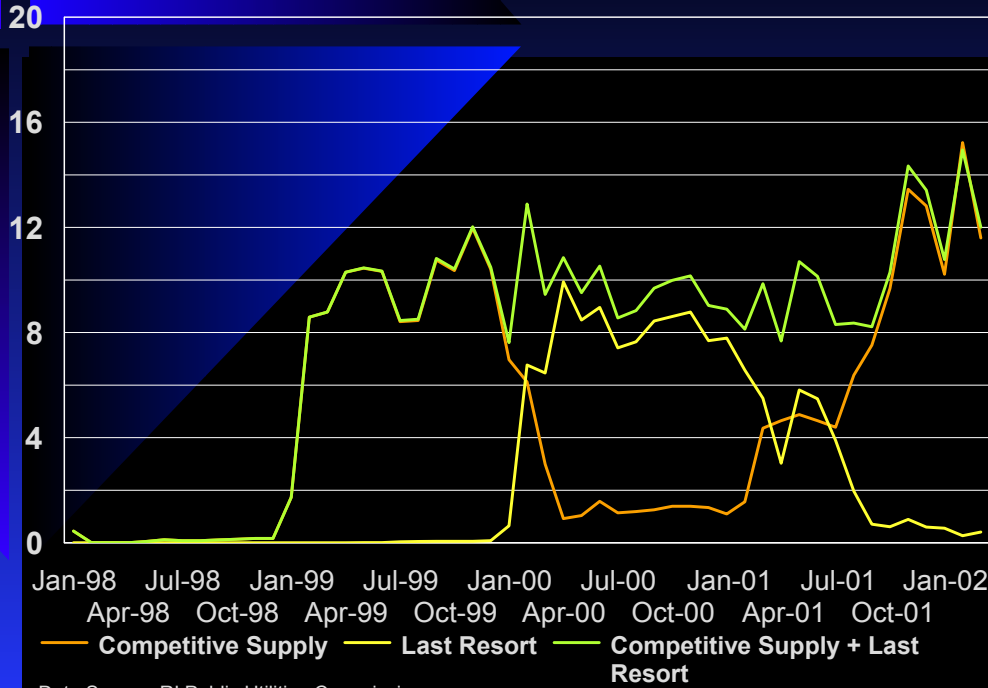


Fig 15. California Power Prices

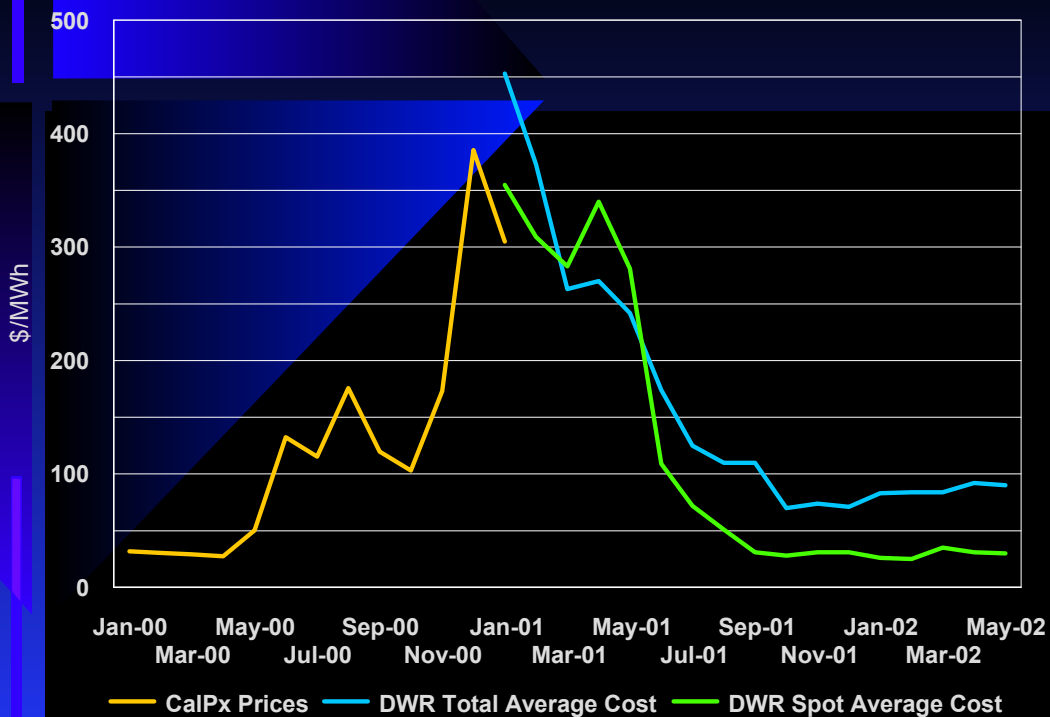
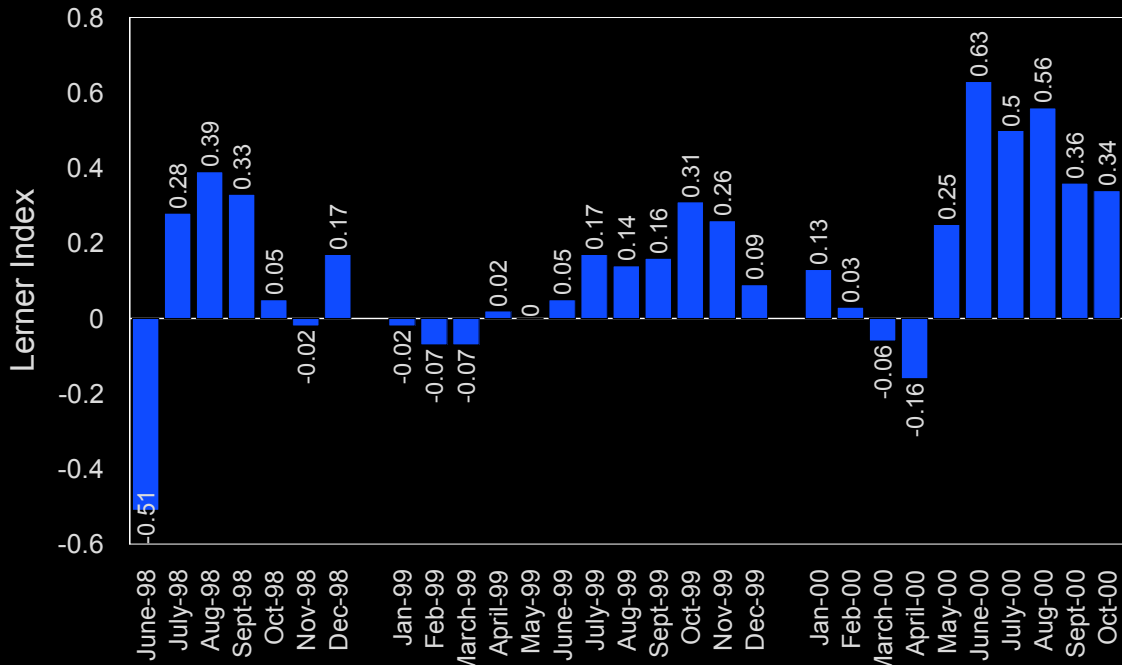


Fig 16. California monthly Lerner Index for June 1998 through October 2000



Source: Borenstein, Bushnell, and Wolak, "Measuring Market Inefficiencies in California's Restructured Wholesale Electricity Market," June 2002.

Fig 17. The relationship between the level of demand and the Lerner Index for California

Source: Borenstein, Bushnell, and Wolak, "Measuring Market Inefficiencies in California's restructured Wholesale Electricity Market," June 2002

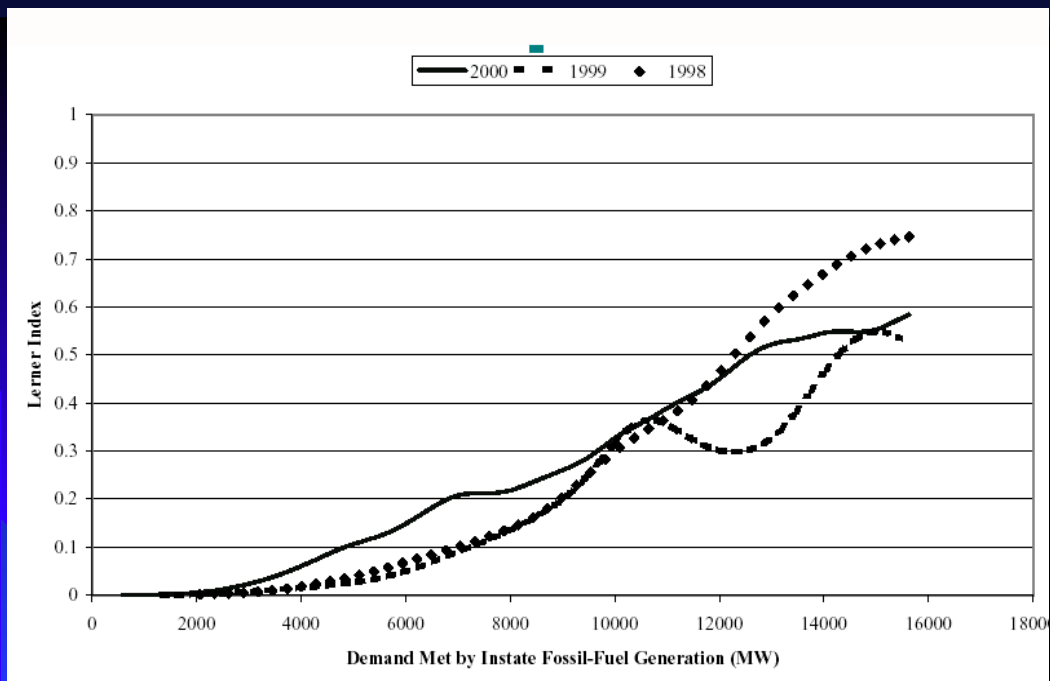


Figure 18. Price-cost markup of forward and real-time energy

Source: California Independent System Operator

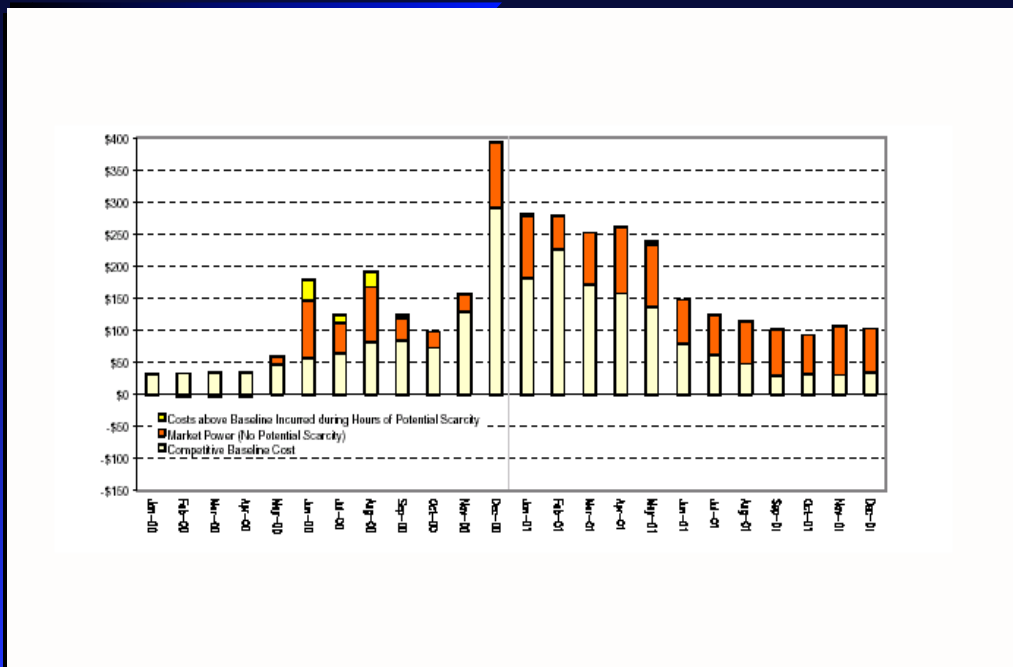


Figure 19. Price-cost markup in the real-time energy market.

Source: California Independent System Operator

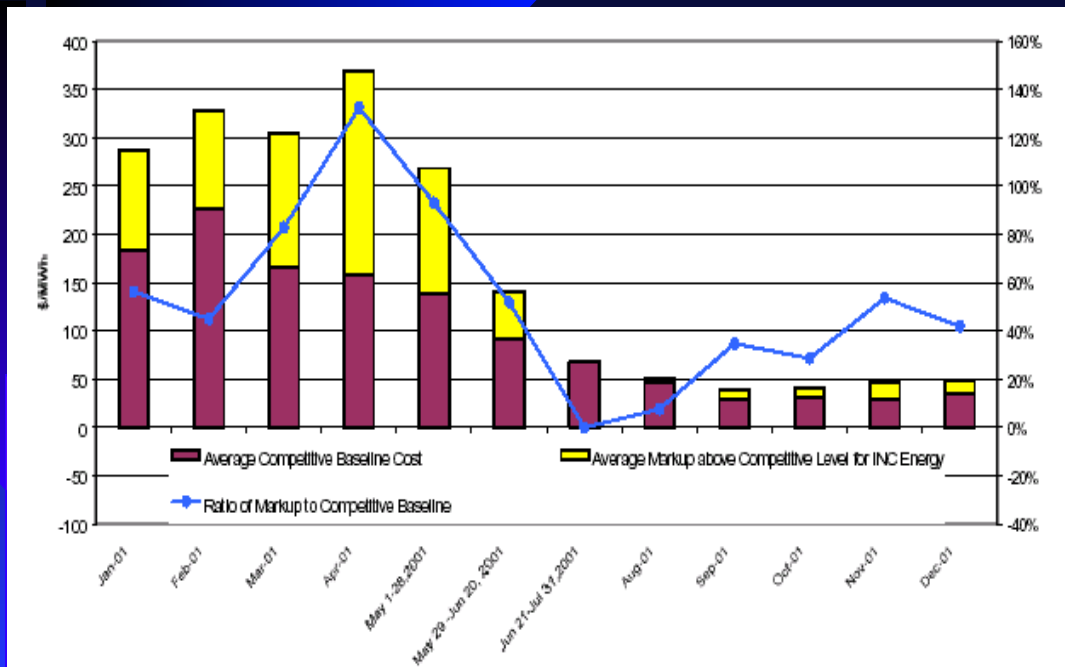
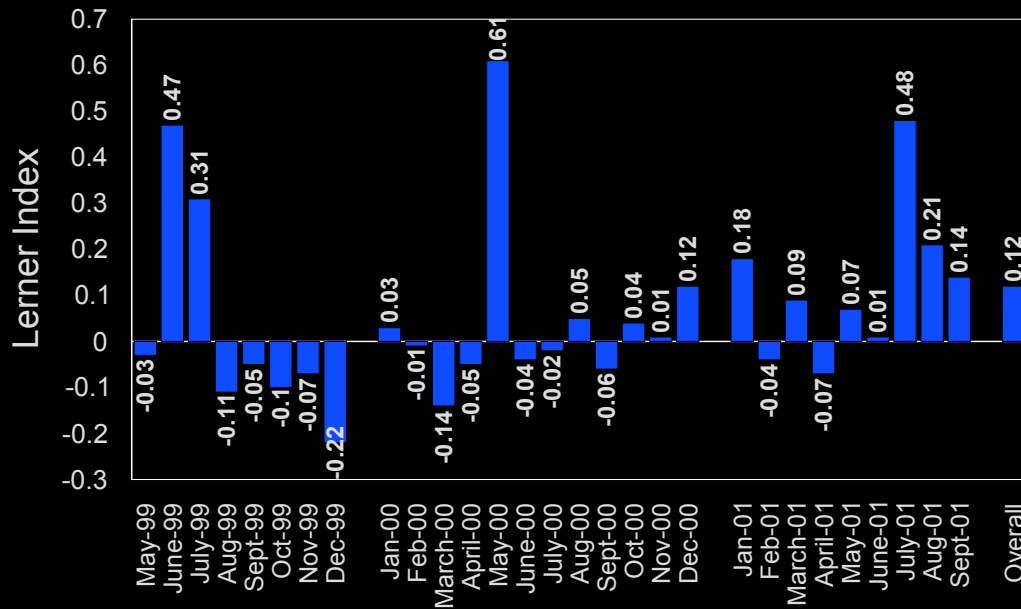


Figure 20. Monthly Lerner Index for New England electricity market, May 1999 to September 2001.

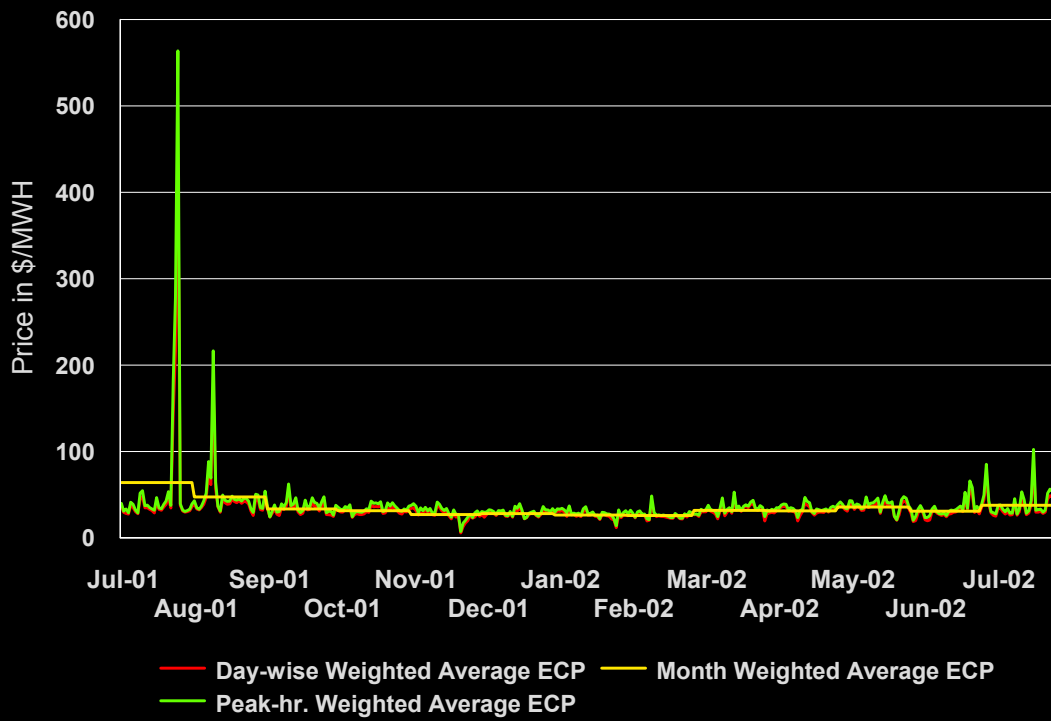


Source: Bushnell and Savaria, "An Empirical Assessment of the Competitiveness of the New England Electricity Market," May 2002

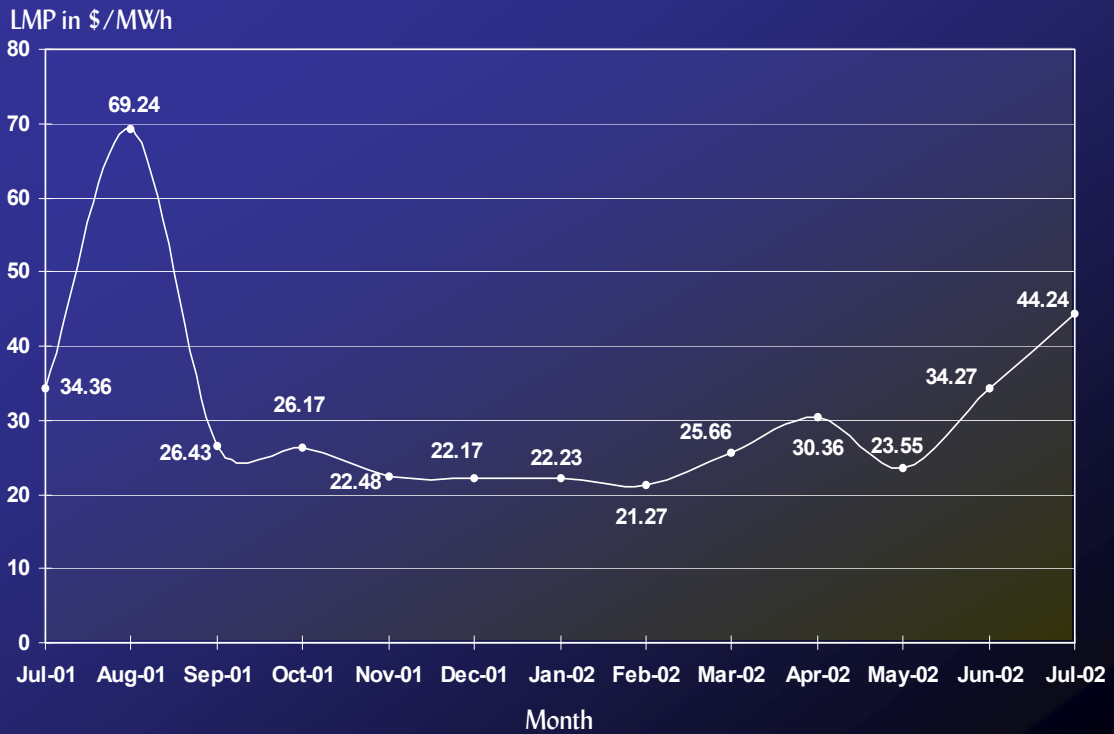
NEISO- Weighted Average Energy Clearing Prices



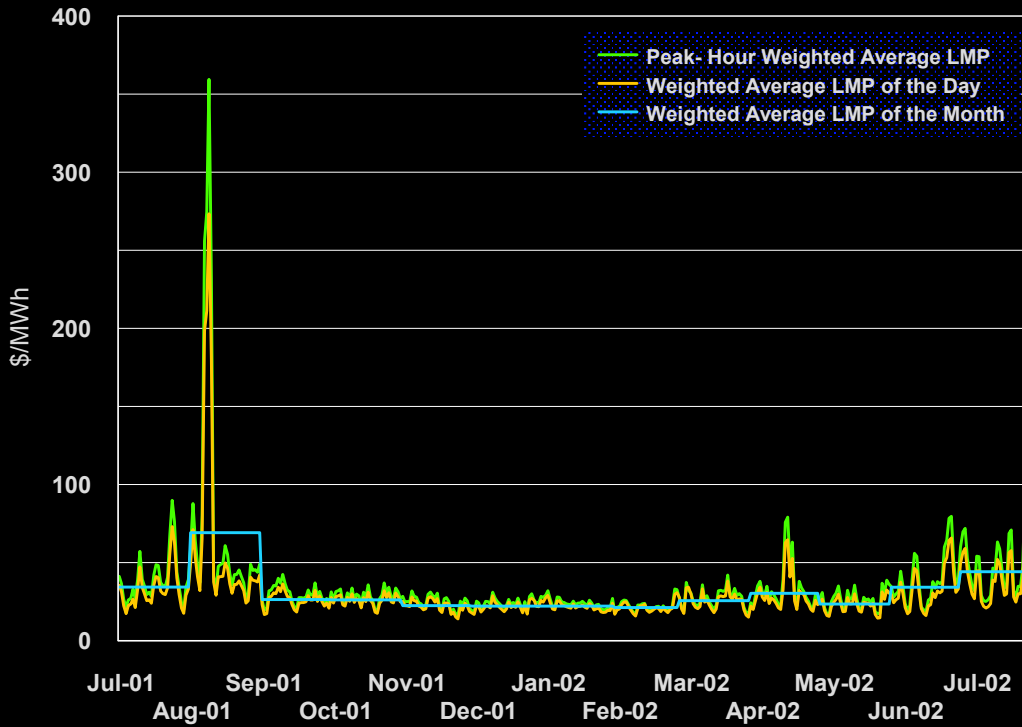
NEISO: Energy Clearing Prices



PJM: Day Ahead Weighted Average LMPs

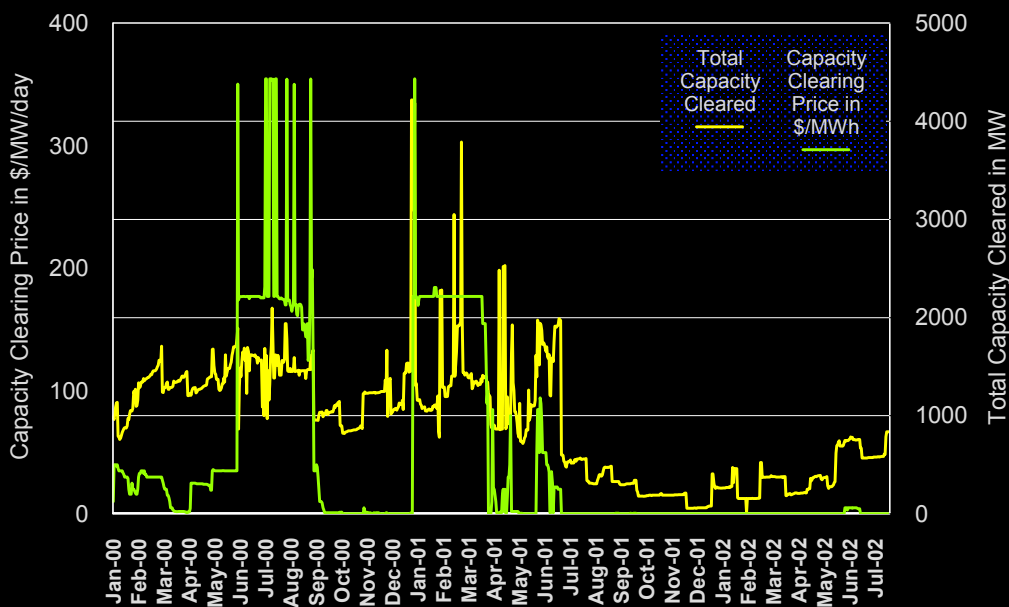


PJM: Locational Marginal Prices



Data Source: <http://www.pjm.com>

PJM Daily Capacity Credit Market



Data Source: <http://www.pjm.com>

NYISO: Weighted Average LBMPs

