Environmental Quality Council
Energy Subcommittee
February 7, 2002
Exhibit 1

Electricity: A Primer, Update and Discussion of Options

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Goals for the Day

1. Understand legal history and institutions governing the U.S. power industry.
2. Understand the background for restructuring of the U.S. and Montana Power industry.
3. Understand wholesale power markets and institutions.
4. Understand federal initiatives currently underway.
5. Understand your options as state policymakers.

A Little Federal History

- Federal laws and regulations to know about:
  - The Federal Power Act
  - The Public Utility Regulatory Policies Act
  - The FERC Orders
    - » 888 and 2000

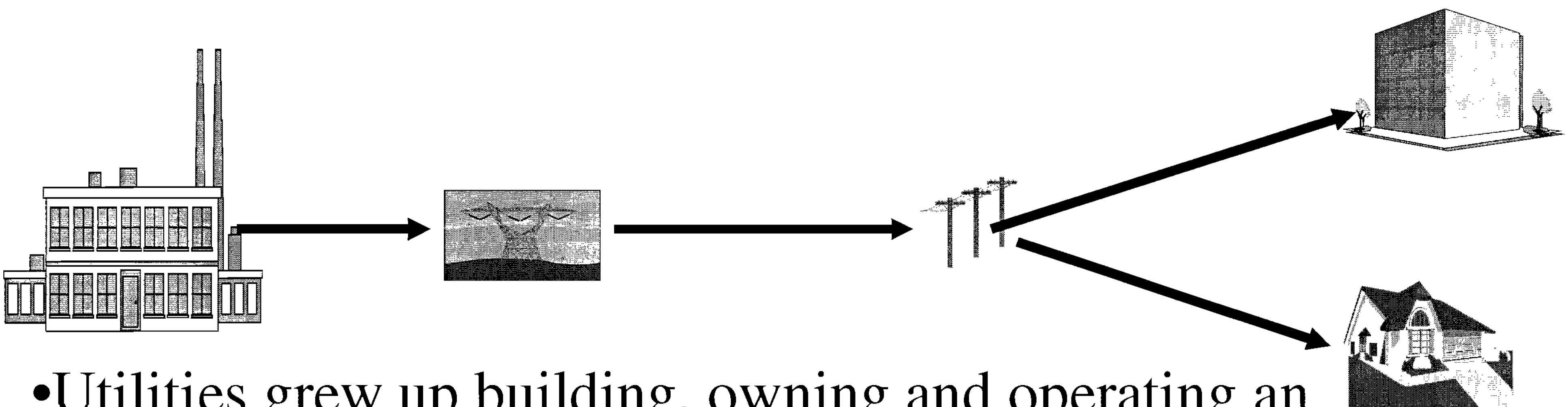
The Federal Power Act

- Defined the federal government's role in regulating the electric utility industry.
- This role has been further defined in court cases in the last half-century and more.
- Established what later became the Federal Energy Regulatory Commission.

Electric Industry Jurisdiction

Generation ***Transmission*** ***Distribution***

"Bundled" rate = $0.075/kWh

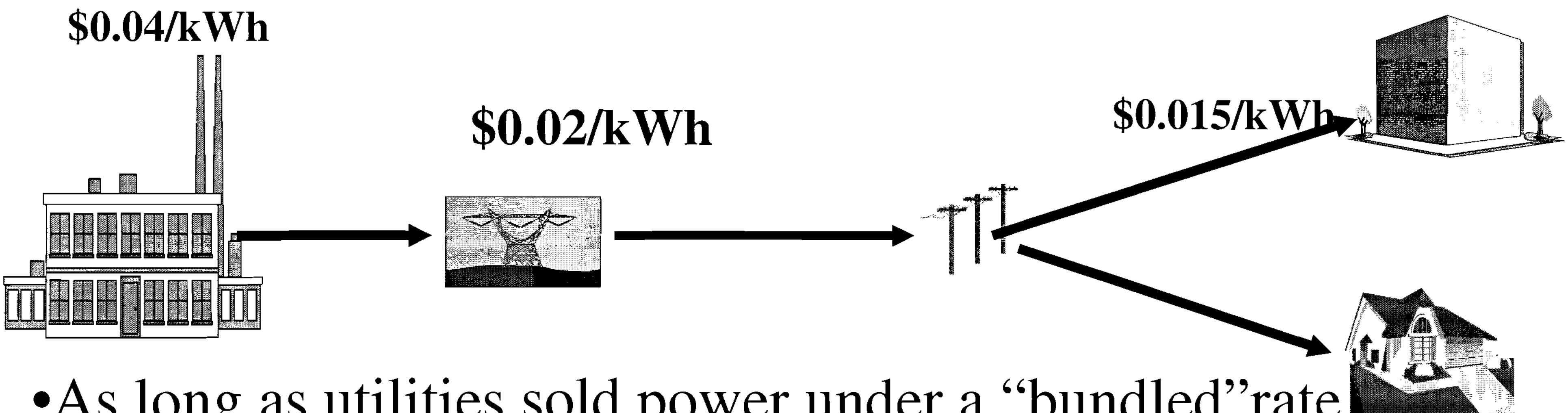


•Utilities grew up building, owning and operating an integrated generation, transmission and distribution system.

•Utilities charged one "bundled" rate for a combination of generation, transmission and distribution services.

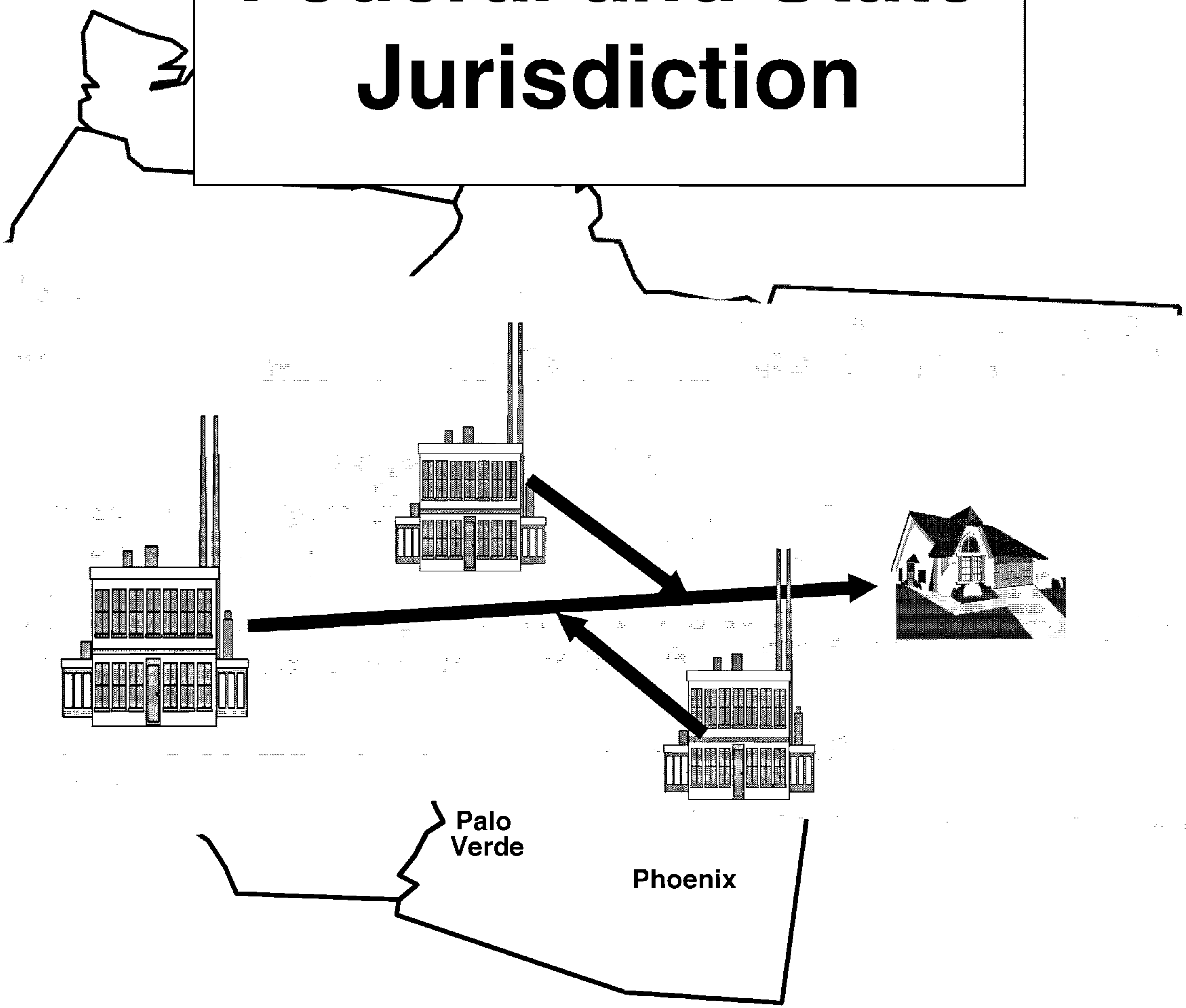
Electric Industry Jurisdiction

Generation ***Transmission*** ***Distribution***

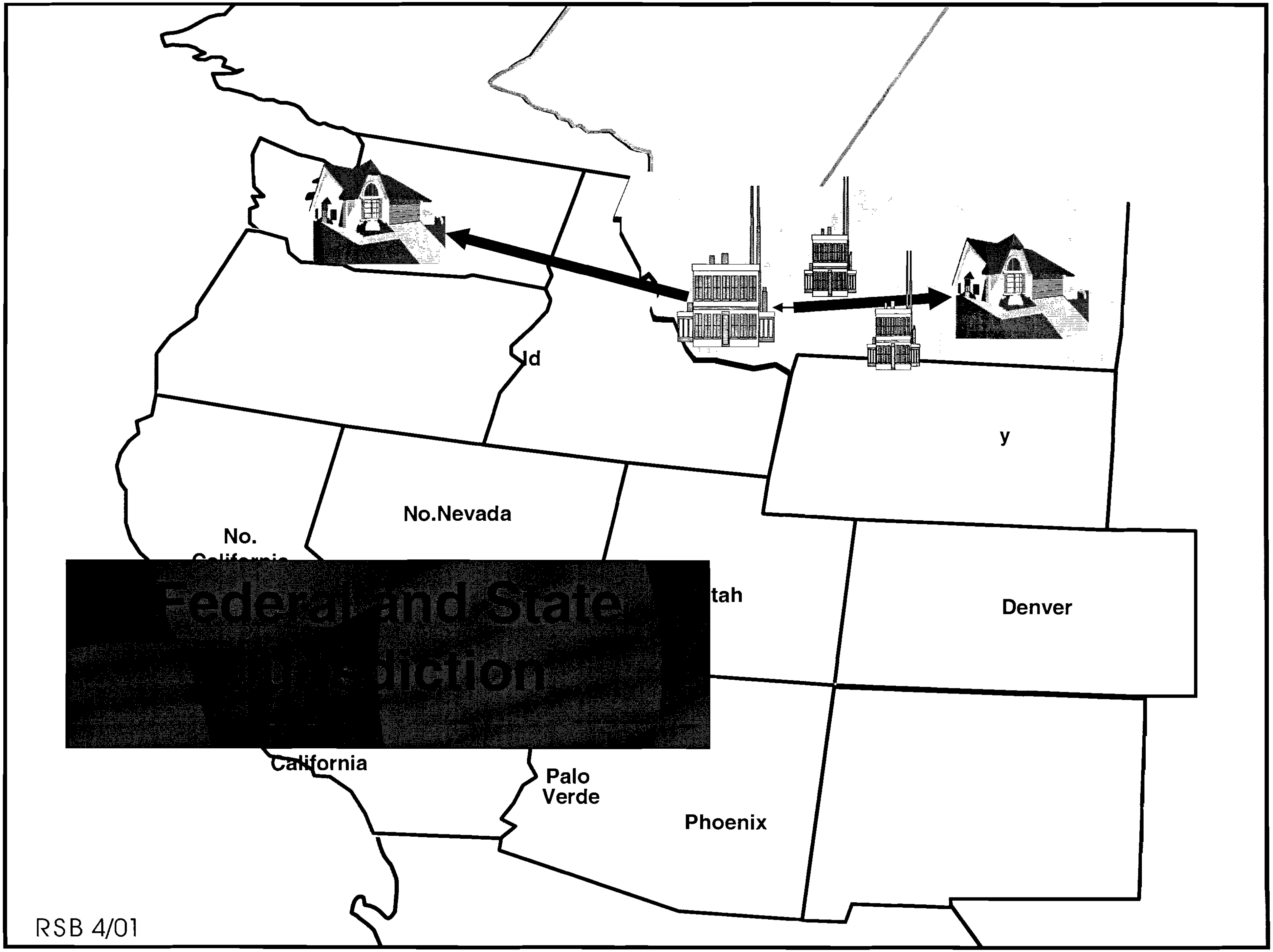


- As long as utilities sold power under a "bundled"rate they fell under state jurisdiction. "Unbundled" sales (selling transmission or generation as a separate product) fall under federal jurisdiction.

Federal and State Jurisdiction



RSB 4/01



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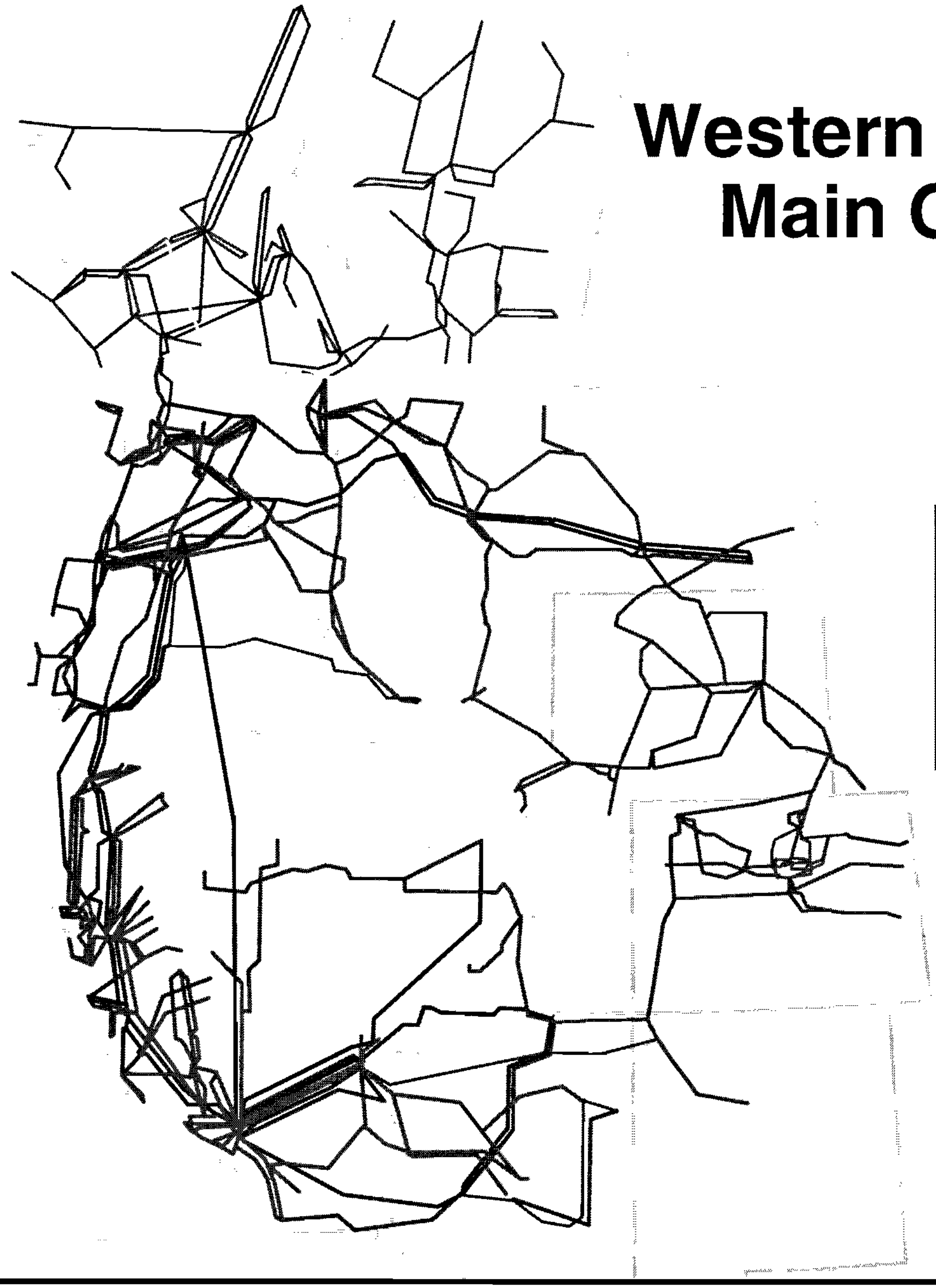
RSB 4/01

Western Transmission Main Grid System



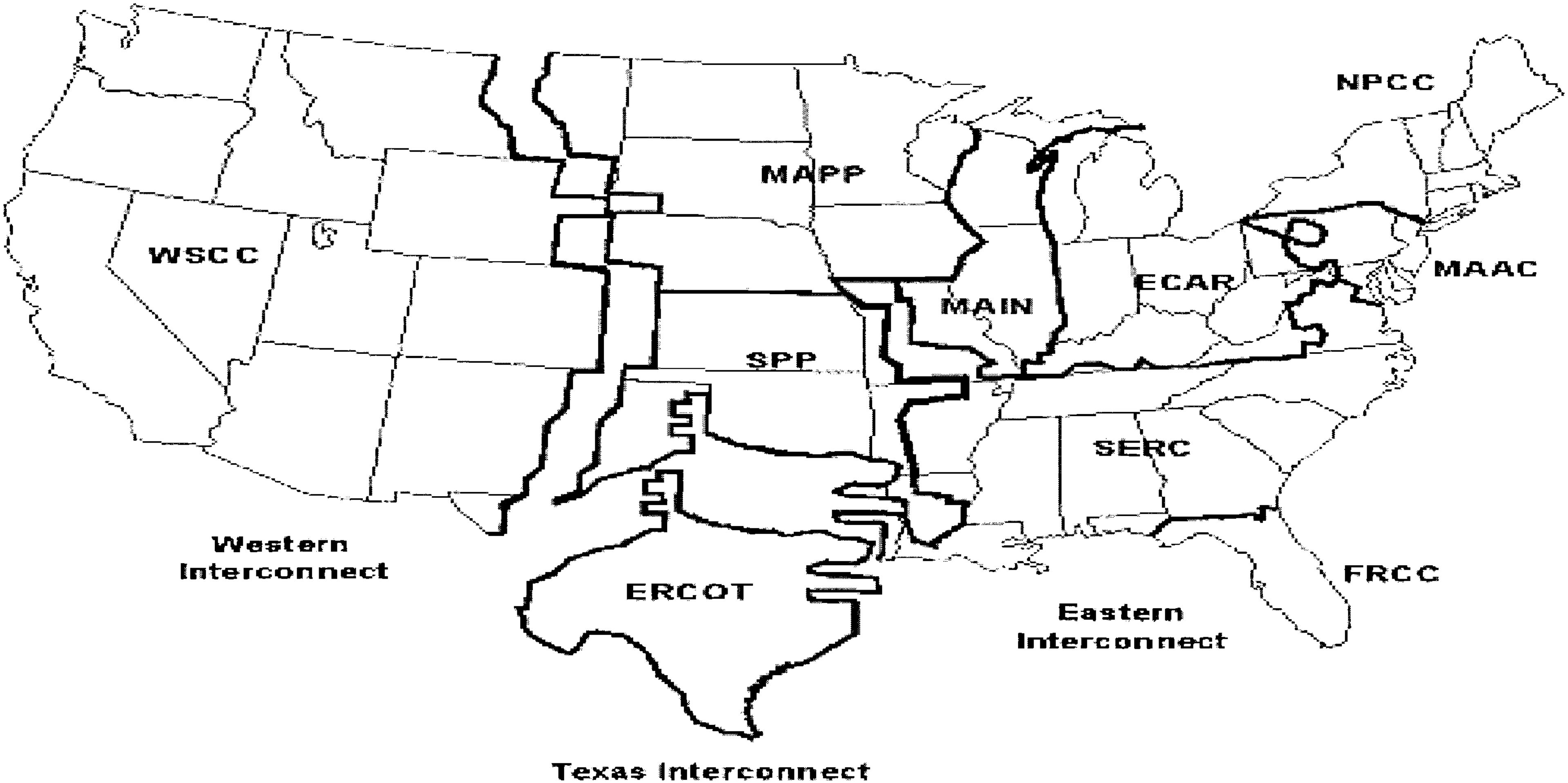
Transmission Voltages

500 kV - Red

345 kV - Green

230 kV & below - Blue

System Interconnections



The Public Utility Regulatory Policies Act (PURPA)

Was designed to encourage new, small-scale efficient non-utility generation.

PURPA was a reaction to the energy crises of the 1970s. It was an attempt to encourage energy independence and move from fossil fuels.

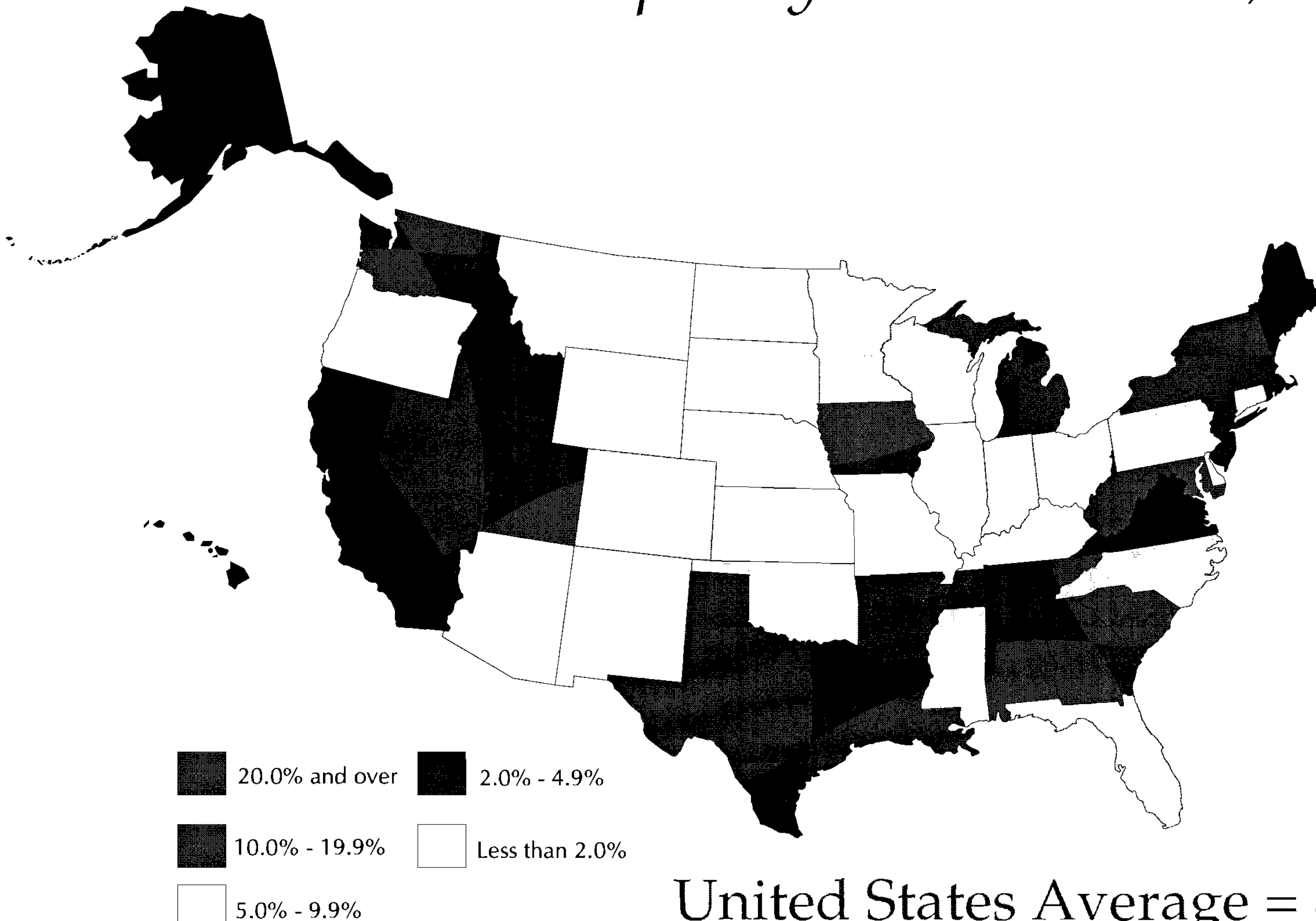
PURPA

PURPA required utilities to buy energy from small, non-utility power generators.

These energy purchases were generally through long-term contracts.

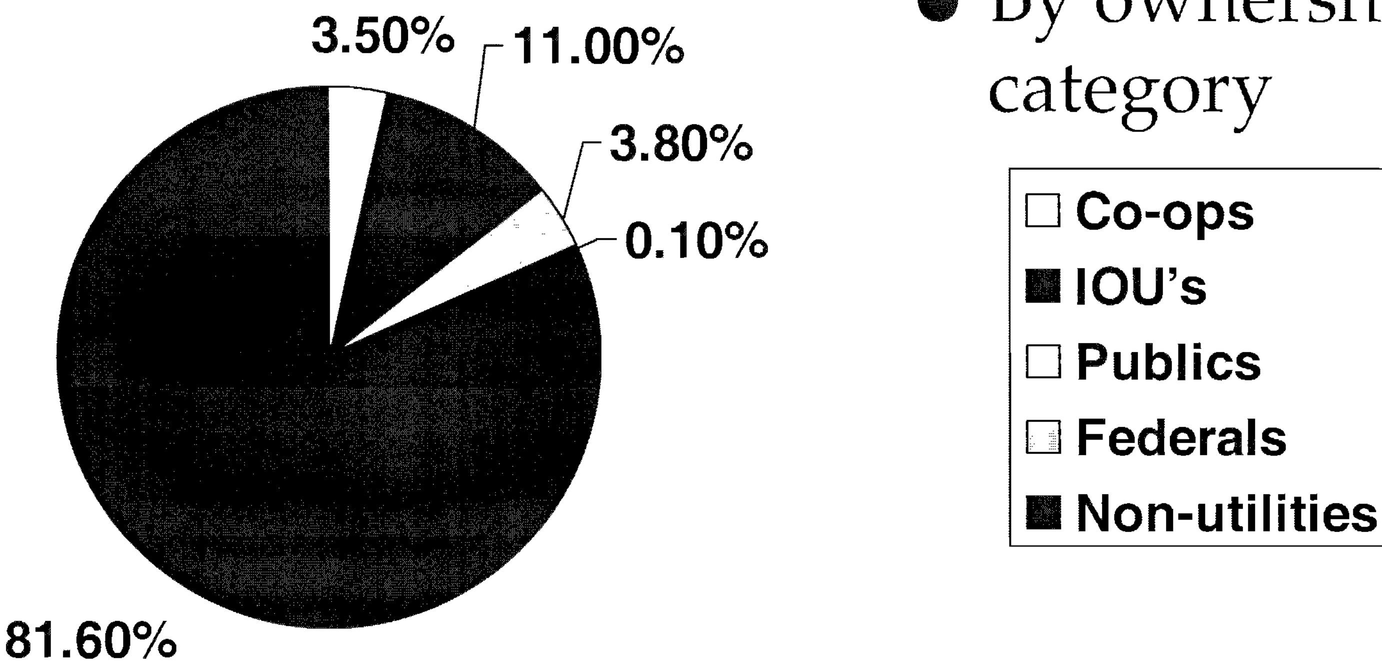
Many states set up their own "mini-PURPA" laws.

Non-Utility Capacity by State as a Percent of Each State'sTotal Capacity - December 31, 1994



United States Average = 8.0%

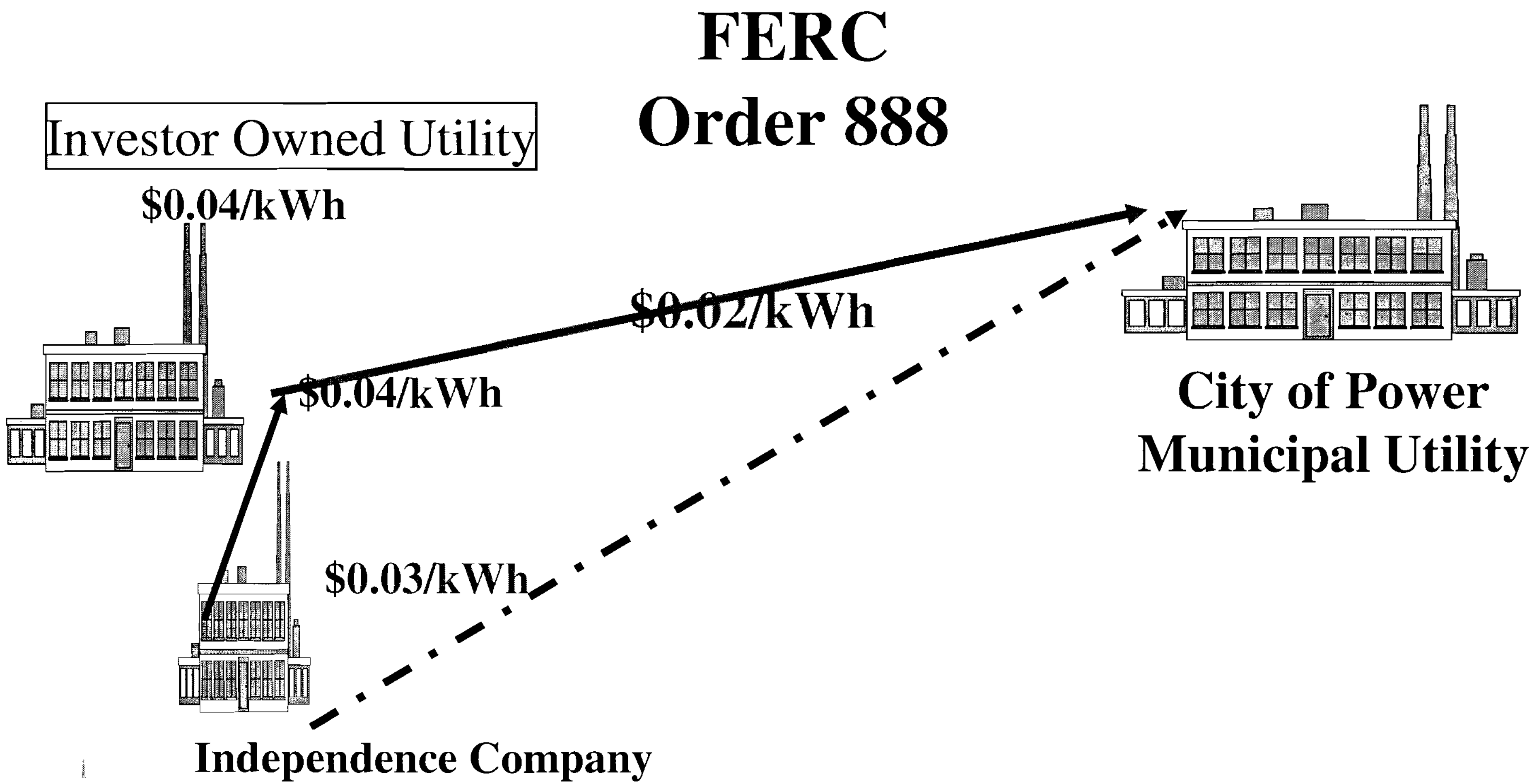
1998 Capacity Additions (6,674 Megawatts)



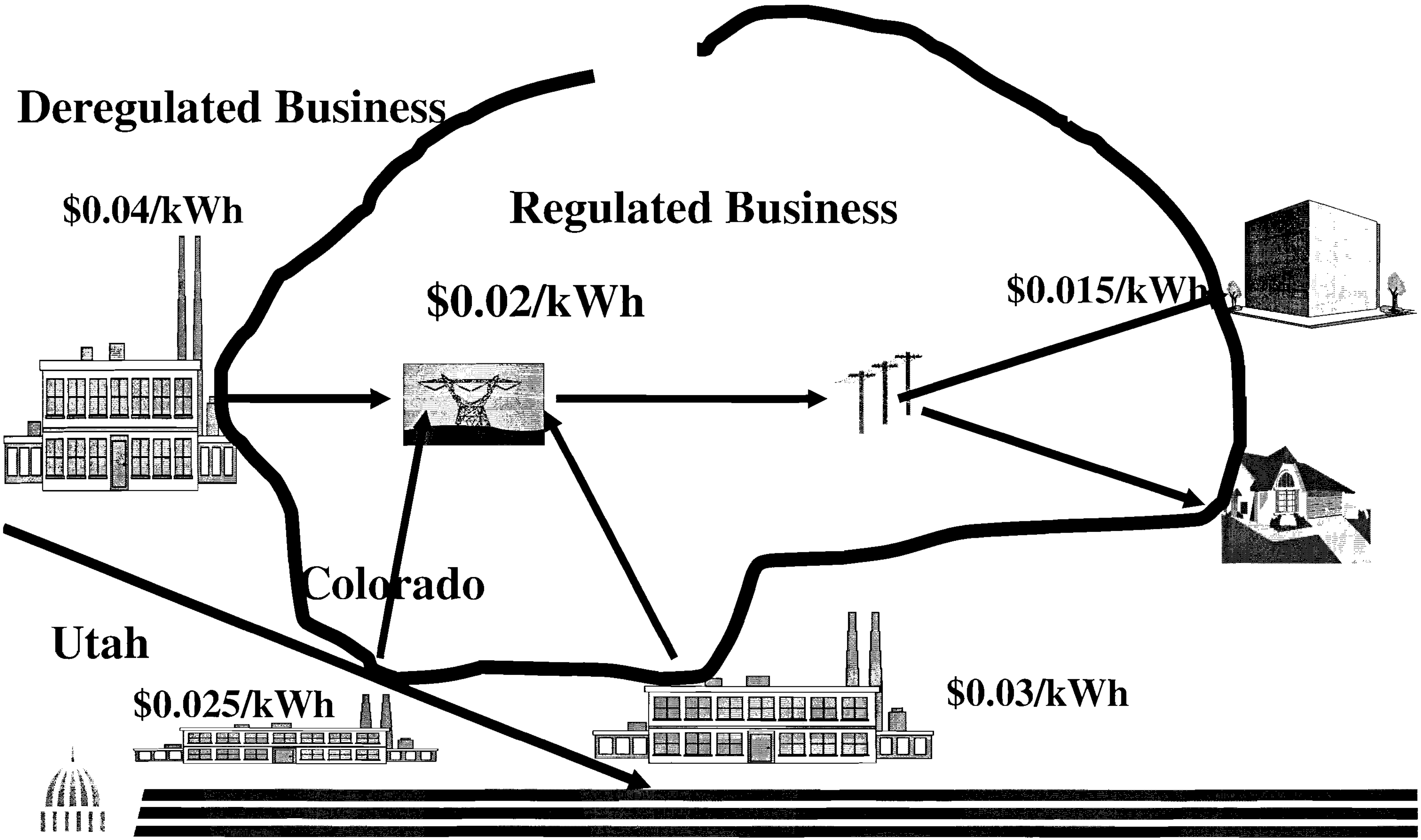
- By ownership category

Non-utilities now build the bulk of new generation.

Wholesale Restructuring Defined



Retail Restructuring Defined



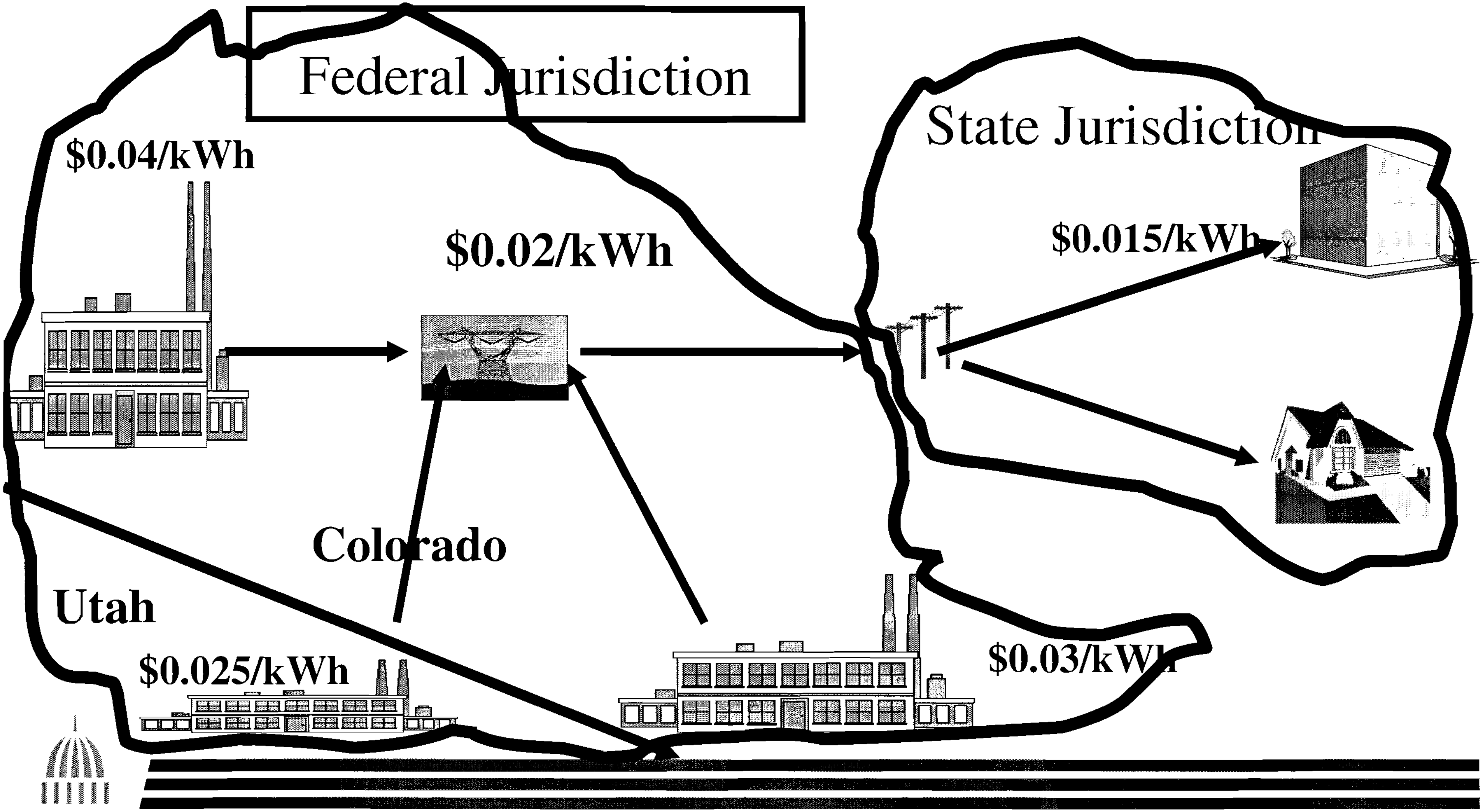
We Shouldn't Call it Deregulation

•The Federal government still regulates generation. But gives "Market Based Rate Authority" to certain generators in certain markets.

…If those markets are deemed competitive.

•The Federal government still regulates transmission …but loosely, and by delegation to regional entities. But it delegates under its own terms.

Retail Restructuring Defined



Energy Statement

JANE SAMPLE
JJQ 99 99999-9

ELECTRIC ACCOUNT DETAIL

Rate Schedule: E1 XB   Bundled Service

Service: From 05/11/98 To 06/10/98   Billing Days: 30   Electric Meter #: J99999

	Prior Meter Read	Current Meter Read	Difference	Constant	Usage
ELECTRIC	86467	86967	500	1	500 Kwh

Total Electric Charges	$60.99
Legislated 10% Reduction	6.10-
Net Charges	$54.89

The net charges shown above include the following components. Please see definitions on Page 2 of the bill.

Electric Energy Charge	$0.02400*	$12.00
Transmission		2.03
Distribution		17.72
Public Purpose Programs		2.10
Nuclear Decommissioning		0.26
Competition Transition Charge (CTC)		12.70
Trust Transfer Amount (TTA)		$8.08

* *This rate is based on the weighted average costs for purchases through the Power Exchange. This service is subject to competition. You may purchase electricity from another supplier.*

State and Federal Control

States Control

- Retail electric prices
- Retail electric use
- Oversight of PUC
- Transmission Siting
- Generation Siting
- Tax Policy
- Renewables/Efficiency Policy

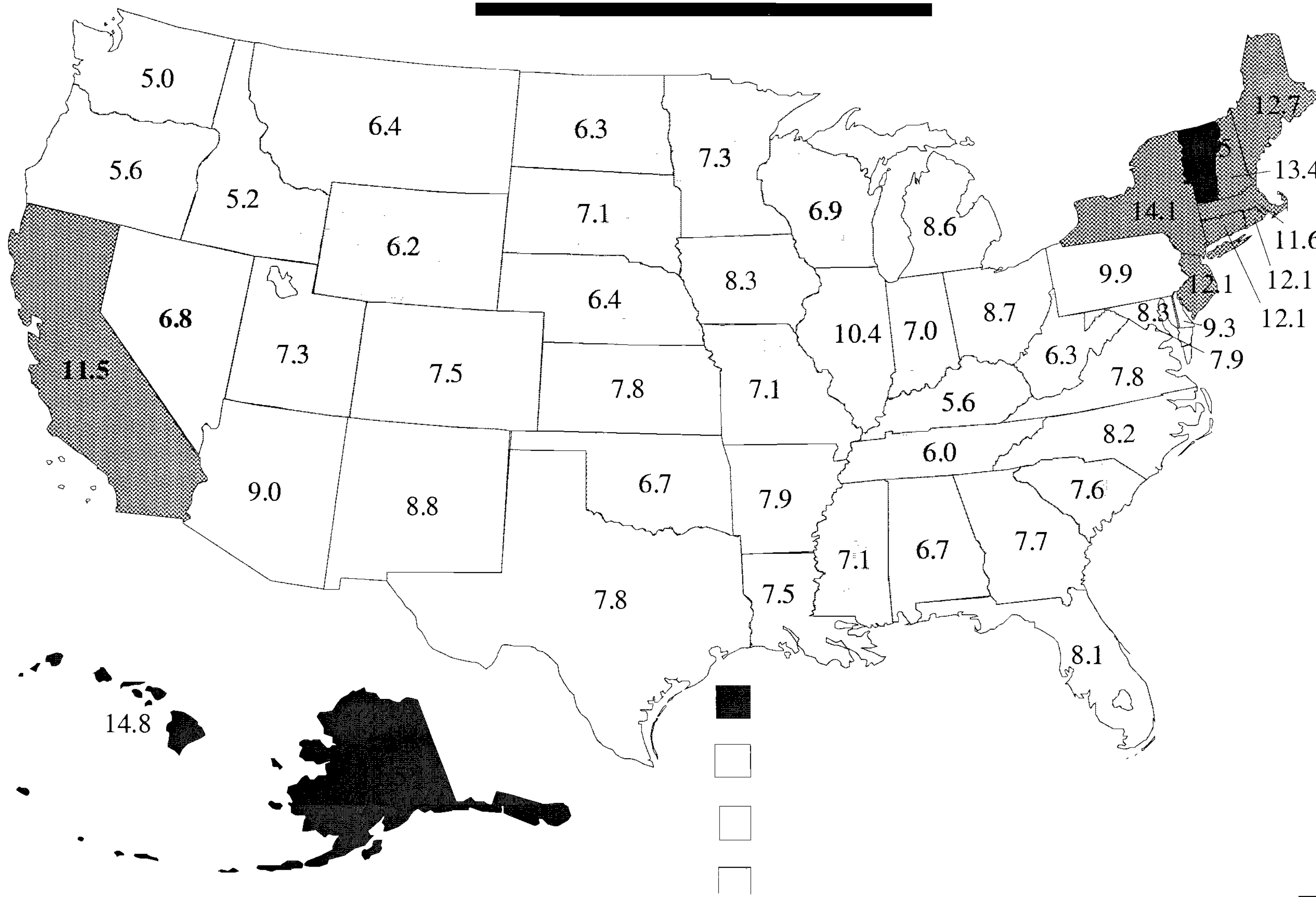
States Don't Control

- Regional wholesale prices
- Wholesale natural gas prices
- Transmission pricing and policy
- Federal regulation of wholesale power markets

Retail Power Markets: Issues and Challenges

Residential Average Rate 1997 (kWh)

Electricity Prices Compared to National Averages

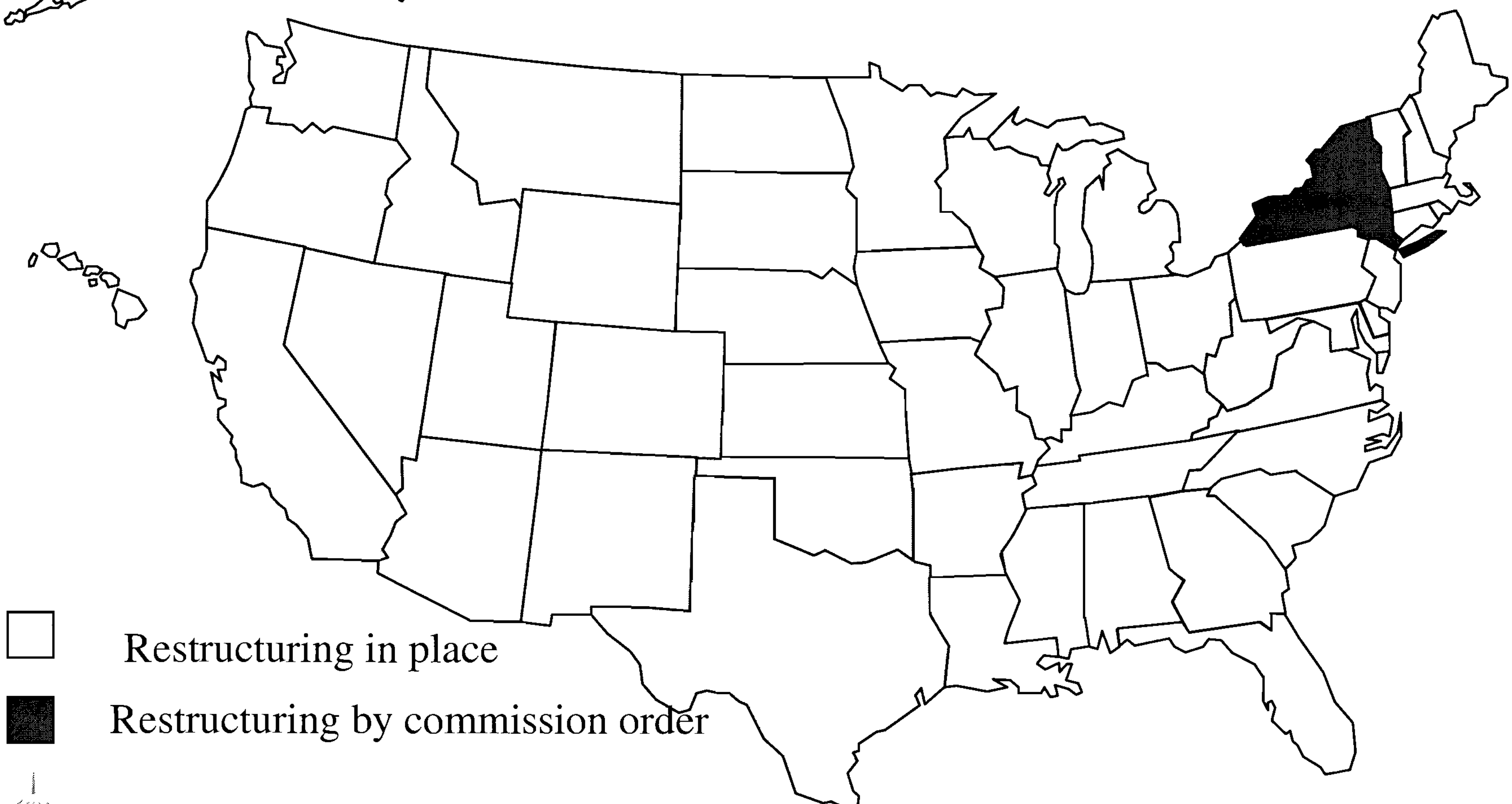


Source: EEI Statistical Yearbook Advance Release

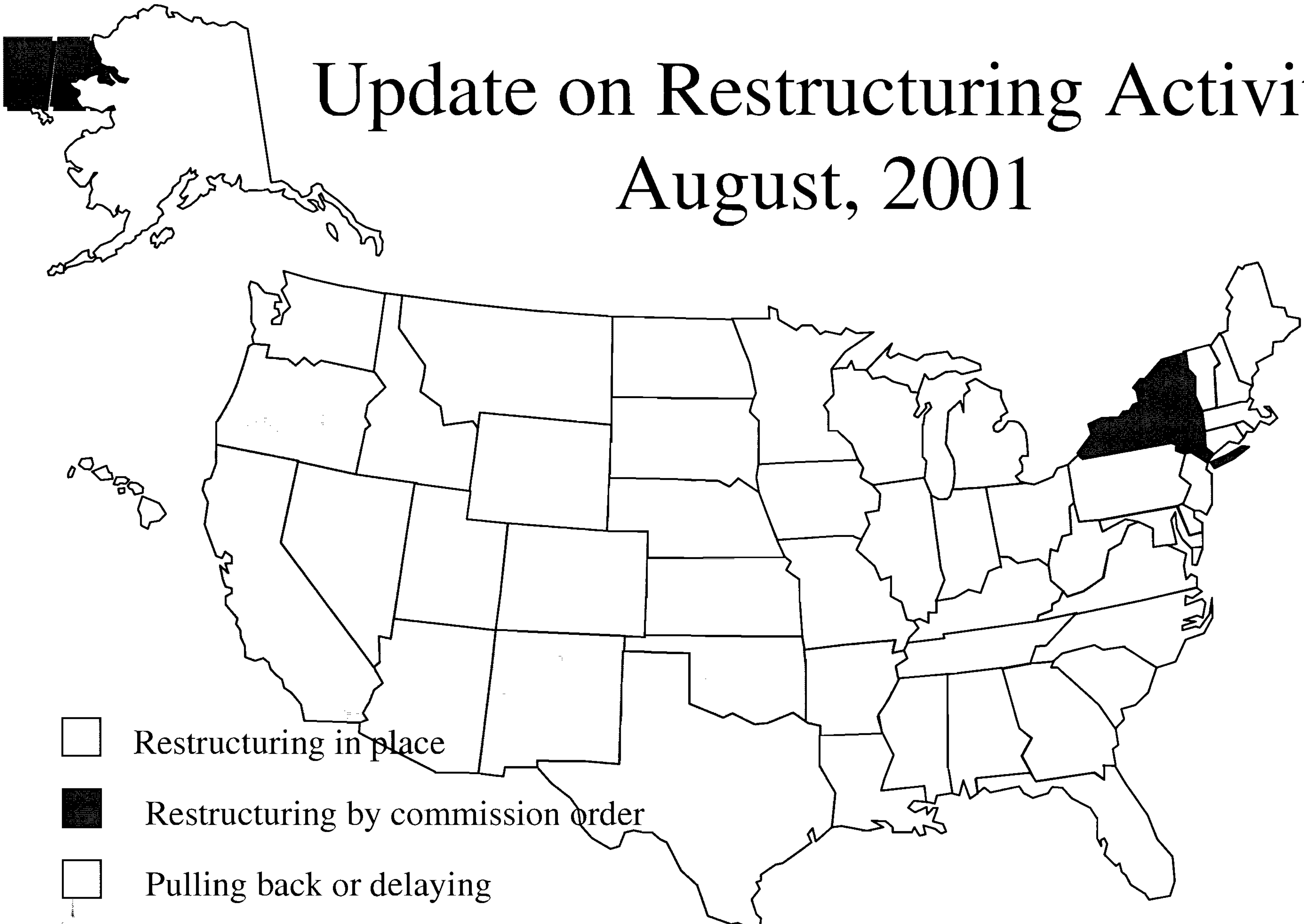
Cross Hatch indicates restructuring

EEI

Update on Restructuring Activity
January 2001



Update on Restructuring Activity
August, 2001



New Structures

- Generation is now being sold or spun off to non-utilities.
- New entities, sometimes utilities sometimes not, are serving the bulk of customers.
- Co-operatives, investor owned utilities, public power now find themselves in competition with one another.

New Structures

- Utilities are merging with one another at an unprecedented rate.
- Utilities are re-creating themselves into different types of corporate structures, so ownership is no longer local or in-state.

Rationale for Retail Competition

Competition among electricity suppliers will lead to new products, new services, more efficient production and lower prices.

Barriers to Competition

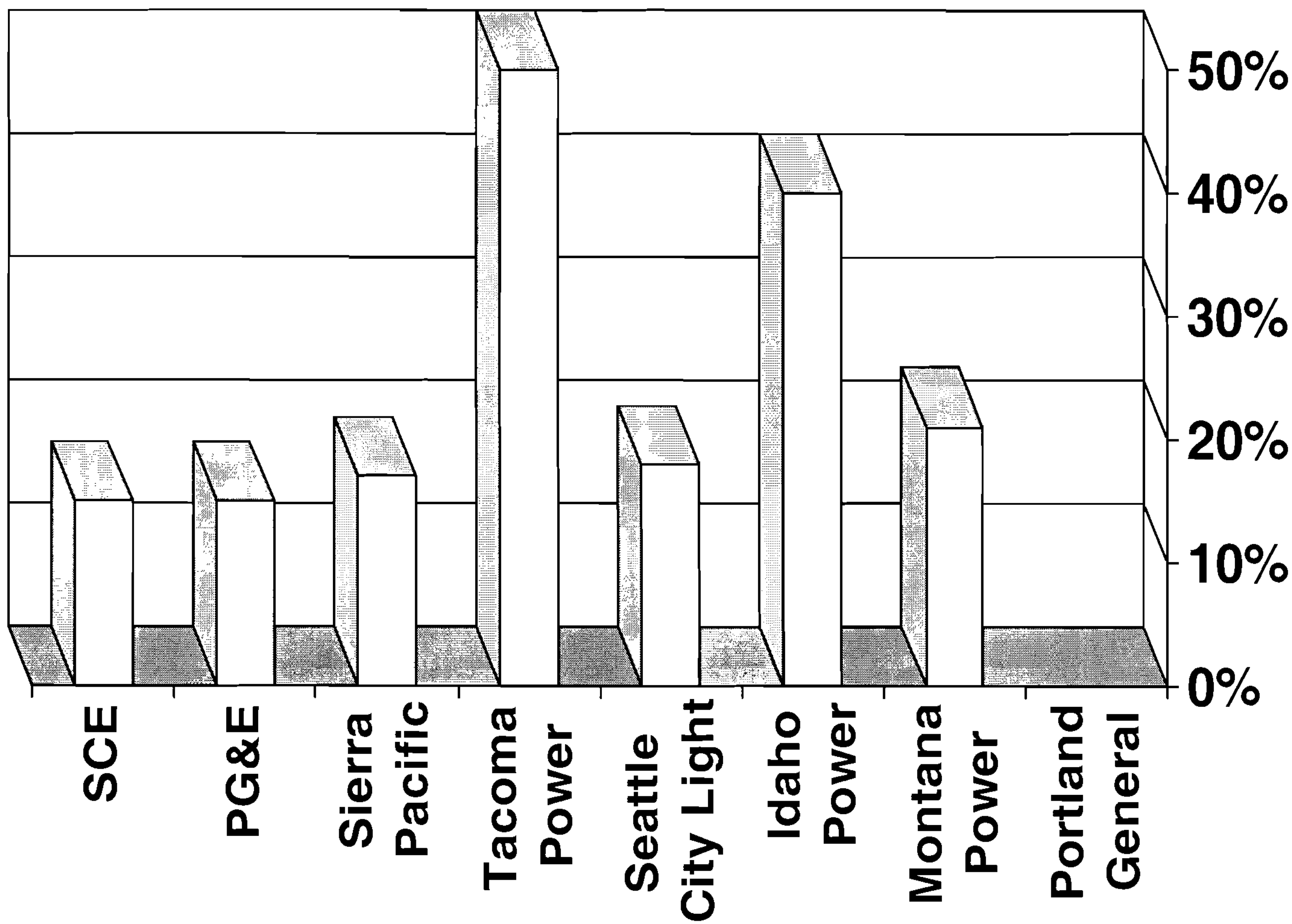
Competition in retail markets will work only if wholesale markets work. In general wholesale markets are not yet working well.

Most of the changes in the electric industry that have occurred thus far have occurred because of WHOLESALE competition, not retail competition.

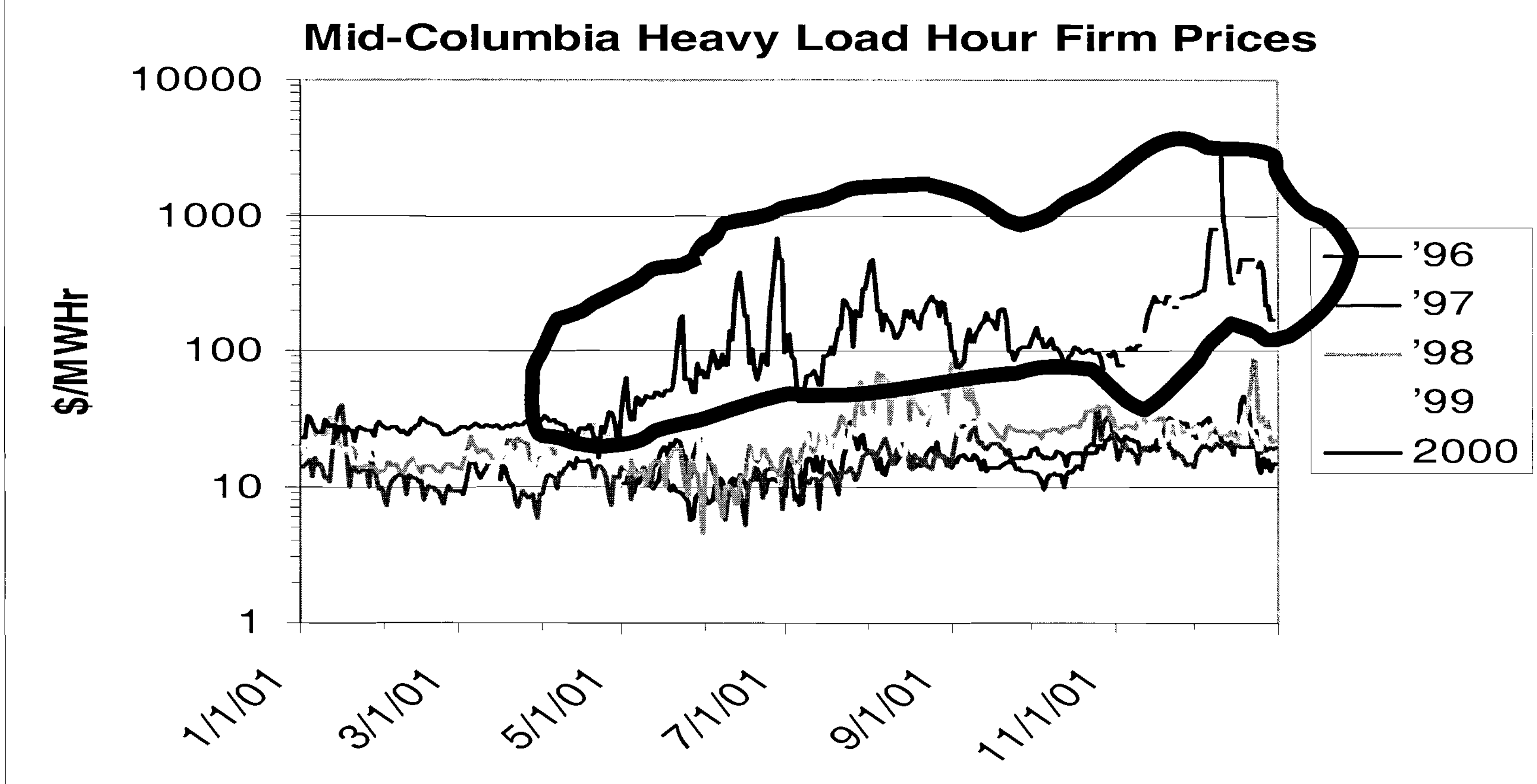
What Happened to Prices in the Summer of 2000?

- San Diego Electricity Prices for All Customers Rose by 200%-300%.
- Montana Electricity Prices for Some Large Industrial Users Rose Substantially
- Prices for New York City Electricity Customers Rose by Up to 40%.

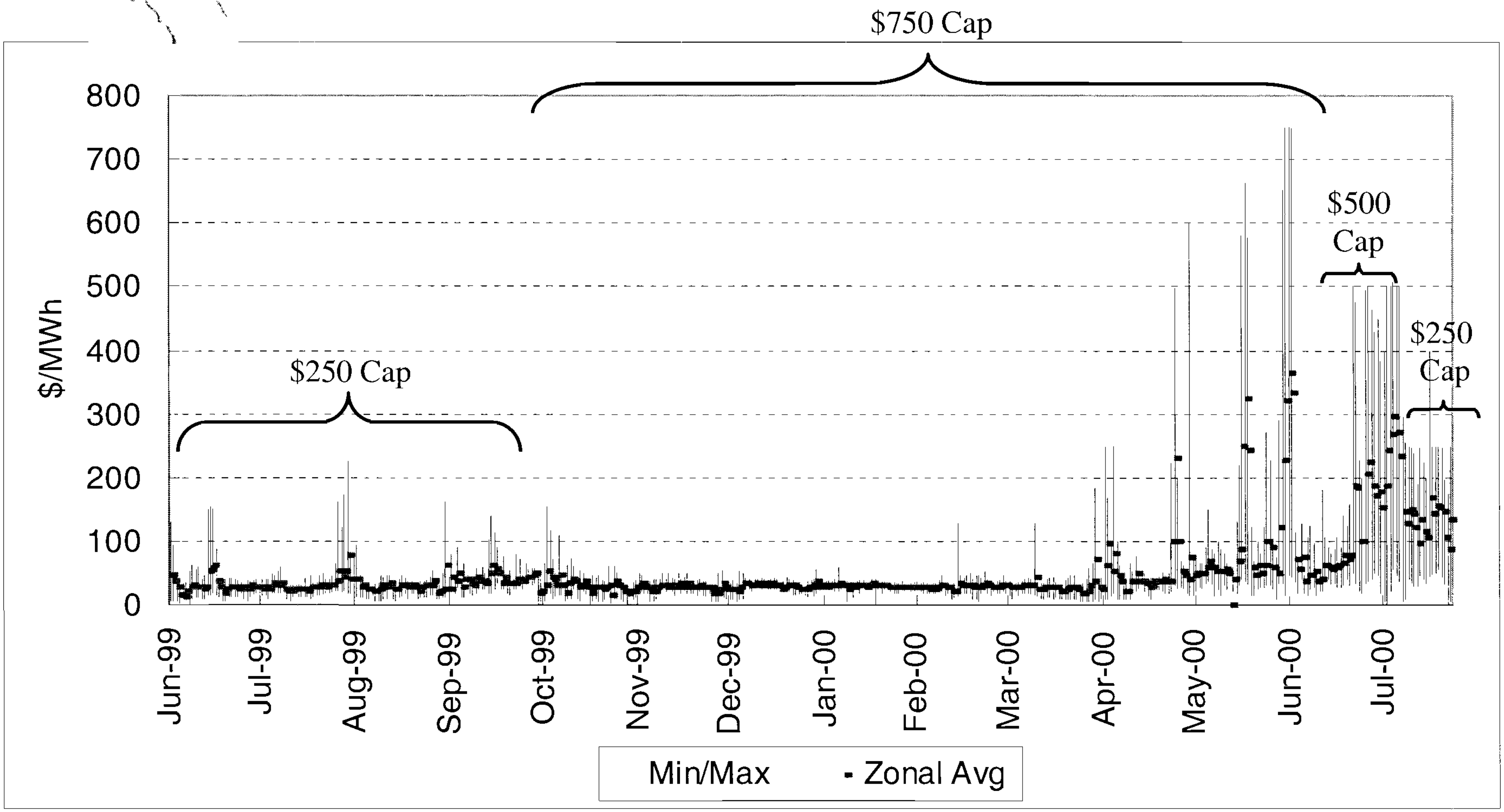
Retail Electric Rate Increases



Wholesale Electricity Prices Last Year in the West

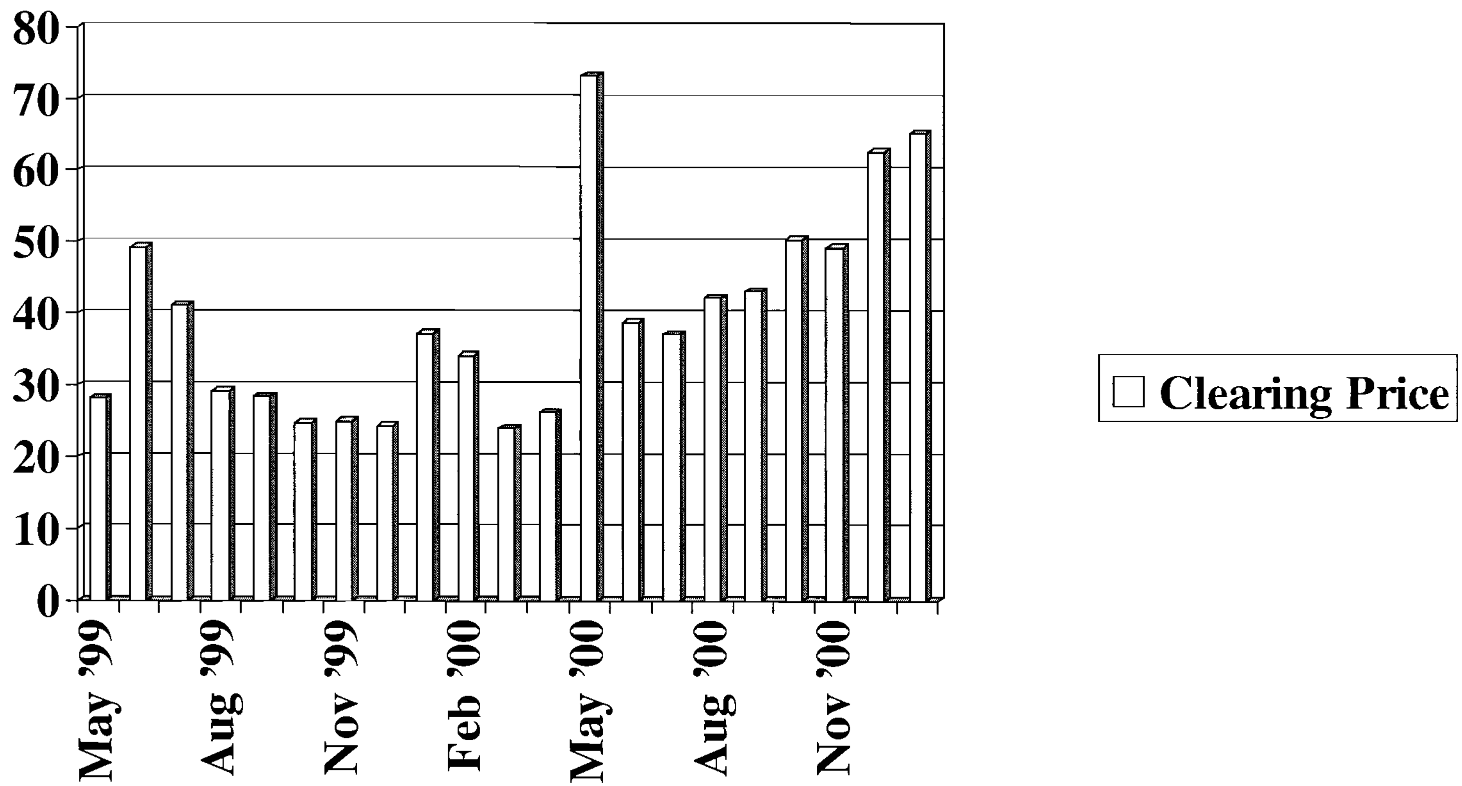


PX Day-Ahead Electricity Prices

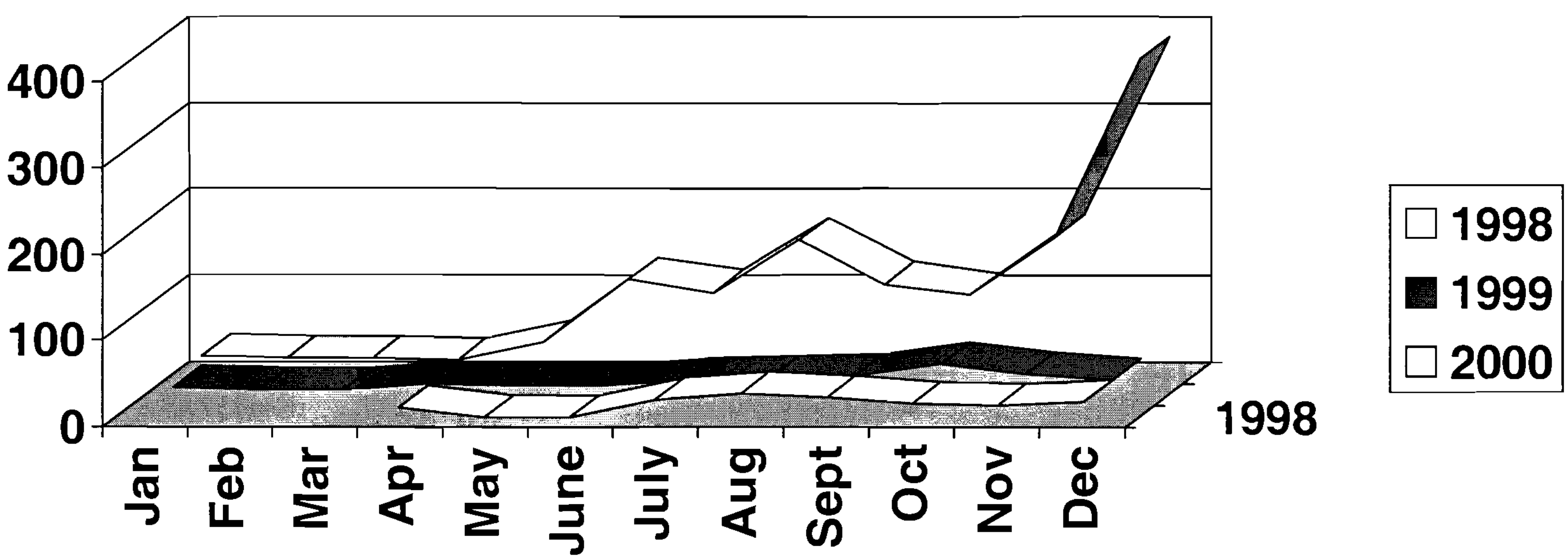


- PX SP15 zonal prices
  - SCE and SDG&E purchase day-ahead electricity at the SP15 price

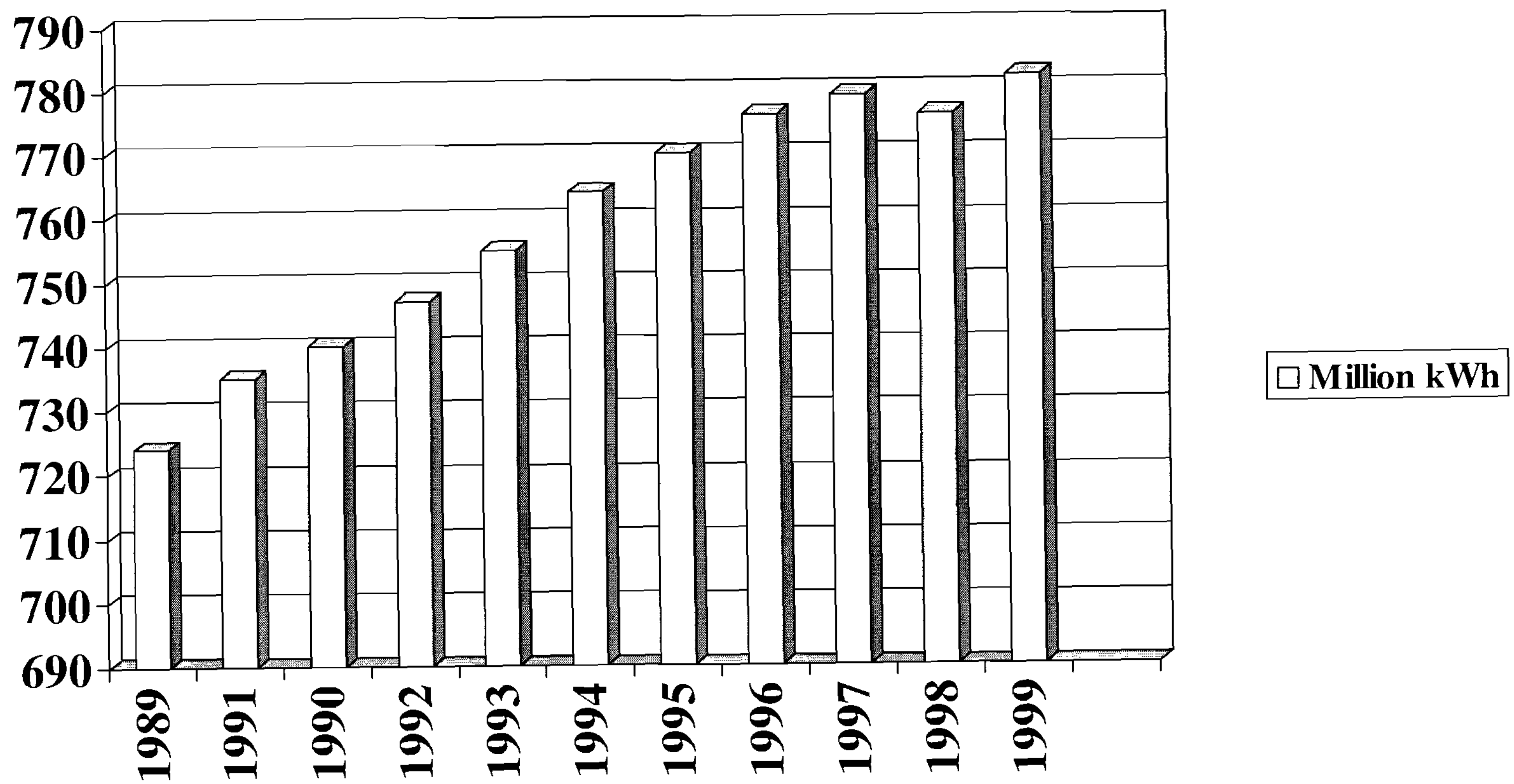
New England Monthly Avg. Prices



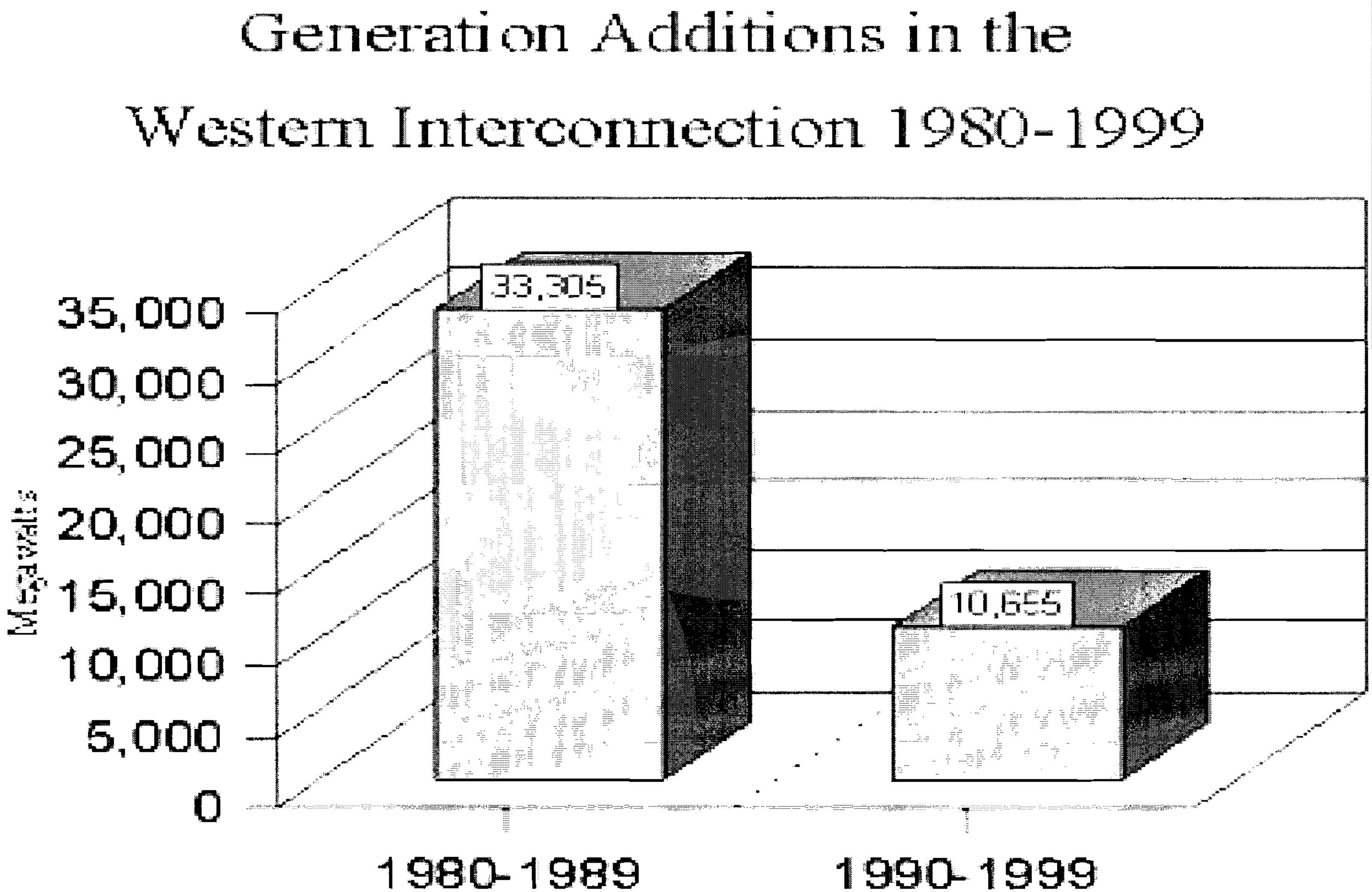
California Monthly Avg. Prices



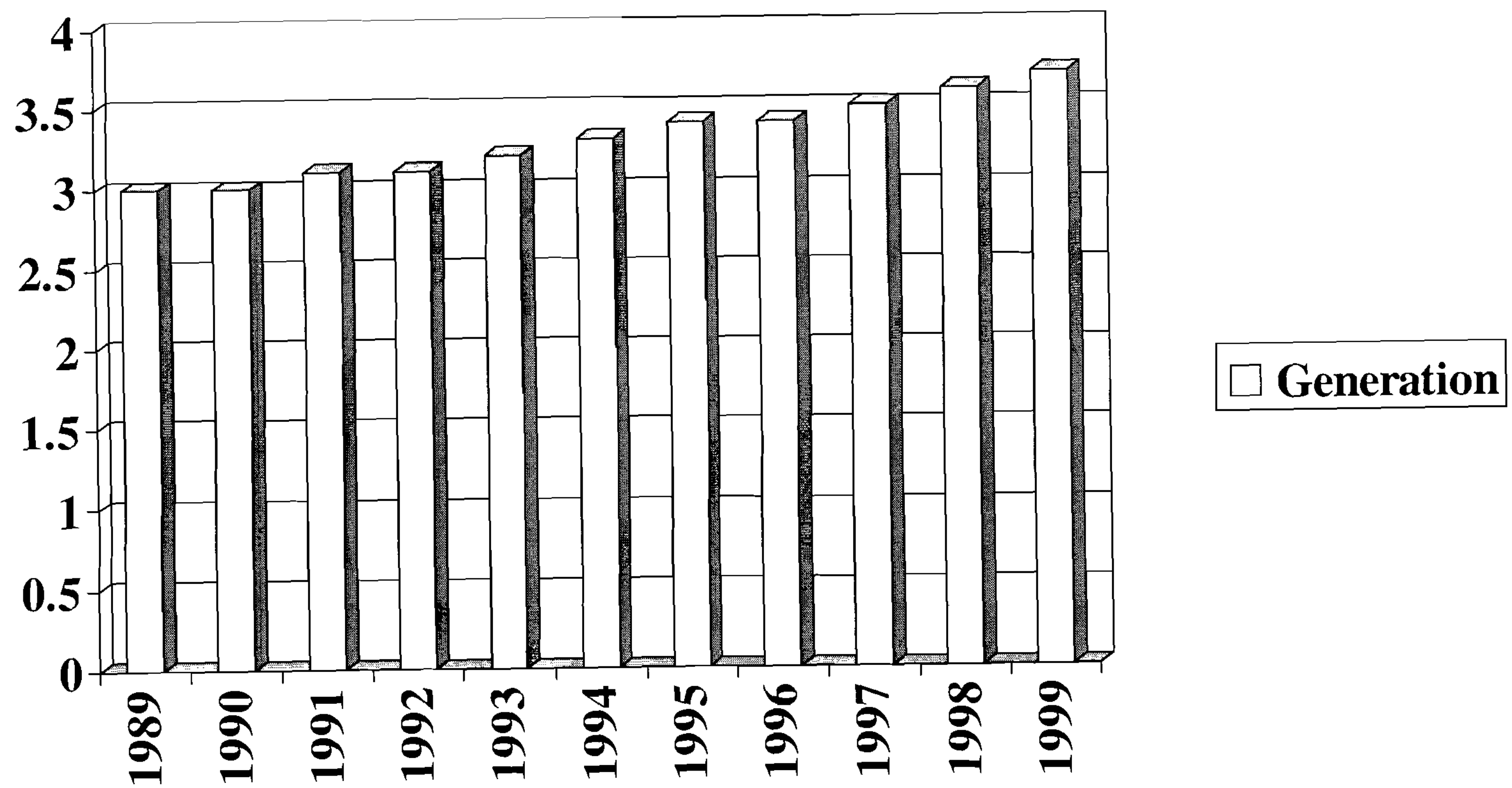
Growth of New Generation Flattened



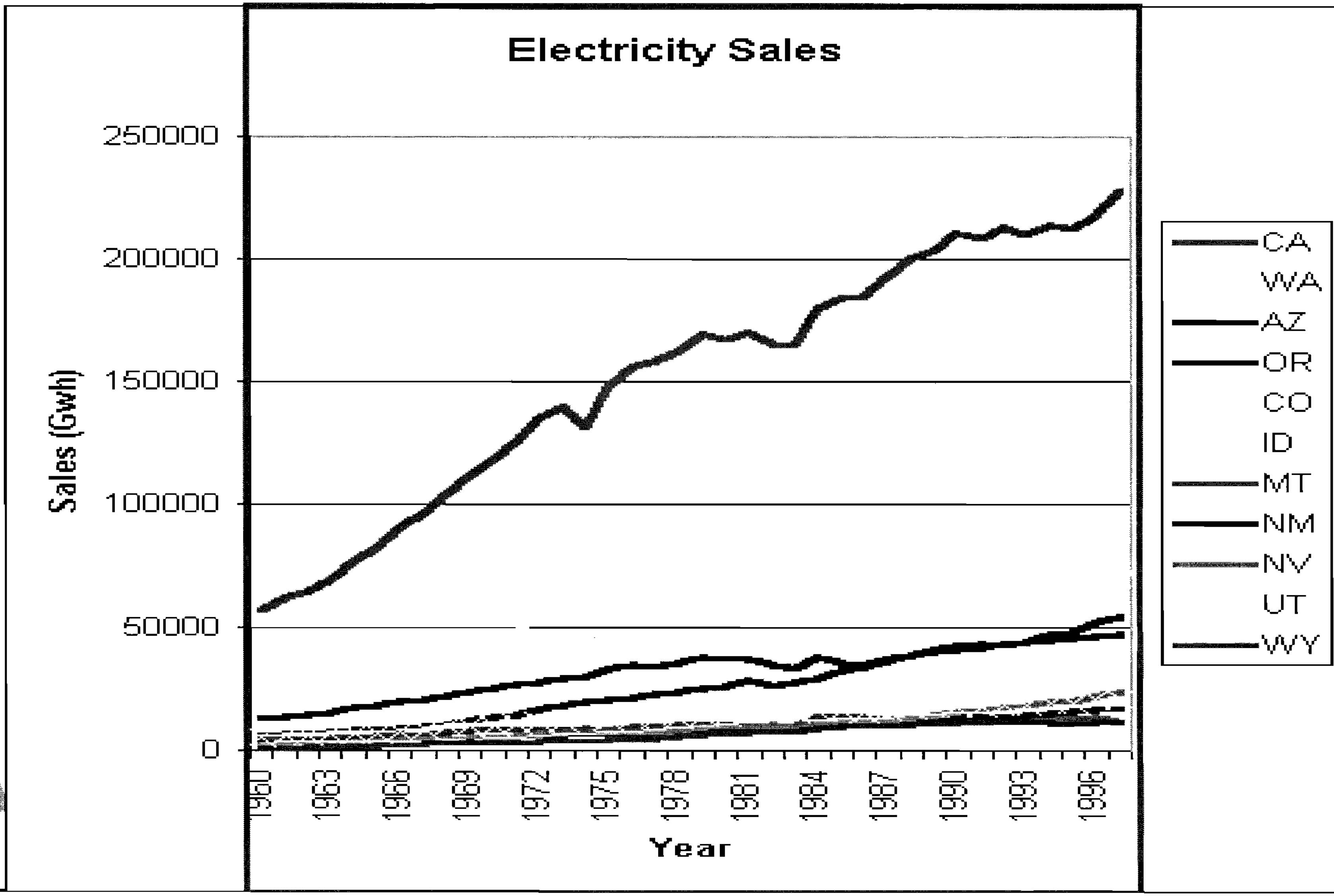
Generation Additions in West



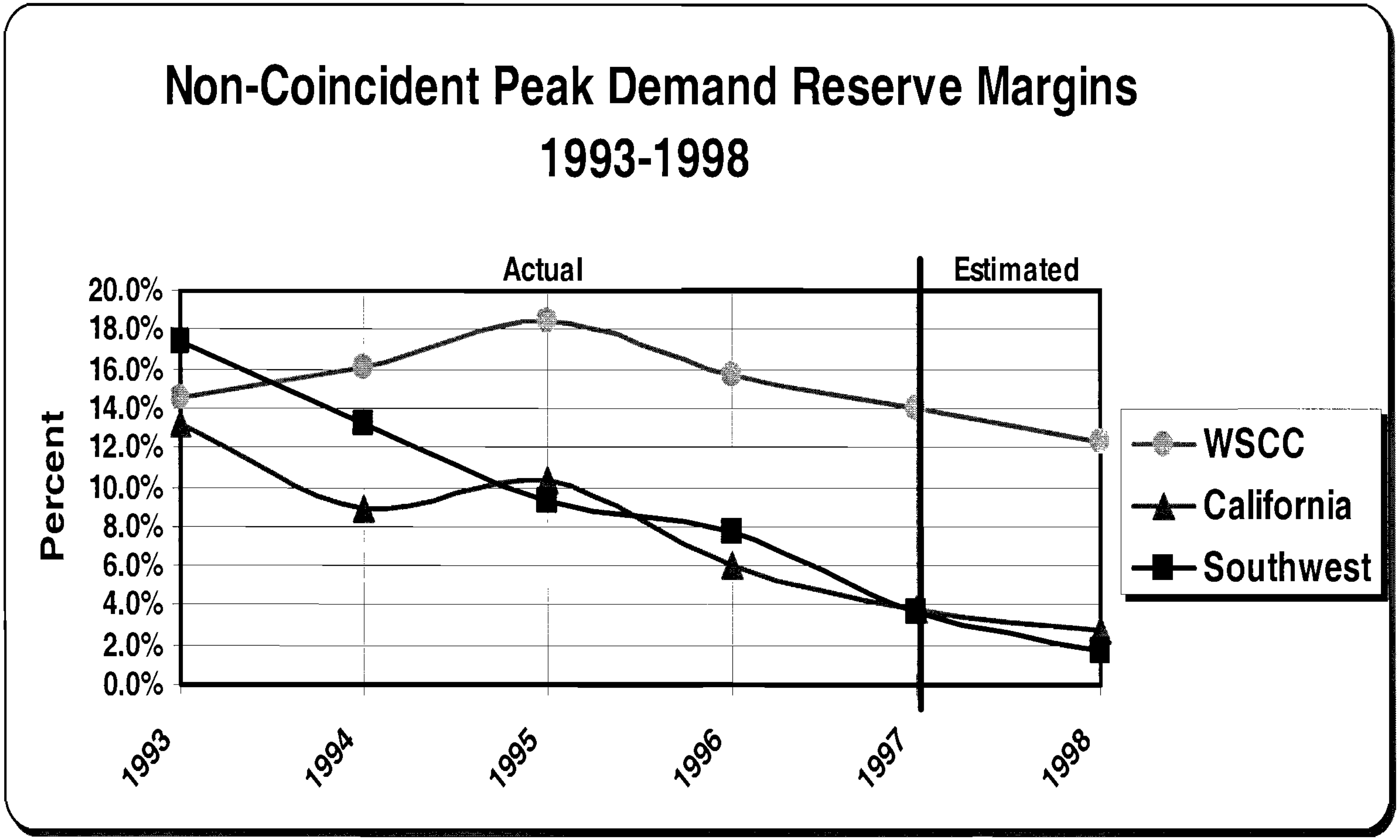
While Electricity Demand Grew



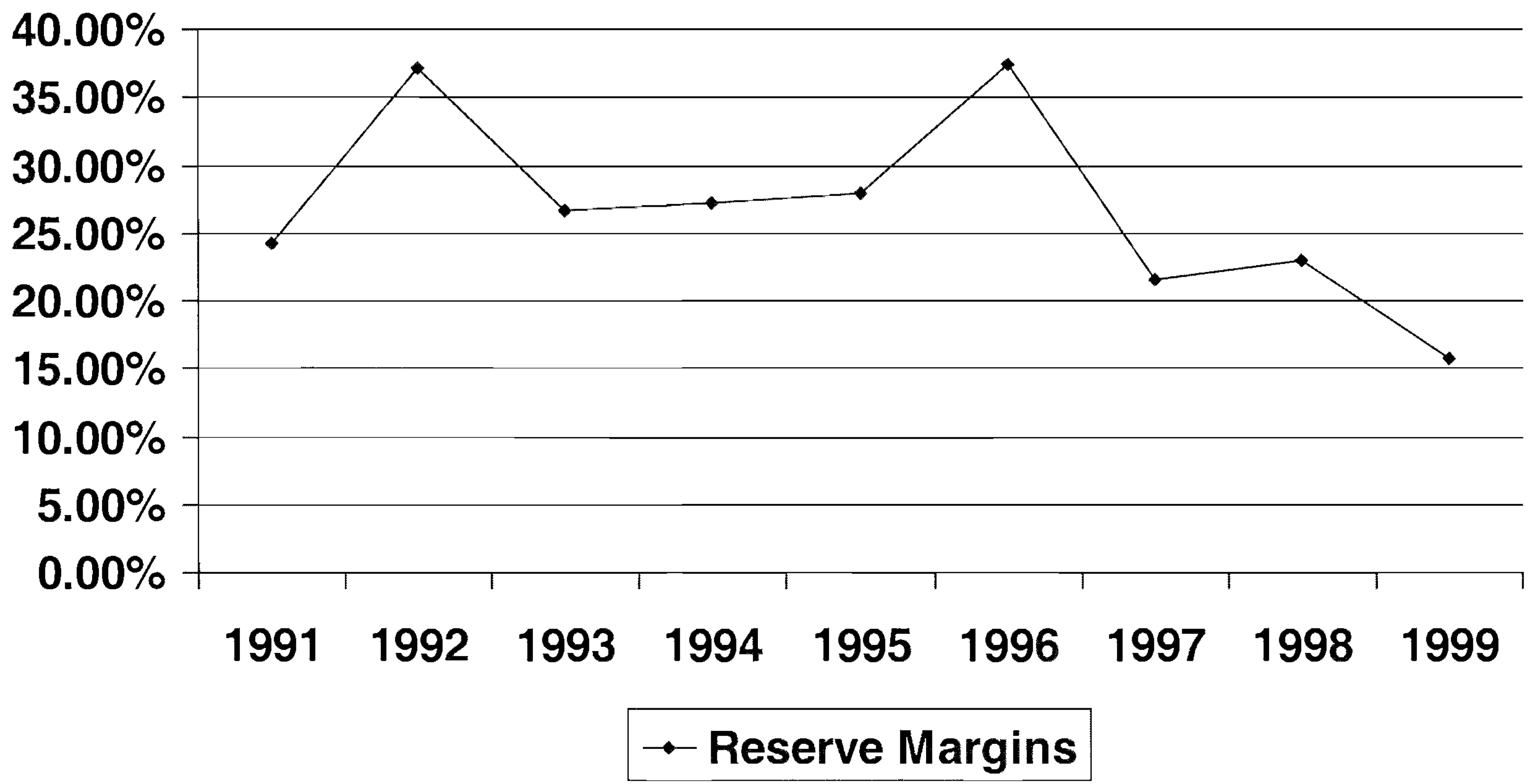
Western States Electricity Sales: Historic Growth



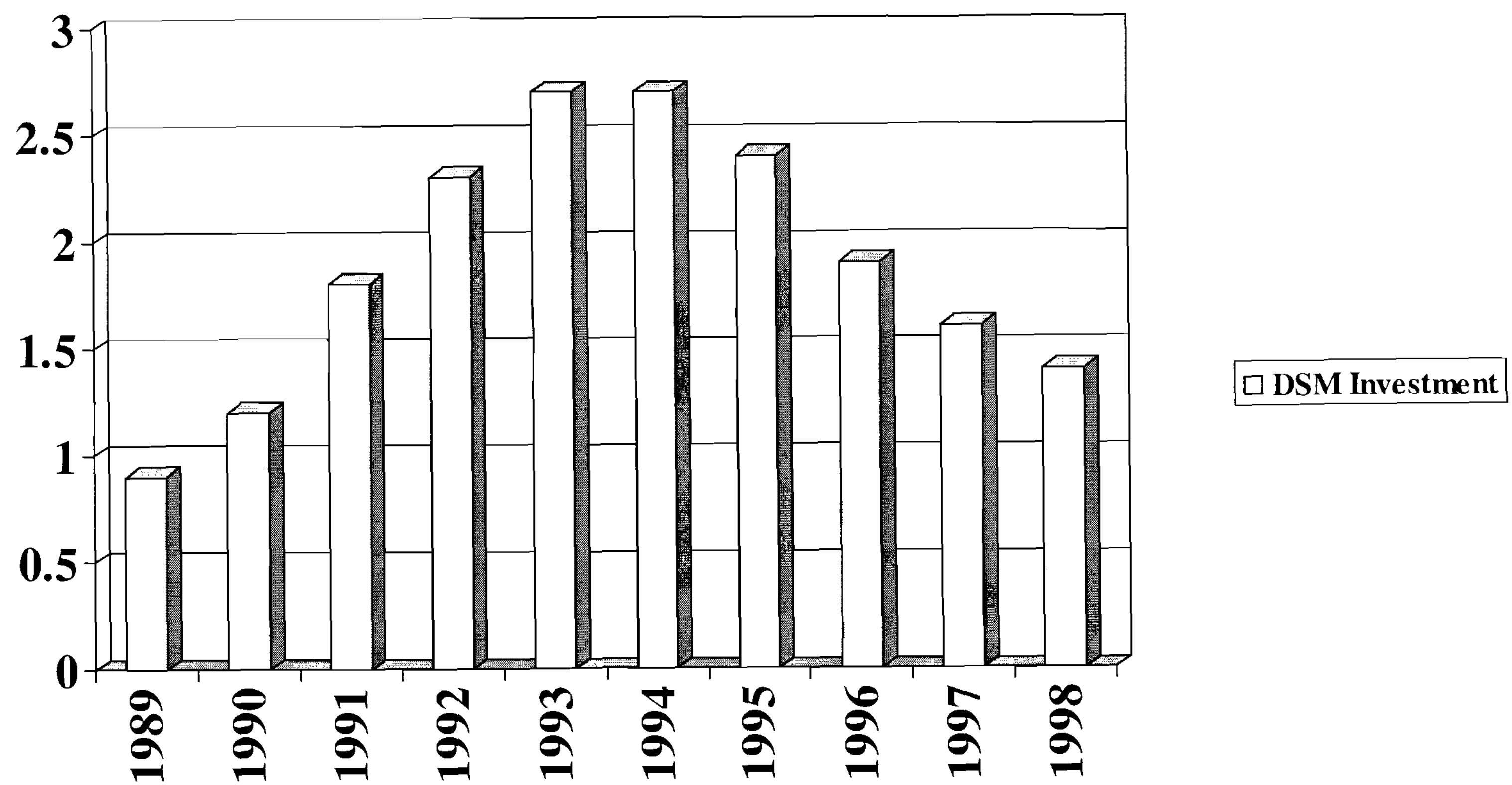
Reserve Margins Fell



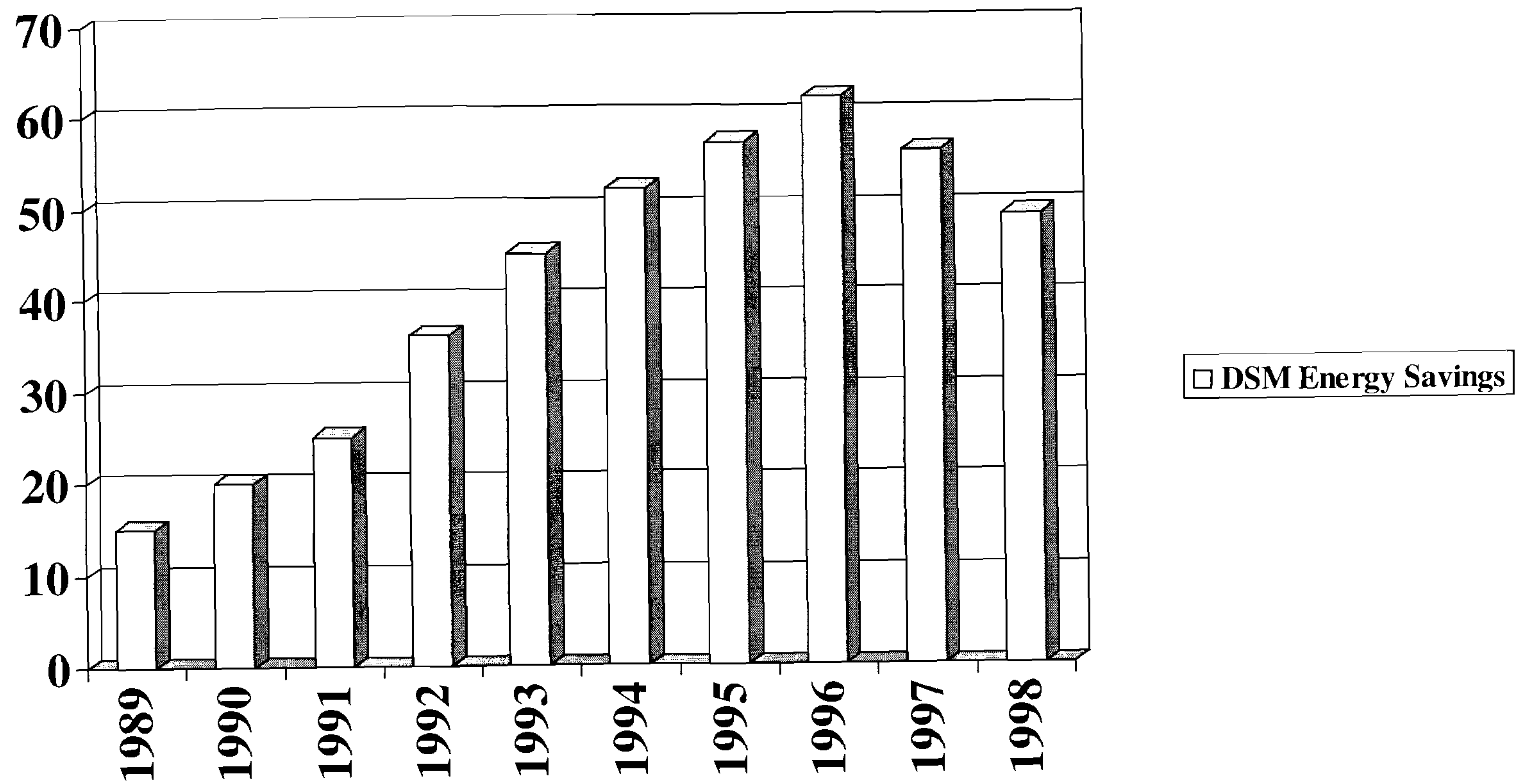
New York Reserve Margins



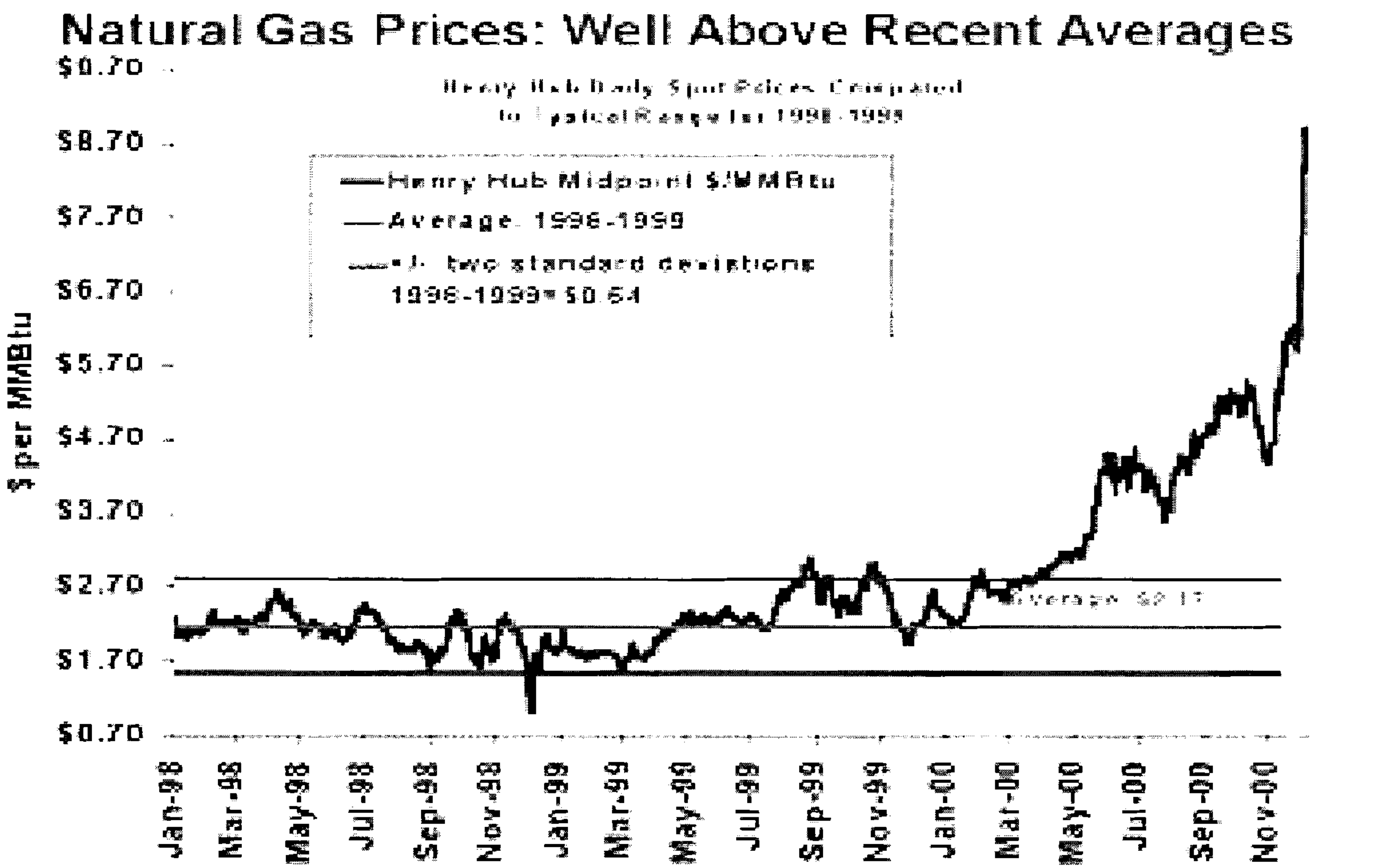
Investments in Energy Efficiency Fell



And Savings from Efficiency Fell

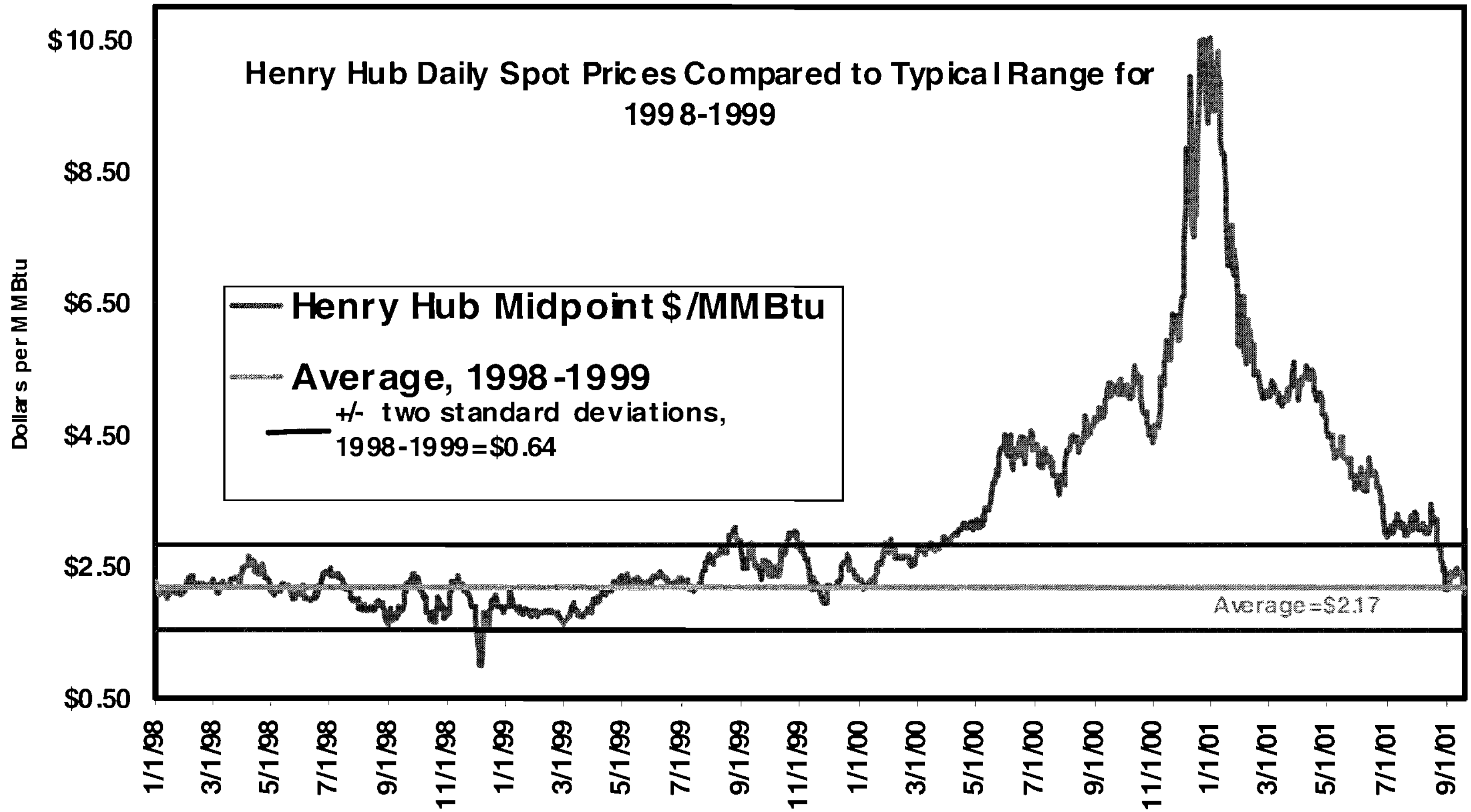


Natural Gas Prices, 1/98-11/00



Source: Gas Daily & Reuters

Natural Gas Spot Prices in September 2001 Are Within the 1998-1999 range



Source: Financial Times Energy, Gas Daily

California Customers Switching as of October 2000

Switches	Res	Com	Ind	Ag	Total
Cust.	1.7%	7.5%	12.8%	2.5%	1.8%
Load	2.0%	16.1%	27.4%	6.9%	11.9%

Illinois Eligible Customer Usage Switching As Of 12/31/00 (million kWh)

Utility	Commercial	Industrial	Government	Total
AmerenCIPS	121	162		283
ComEd	4,719	8,857	1,034	14,610
Illinois Power	120.8	1,123.3		1,244.1
Mid American	35	17		52

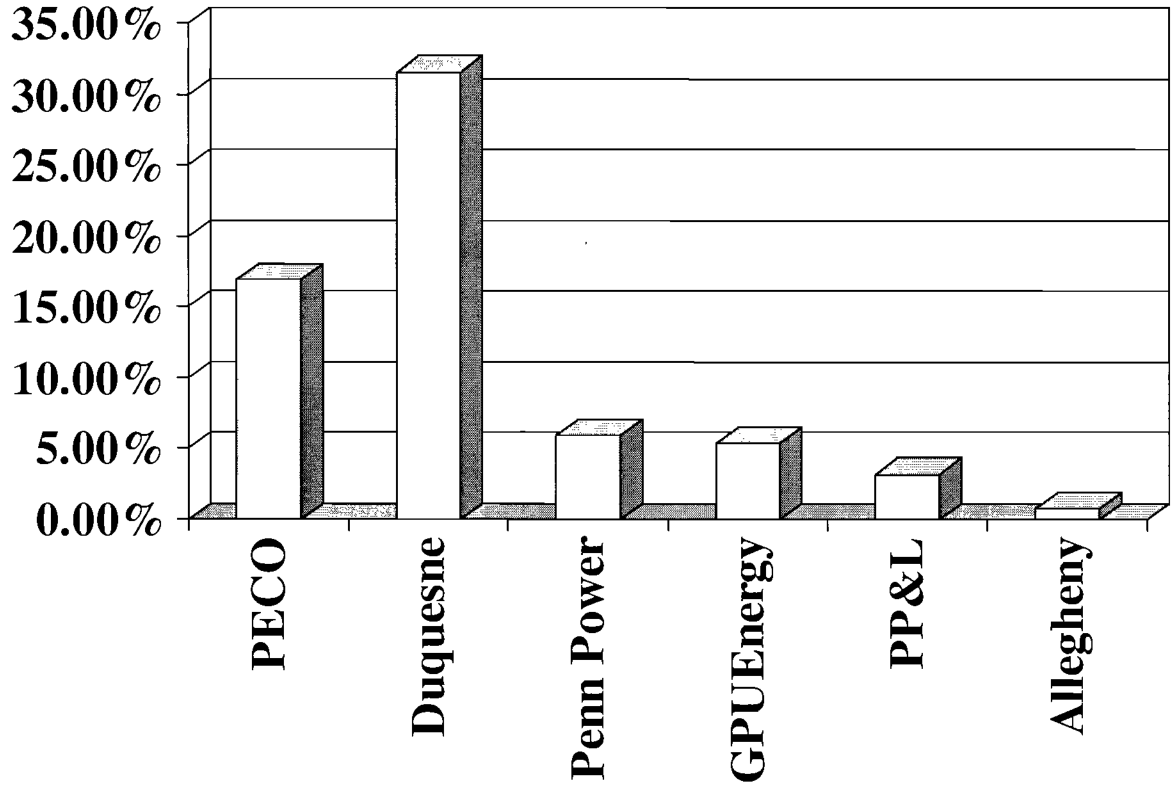
Maine Customers Switching Providers as of 11/1/00

	Number of Customers Switched	% of Load Switched
Central Maine Power	~1202	30 %
Bangor Hydroelectric Company	~81	12 %
Maine Public Service	~1765	38 %

Massachusetts Customers Switching Providers As of 10/00

	Res	Comm & Ind	Large Comm & Ind
% Switched	0.1%	0.7%	7.2%
% kWh Switched	0.2%	1.6%	12.4%

PA Customers Switching 10/1/00



**Varies based on usage and demand

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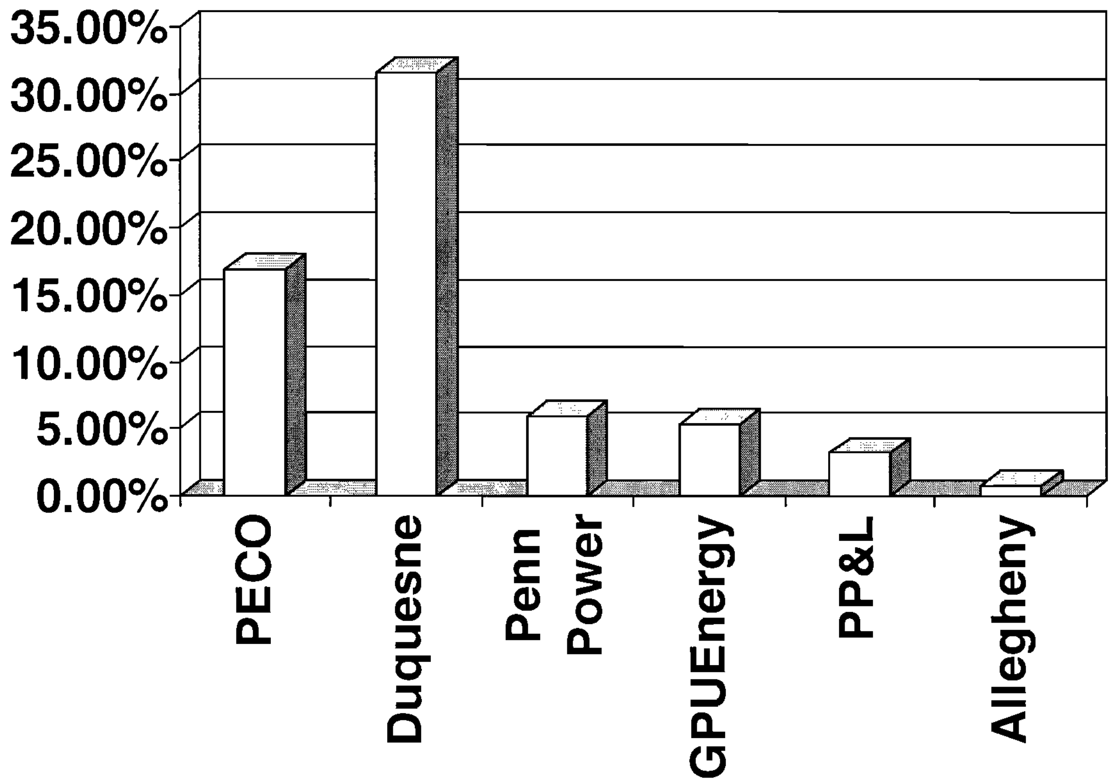

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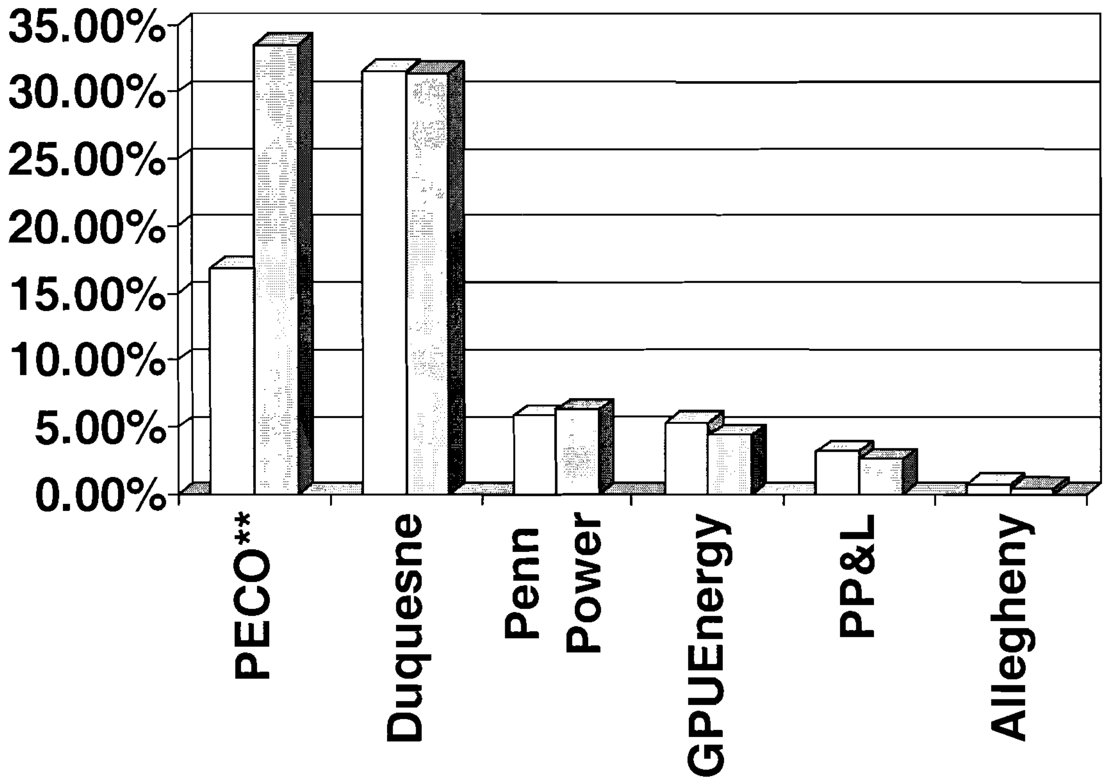
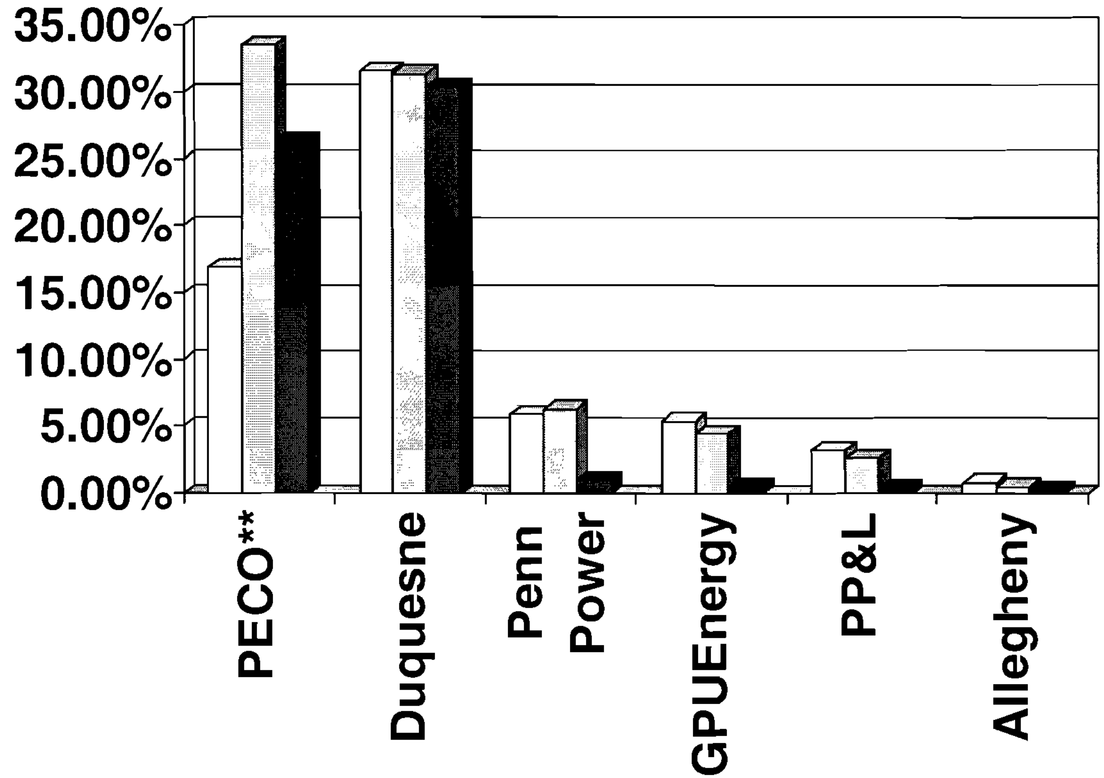
PA Customers Switching 7/1/01



** PECO includes 16$% of residential customers assigned to Competitive Discount Service

PA Customers Switching 7/1/01



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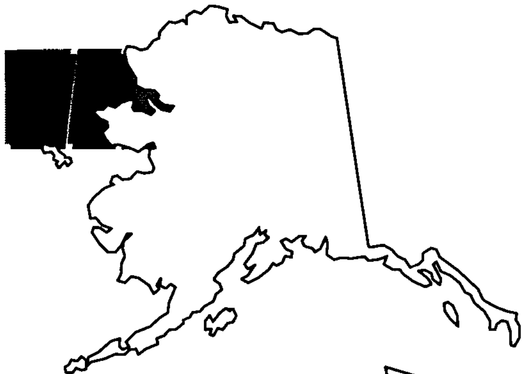
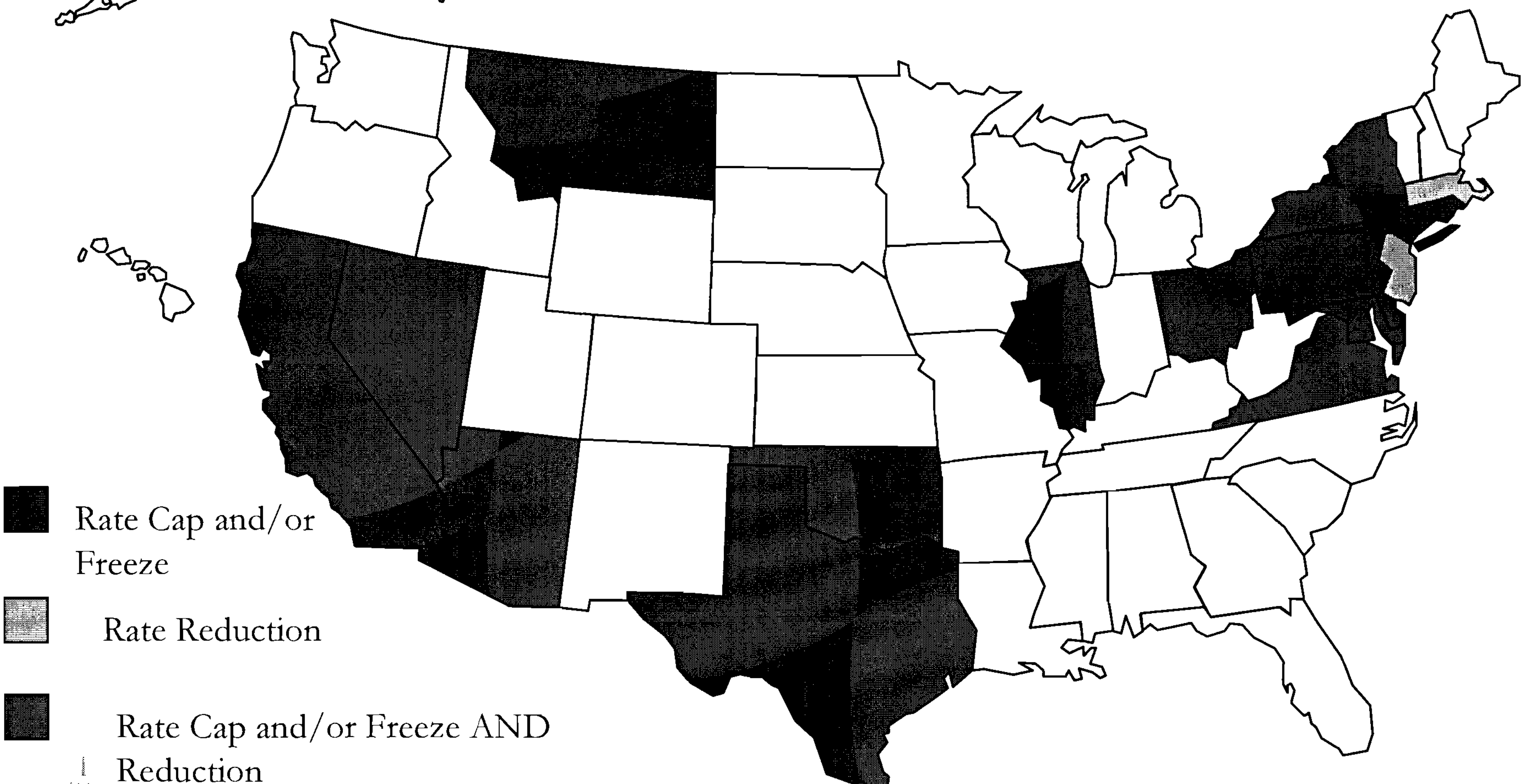
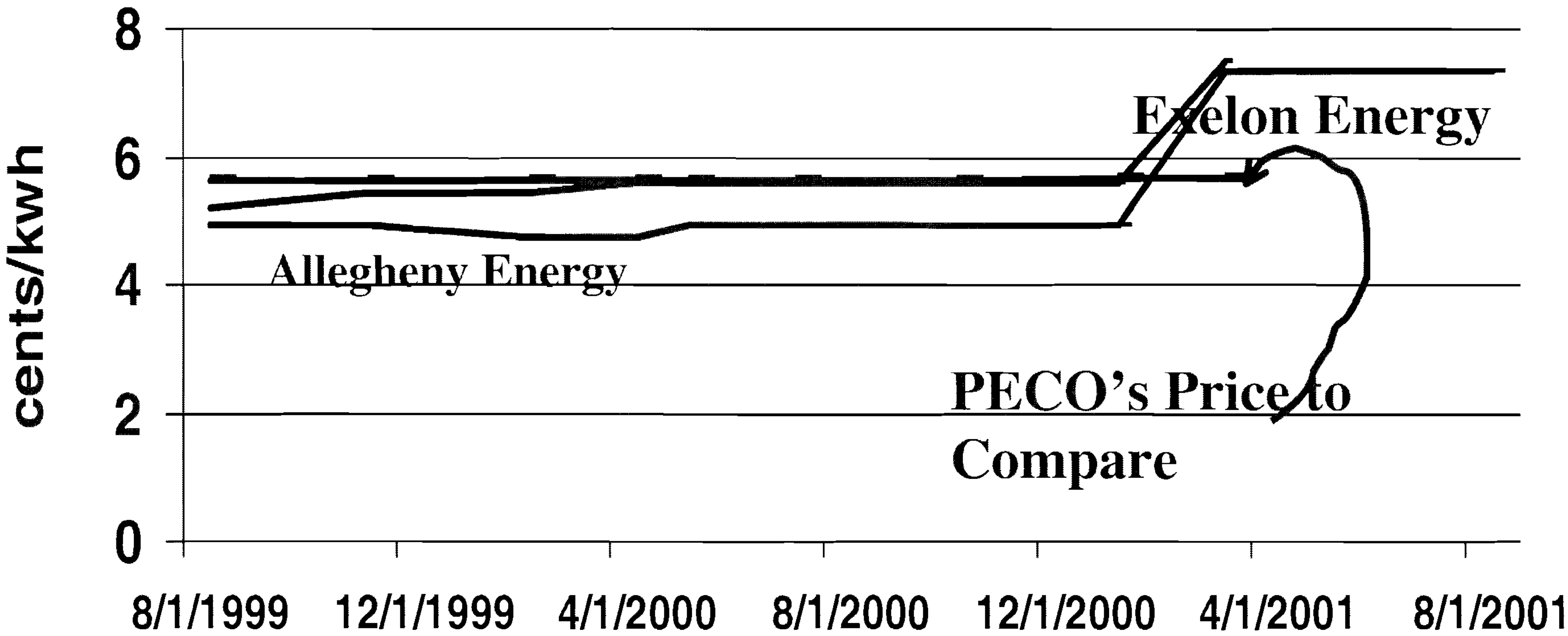
Market Rules
Price Caps and Rate Freezes





PECO/ Competitors' Rates



Most Marketers Aren't Marketing to Residential Customers

Some marketers are selling to residential customers, but in general the costs are too high and the return too low to attract large numbers of marketers to the segment under current rules.

Savings for Most Residential Customers Are Small

A Typical Residential Customer's Bill:	**$70.00**
40% of Typical Bill is For Power Delivery	**($28.00)**
Portion of Bill Subject to Competition	**$32.00**

Typical Savings Are From 2% to 10% **64 cents to $3.20 savings per mo.**

The Savings for Most Residential Customers Are Too Small to Make Switching Highly Attractive.

The Cost of Acquiring Customers Is High

•Studies suggest that the cost of acquiring a new customer is high: from $40 to $200.

•The New York Times says that the cost of acquiring a cell phone customer is about $300 per customer.

•Yet margins on residential customers are low -- maybe one penny per kWh.

State Policy Options

A Solution: Aggregation???

1. Watch and Fix the Wholesale Market
2. Fix the Retail Market
   -- look at default customer prices
   -- enable retail customers through aggregation

Several Types of Aggregation

- Private Sector Aggregation
- Government Aggregation
  - <u>Opt -in</u> aggregation: Citizens of a jurisdiction must agree, one by one, to let the government entity choose their provider
  - <u>Opt-out</u> aggregation: Citizens assumed to accept government entity's choice of provider unless they say otherwise.

Private, NGO, Government Sector Aggregation

- Retail merchants associations, chambers of commerce and others are negotiating deals for their members.
- Some municipalities have combined forces to serve their own load.
  - Discounts range from 5-20 percent off the default customer rates.

Private Sector Examples

- Maine
  - discounts off default service are a function of how retail default service is priced.
    - » 1 year contract: discount is 10-15%
    - » 2-3 year contract discount is 15-25%
    - » aggregation only works for 20kw and larger customers. Rates for default customers below 20kw are set below wholesale market prices.

Richmond, VA Retail Merchants Association

- Competition has not yet started in Virginia.
- Retail Merchants Assoc. has signed up 125 of its 1100 members to buy from an aggregator.
  - No commitment for member companies to proceed if the deal isn't to their liking
  - Companies may be able to offer the deal to their employees in Sept. of 2002.

California Municipalities

- California municipalities bought for their own load -- not of their citizens.
- The aggregator signed a long term deal to cover 90% of the members' needs. The remaining 10% had to be covered from the spot market.
  - Spot market prices went so high that it was no longer worthwhile to continue -- even though the other 90% was secured at a discount

Opt - In v. Opt - Out

- Most states allow opt in aggregation.
  - Very few municipal governments have had success in aggregation in these situation.
- Massachusetts, Ohio and maybe soon California allow opt-out aggregation.
  - Ohio appears to have had more success with aggregation than elsewhere.

May 2001 Results: Electricity Aggregation

VOTES CAST	YES	NO
ASHLAND COUNTY		
PROPOSED ELECTRICITY AGGREGATION ORDINANCE		
Shall the City have the authority to aggregate the retail electric loads and enter into service agreements for the sale and purchase of electricity, to occur automatically except where any person opts out? City of Ashland	1,821	691
PROPOSED ELECTRICITY AGGREGATION ORDINANCE		
Shall the County have the authority to aggregate the retail electric loads and enter into service agreements for the sale and purchase of electricity, to occur automatically except where any person opts out? Ashland County	888	1,194
ASHTABULA COUNTY		
PROPOSED ELECTRICITY AGGREGATION ORDINANCE		
Shall the City have the authority to aggregate the retail electric loads and enter into service agreements for the sale and purchase of electricity, to occur automatically except where any person opts out? Ashtabula County	3,300	2,124
CUYAHOGA COUNTY		
PROPOSED ELECTRICITY AGGREGATION ORDINANCE		
Shall the City have the authority to aggregate the retail electric loads and enter into service agreements for the sale and purchase of electricity, to occur automatically except where any person opts out? Seven Hills City	1,880	349

Conclusions on Municipal Aggregation

- Opt-in aggregation appears to pose high barriers, and has resulted in almost no successful aggregation.
  - It is less controversial than opt-in aggregation.
  - Supporters argue that it allows for a "level playing field" among all types of organizations marketing power.

Conclusions on Municipal Aggregation

- Opt-out aggregation is less common and earlier in its development. It poses fewer barriers and has resulted in some successful aggregation efforts.
  - It is more controversial than opt-in aggregation.
  - Some argue that it will proffer too great an advantage to municipalities.

Aggregation Conclusions

- Aggregation still depends on a working wholesale power market, and is still subject to retail market rules. It is one piece of a larger puzzle.