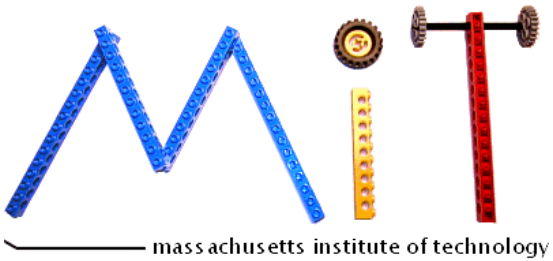
RETAIL COMPETITION IN THE U.S.

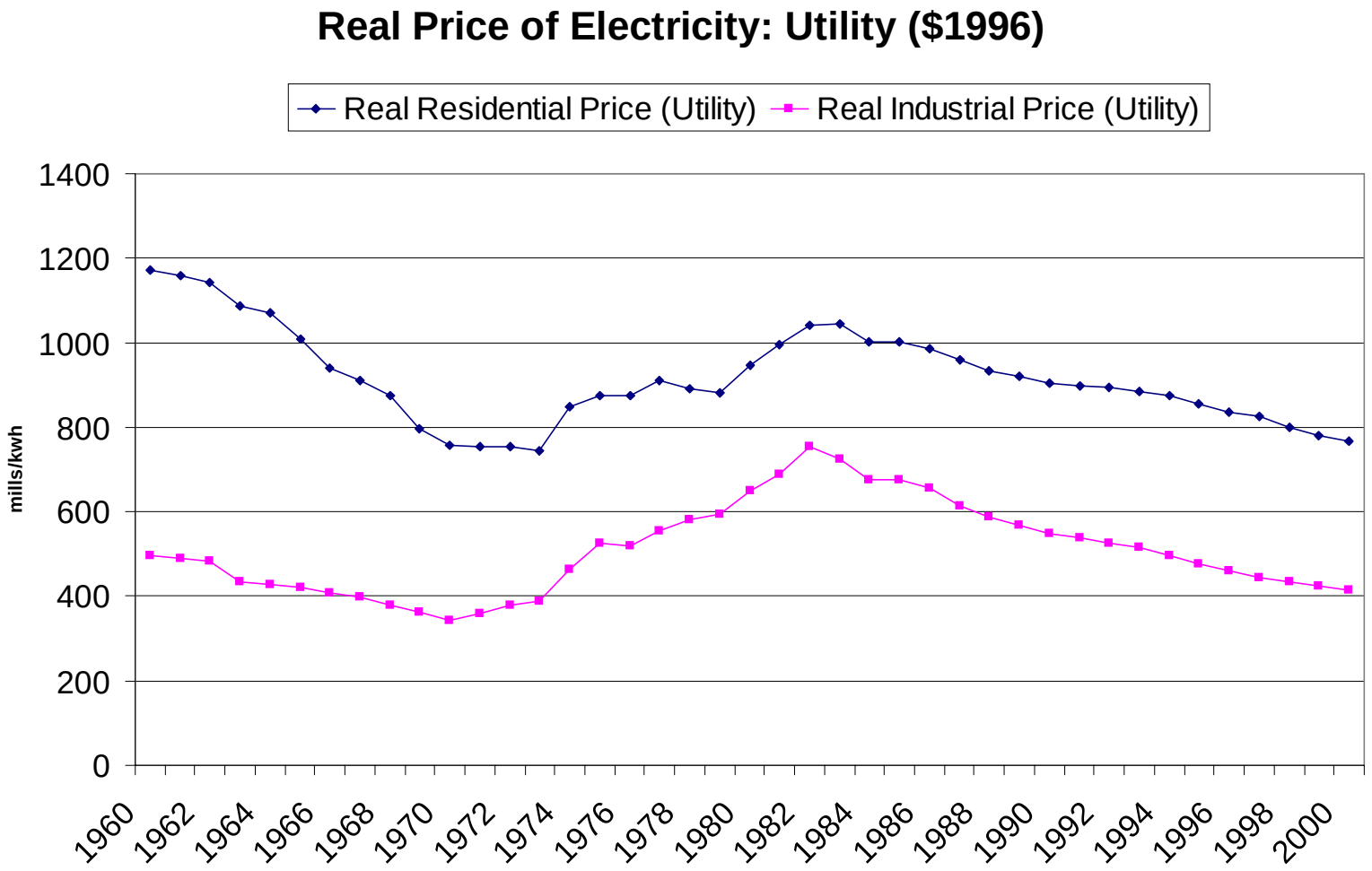
Paul L. Joskow



Oviedo, Spain

July 3-5, 2002

RETAIL PRICES VARY OVER TIME



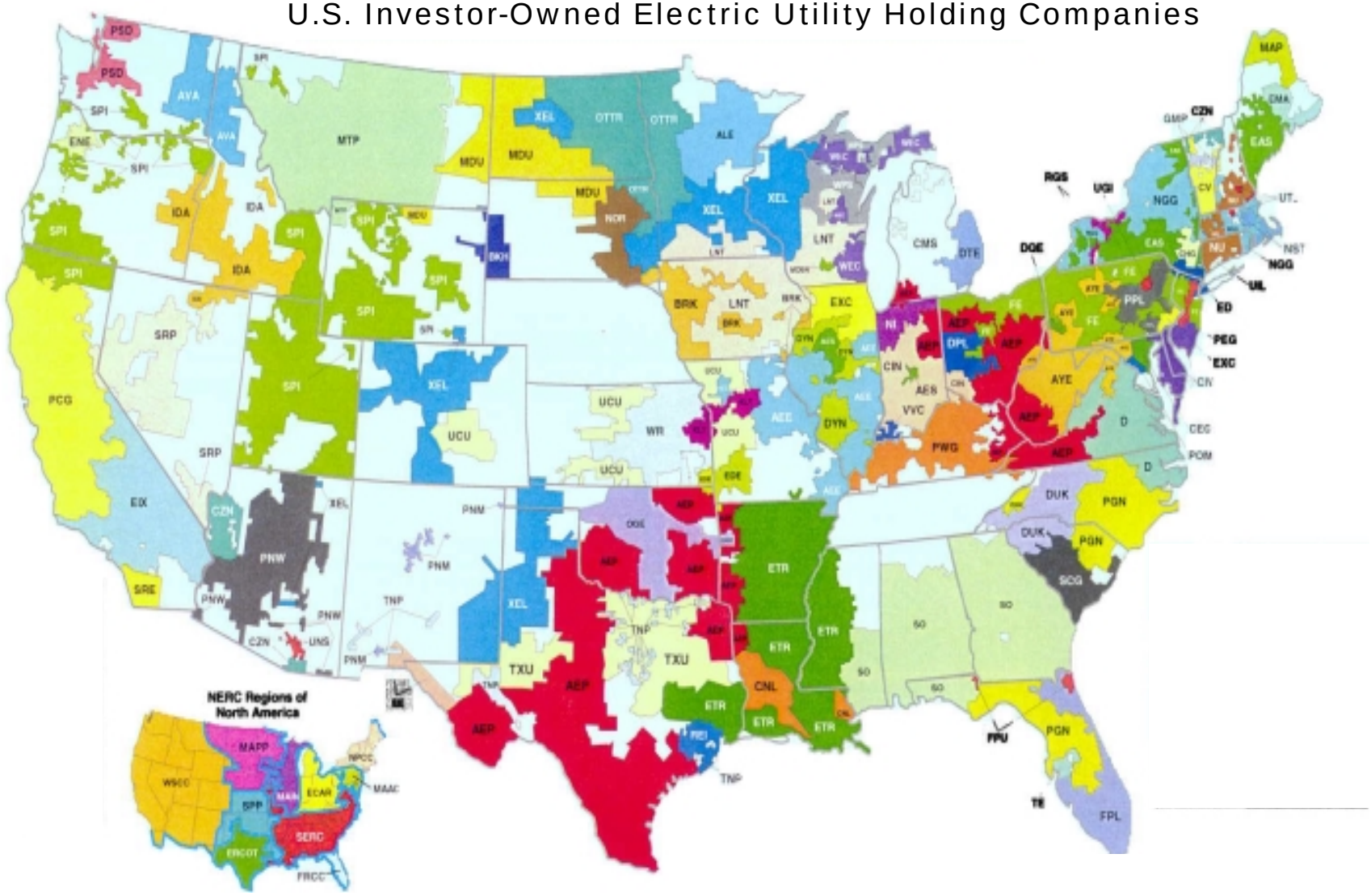
AVERAGE REVENUE PER KWH
RESIDENTIAL CONSUMERS[1]
(cents/kWh)

STATE	1997	1998
Connecticut	12.13	11.95
Maine	12.75	13.02
Massachusetts	11.59	10.60
Rhode Island	12.12	10.91
New Jersey	12.08	11.39
New York	14.12	13.66
Pennsylvania	9.90	9.93
Delaware	9.22	9.13
Illinois	10.43	9.85
Indiana	6.94	7.01
Ohio	8.63	8.70
Wisconsin	6.88	7.17
Iowa	8.21	8.38
Kansas	7.71	7.65
Missouri	7.09	7.08
North Dakota	6.27	6.49
Florida	8.08	7.89
Georgia	7.74	7.67
South Carolina	7.51	7.51
West Virginia	6.26	6.29
Kentucky	5.58	5.61
Alabama	6.74	6.94
Arkansas	7.80	7.51
Texas	7.82	7.65
Arizona	8.82	8.68
California	11.50	10.60
Montana	6.40	6.50
New Mexico	8.92	8.85
Wyoming	6.22	6.28
Oregon	5.56	5.82
Washington	4.95	5.03
U.S. Average	8.43	8.26

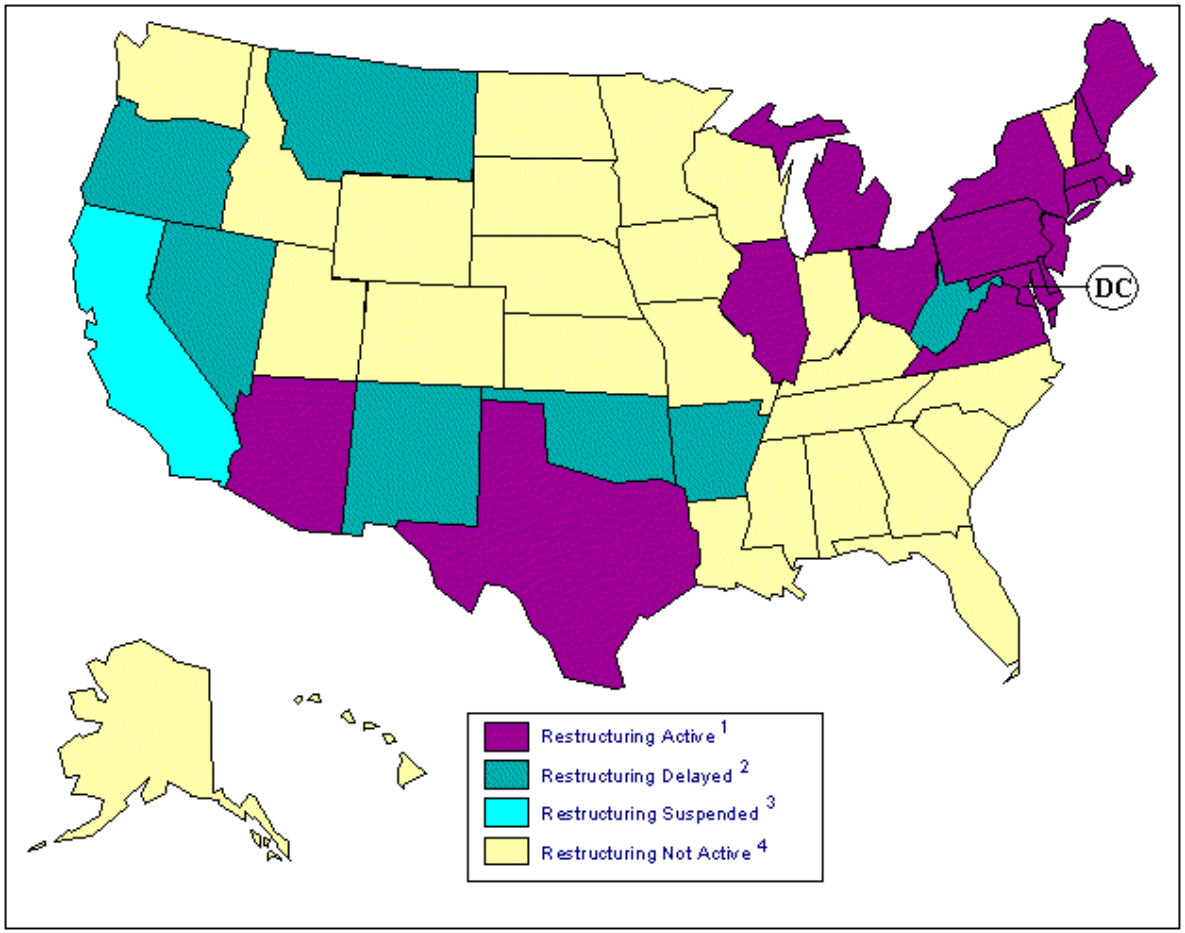
AVERAGE REVENUE PER KWH
INDUSTRIAL CONSUMERS
(cents/kWh)

STATE	1997	1998
Connecticut	7.76	7.70
Maine	6.36	6.61
Massachusetts	8.78	8.18
Rhode Island	8.52	7.61
New Jersey	8.11	7.94
New York	5.20	4.95
Pennsylvania	5.89	5.63
Delaware	4.82	4.65
Illinois	5.29	5.11
Indiana	3.91	3.95
Ohio	4.16	4.30
Wisconsin	3.72	3.86
Iowa	3.95	3.99
Kansas	4.51	4.46
Missouri	4.46	4.43
North Dakota	4.38	4.30
Florida	5.04	4.81
Georgia	4.13	4.23
South Carolina	4.00	3.69
West Virginia	3.47	3.78
Kentucky	2.80	2.91
Alabama	3.71	3.89
Arkansas	4.45	4.16
Texas	4.05	3.94
Arizona	5.05	5.12
California	6.95	6.59
Montana	3.66	3.19
New Mexico	4.42	4.47
Wyoming	3.46	3.38
Oregon	3.23	3.50
Washington	2.59	2.64
U.S. Average	4.53	4.48

U.S. Investor-Owned Electric Utility Holding Companies



STATUS OF COMPREHENSIVE REFORM PROGRAMS



STATUS OF COMPREHENSIVE REFORM PROGRAMS

- Comprehensive reform initiatives begin in several "pioneer" states around 1995-1997
  - Massachusetts (ISO)
  - Rhode Island (ISO)
  - New York (ISO)
  - Maine (ISO)
  - Pennsylvania (ISO)
  - Illinois
  - Connecticut (ISO)
  - California (ISO)
  - New Jersey (ISO)
  - Delaware (ISO)
  - Montana (an exception)
- Radical restructuring in many of these states
  - Generation divestiture + ISO in many states
  - Retail access for all customers very quickly
  - Default service obligation
  - Restrictions on affiliate marketing activities
  - Stranded cost recovery was the carrot

STATUS OF COMPREHENSIVE REFORM PROGRAMS

- Several other states recently or in process of implementing retail competition reforms
  - Arizona
  - Ohio
  - Maryland (ISO)
  - Michigan
  - New Hampshire (ISO)
  - Texas (1/1/02) (ISO)
- Many of these have less comprehensive reform programs
  - Limited generation or transmission divestiture obligation
  - Limited Wholesale market reforms or ISO
  - Fewer restrictions on marketing affiliates
- Several other states have announced reforms but many have been delayed
  - Arkansas
  - Nevada
  - New Mexico
  - West Virginia
  - Oklahoma

PERFORMANCE OF RETAIL COMPETITION PROGRAMS

- Performance to date has been disappointing, especially for smaller customers
- Fraction of customers “switching” has generally been smaller than hoped for, especially for smaller customers
- Switching rates have stagnated or even declined
- Retail price reductions have gotten smaller as wholesale price reductions have rise
- Diffusion of other value-added services, especially active demand side, appears to be minimal except for very large customers (not well tracked)
- Poor performance of retail competition has had adverse effects on wholesale markets: Real-time pricing and demand elasticity, long-term contracts with generators, retail procurement uncertainty

WHAT IS RETAIL COMPETITION?

- Retail consumers traditionally received “bundled” service from their local utility and paid an associated “bundled” price

$$P_e = C_{dist} + C_{trans} + C_{gen} + C_{cust\text{-}service}$$

- Retail services are now separated into “competitive services” (generation and some customer services) and “regulated monopoly” services (transmission, distribution and some customer services)

- The consumer receives regulated “delivery” services from the local utility and can shop for a supplier of competitive services

- Customers who do not or cannot find a competitive supplier are offered “default service” (typically) by their local utility

WHAT IS RETAIL COMPETITION?

- All retail customers pay a price for regulated services (P_R) that includes:
  - Distribution and transmission cost-based charges (as before)
  - (typically) a large fraction of customer service charges
  - Stranded generation cost charges (if any)

- Customers choosing a competitive retailer pay in addition the charges for energy and any associated customer or value added services negotiated with the retailer (P_c) and have a total bill defined by $B_c = (P_R + P_C)$ per unit.

- P_C must be high enough for the retailer to cover wholesale power and customer service costs to make it profitable to provide the service

WHAT IS RETAIL COMPETITION?

- Customers who do not choose a competitive retailer typically can continue to be supplied by their local utility under a "default service" rate (P_{DEF}) yielding a total bill

  $B_{DEF} = P_R + P_{DEF}$ per unit

- The default service price typically ensures that at least for some period of time the total price for electricity will be less than the price that previously prevailed under regulation

- The terms and conditions of default service then define the "price to beat" for competitive retailers trying to attract customers

  Price to beat = $B_{DEF} - B_C = P_{DEF}$

EFFECTIVE APR. 1, THE STANDARD OFFER SERVICE PRICE HAS DECREASED FROM $0.06376 PER KWH TO $0.04950 PER KWH. IF YOUR BILL CONTAINS ELECTRIC USAGE PRIOR TO APR. 1, YOUR BILL WILL REFLECT PRICING FROM BOTH PERIODS.

3161

Account Number	Billing Date	Next Read Date
2278 085 1006	Apr 5, 2002	May 6, 2002

Service Provided to

PAUL JOSKOW
7 CHILTON ST
BROOKLINE MA 02446

Account Summary

Previous Bill	
Payment - Thank You	
Total Cost Electricity	153.20
Amount Due	$153.20

Electricity Used

Rate A1-Residential Non-Heating
Meter 1166335

Apr 03, 2002 Actual Read		93741
Mar 02, 2002 Actual Read	-	92583
32 Day Billed Use		1158

1166335	KWH
03/02	1865
01/31	1439
01/03	1557
12/04	1195
11/02	977
10/02	1068
09/05	2098
08/03	1544
07/06	1881
06/04	1573
05/01	1281
04/02	1309

Cost of Electricity

Delivery Services (PRORATED)

Customer Charge				6.43
Distribution	.03899 X	1158	KWH	45.16
Transition *	.01562 X	1158	KWH	18.09
Transmission	.00645 X	1158	KWH	7.47
Renewable Energy	.00075 X	1158	KWH	0.87
Energy Conservation	.00250 X	1158	KWH	2.90
Delivery Services Total				80.92

Supplier Services

Generation Charge				
Standard Offer Svc	.06241 X	1158	KWH	72.28

Total Cost of Electricity **153.20**

**PART OF WHAT WE COLLECT IN THE TRANSITION CHARGE IS OWNED BY BEC FUNDING LLC.*

WHAT IS RETAIL COMPETITION?

- There are significant differences between the “mass market” (residential and small commercial) and the market for large commercial and industrial customers
  - Average monthly bill
  - Customer acquisition costs
  - Array of “value added” services
  - Customer service costs
  - Price sensitivity
  - Scale economies

	Customers	**% of Consumption**	**Av. Monthly Bill (cents/kwh)**
Residential	110 million	36%	$73.25 (8.2)
Commercial	14 million	30%	$455.35(7.4)
Industrial	0.51 million	31% (other 3%)	$7,813.30(4.6)

SETTING THE DEFAULT SERVICE PRICE

- The default service price for generation service typically has reflected several constraints:
  - Recovery of stranded costs (in any)
  - No higher than generation component of regulated price (including stranded costs) so default service price either falls or does not increase from prevailing regulated price
  - Greater than or equal to competitive wholesale market price for power to create some retail margin for competitive suppliers
  - Reasonable recovery of customer service costs by incumbent and competitive retailers
  - Restrictions on “self-dealing” by retail affiliates of incumbents
  - Limit “back and forth” movement between competitive and default service
- These constraints often cannot be met simultaneously, especially as wholesale prices have risen above expectations and regulated prices

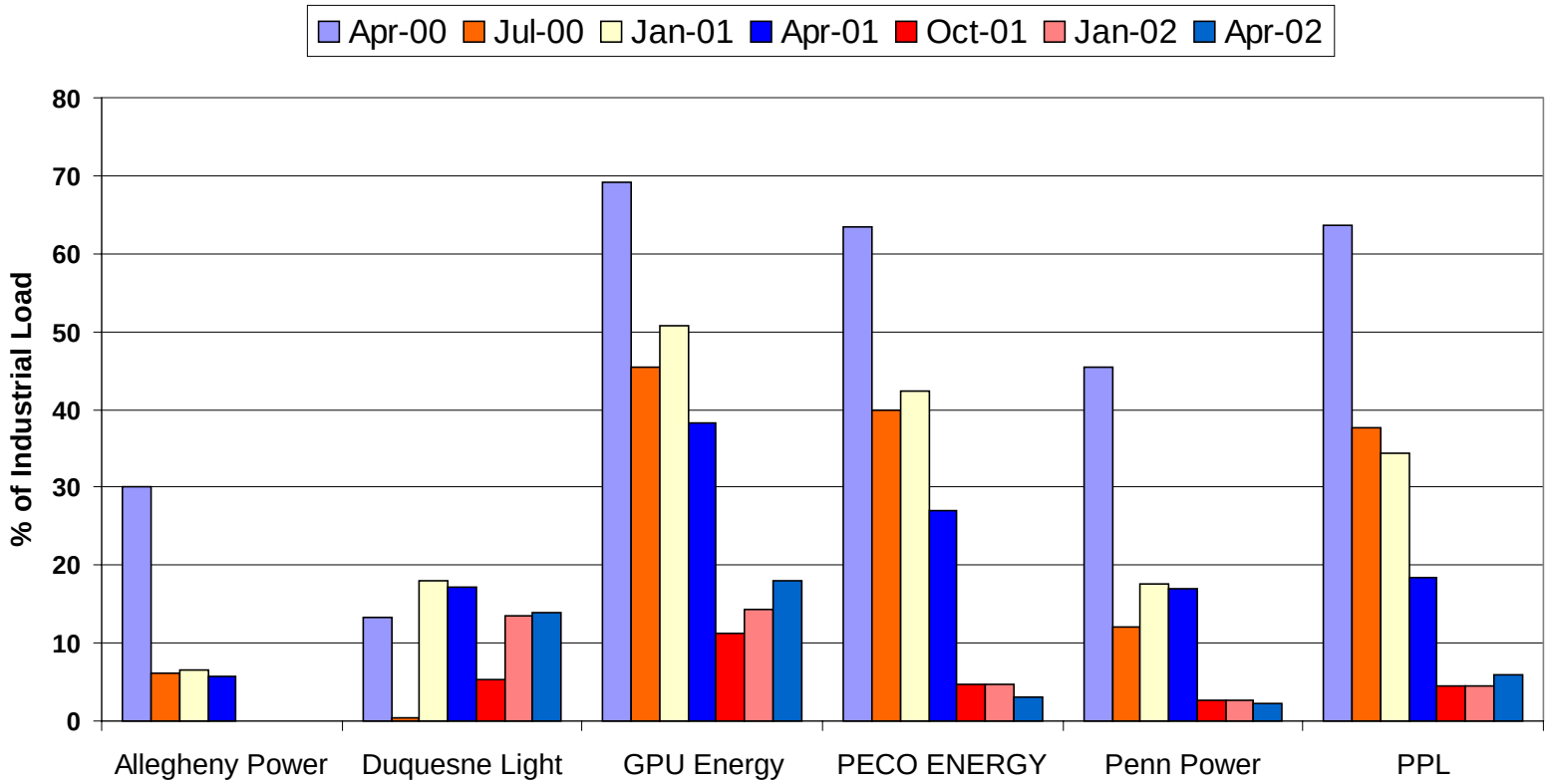
DEFAULT SERVICE PRICE

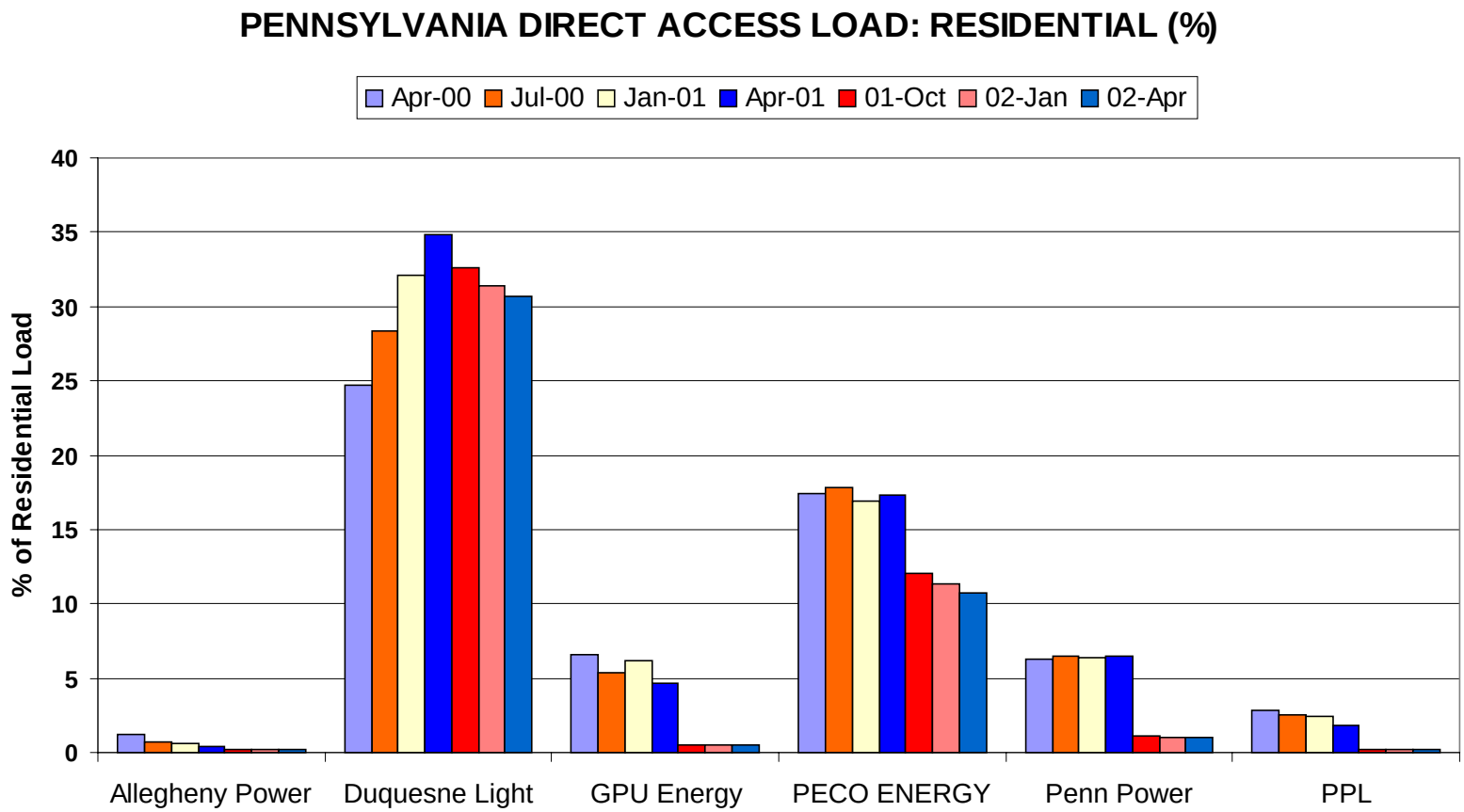
- In many cases the regulated default service price has been too low for competitive retailers to compete based only on price, especially for “mass market” customers where marketing and service costs are much higher than comparable costs in utility rates

- But raising default price often conflicts with other commitments regarding price levels (“competition will lead to lower prices”) and regulated incumbent cost recovery obligations (stranded cost and customer service)

- The fact of the matter is that the regulated generation component of retail prices is below competitive market price of electricity in many parts of the U.S.

PENNSYLVANIA DIRECT ACCESS LOAD: INDUSTRIAL (%)



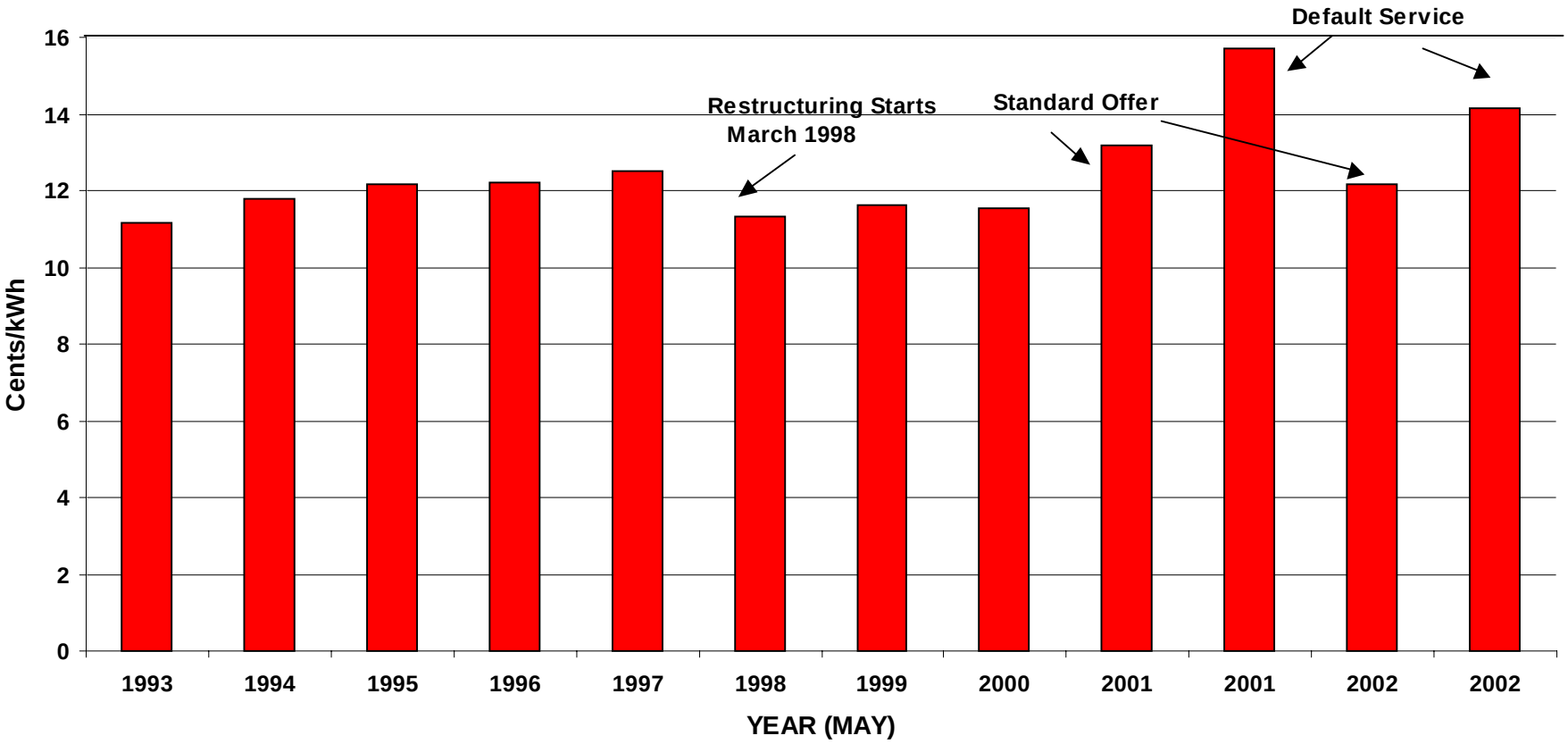


Excludes PECO customers involuntarily assigned to the New Power Company

CUSTOMER CHOICE IN MASSACHUSETTS % OF TOTAL LOAD

DATE	RESIDENTIAL	LARGE COMMERCIAL/ INDUSTRIAL	
April 99	**0.2 %**	**20.0 %**	
May 00	**0.2 %**	**17.3 %**	
February 01	**0.4 %**	**13.5 %**	
August 01	**0.1%**	**15.7 %**	
Jan 02	**0.4%**	**31.9%**	**[All-14.4%]**
April 02	**0.8%**	**42.2%**	**[All–21.1%]**

(Retail access started March 1998)


PAUL'S ELECTRIC BILL
Default Service
Restructuring Starts
March 1998
Standard Offer
16
14
12
10
8
6
4
2
0
Cents/kWh
1993
1994
1995
1996
1997
1998
1999
2000
2001
2001
2002
2002
YEAR (MAY)

CUSTOMER CHOICE IN NEW YORK STATE (% of Customers)

	JUNE 2000	JUNE 2001	NOV 2001	DEC 2001
RESIDENTIAL [%Load]	**2.3 %**	**3.5 %**	**4.4%**	**4.8% [5.0%]**
COMMERCIAL/ INDUSTRIAL [%Load]	**4.7%**	**5.4 %**	**6.1%**	**6.2% [26.0%]**

CUSTOMER CHOICE IN MARYLAND
MARCH 2002
(% of Consumption)

Company	Residential	Commercial /Industrial	
Allegheny	0 %	0 %	
BGE	0 %	1.6 %	
Connectiv	0 %	10.9 %	
PEPCO	14.1%	70.1 %	
TOTAL	3.6%	14.0%	[8.8%]

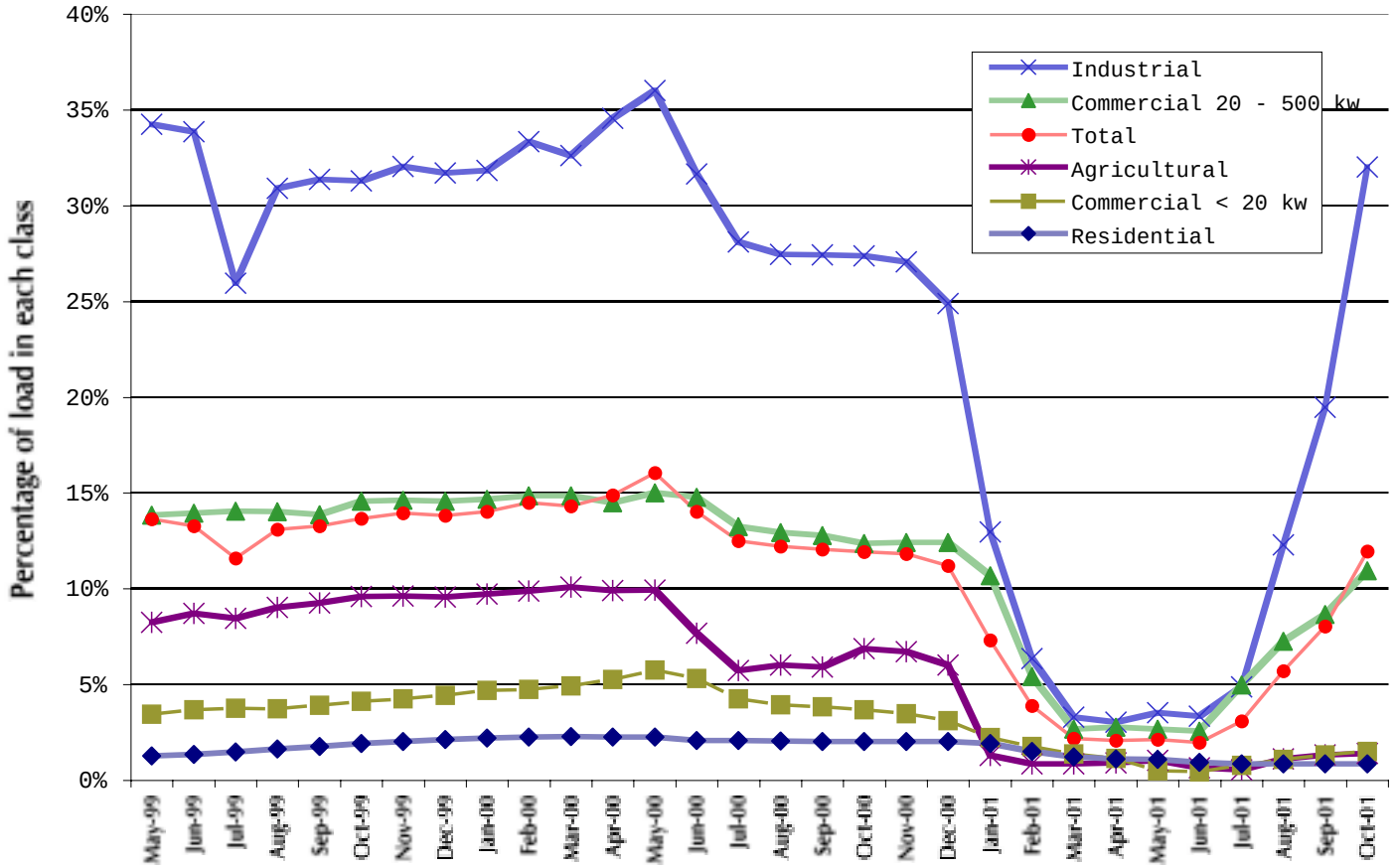
Customer choice began in July 2000

CUSTOMER CHOICE IN OHIO
DECEMBER 2001
(% of Consumption)

Company	Residential	Industrial	TOTAL
Cleveland Elec (FE)	55.5 %	17.8 %	28.6 %
Ohio Edison (FE)	15.5%	29.0 %	22.7 %
Toledo Edison (FE)	5.1 %	4.2 %	8.4 %
Cincinnatti G&E	0.4 %	1.5 %	4.0 %
C&S (AEP)	0.1 %	0 %	0.2%
Ohio Power (AEP)	0 %	0 %	0 %
Dayton P&L	0.0 %	17.1 %	6.7 %

Customer choice began in January 2001

Customers Choosing Non-Utility Servic
by percentage of class load



WHAT IS THE PROBLEM WITH U.S. RETAIL COMPETITION?

- Customer acquisition,billing, and service costs are much higher than anticipated, especially for small customers. Customers are "sticky," move frequently, have bad debts, and call with questions

- Current regulated rates or "default service rates" are equal to or less than wholesale market prices plus retail margin needed to cover retail service costs. In many regions regulated prices are below competitive market values

- Default service schemes have allowed customers to move back and forth between competitive and regulated services as wholesale market prices fluctuate since default prices often are capped

- States have been reluctant to remove regulated safety net and deregulate retail energy prices and future terms of retail competition are often uncertain

ISSUES

- The perceived failure of retail competition has helped to slow further progress with electricity sector reforms

- Peaceful coexistence of “competitive” states and “regulated” states on the same physical electrical network is unlikely

- Uncertainty over future role of retail competition and state regulation are undermining investment in generation and capacity because long-term contracting for power supplies has dried up as merchant generators face serious financial constraints and higher cost of capital

- Absence of a good retail procurement framework is undermining performance of wholesale markets more broadly (demand response, and forward contracting)

RETAIL COMPETITION CAN WORK

- Retail competition program has been reasonable successful in England and Wales

- There are several suppliers competing in each area and retail prices have fallen (more for large customers)

- The jury is still out on benefits for domestic and small commercial customers in my view
  - Prices were kept artificially high to encourage competitors
  - Retailing costs are quite high
  - Retail prices are rising and vary widely from suppliers to supplier
  - Retail prices are rising as price caps have been removed
  - Few “value added” services are being provided to small customers

ENGLAND AND WALES
1990-2001

- Separated ownership of generation, transmission, system operations, and distribution functions

- Functional separation of retail supply from distribution, requiring RECs incumbent retail supply affiliates to provide “default service” at regulated prices until caps gradually removed

- All retailing, metering and billing costs shifted to retail supply affiliates

- Phase in retail competition as retail and wholesale markets matured and allowed REC supply affiliates to compete with one another both inside and outside incumbent area

- Deregulate retail prices as competition matures

REAL ELECTRICITY PRICES (1990 = 100)

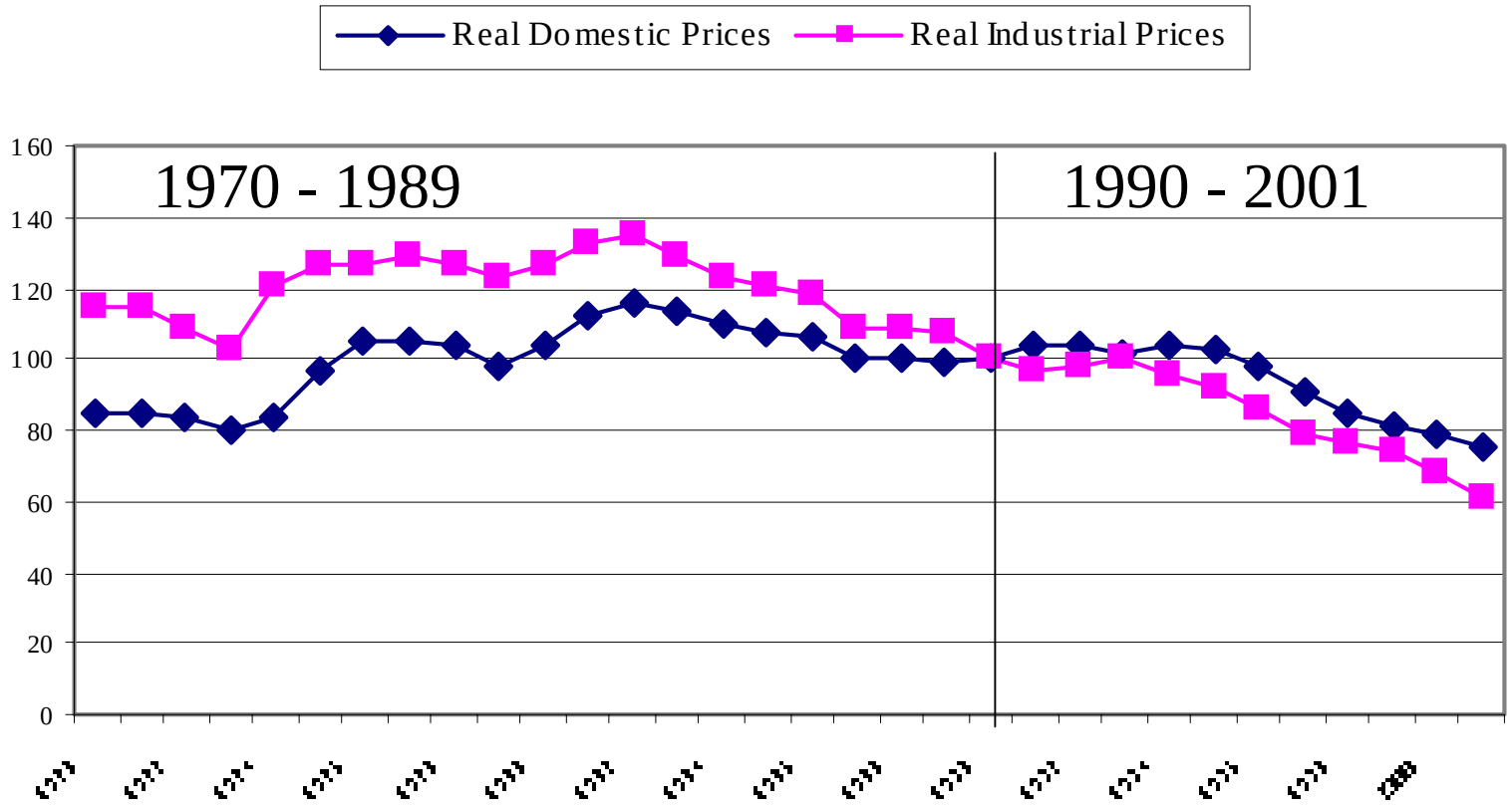
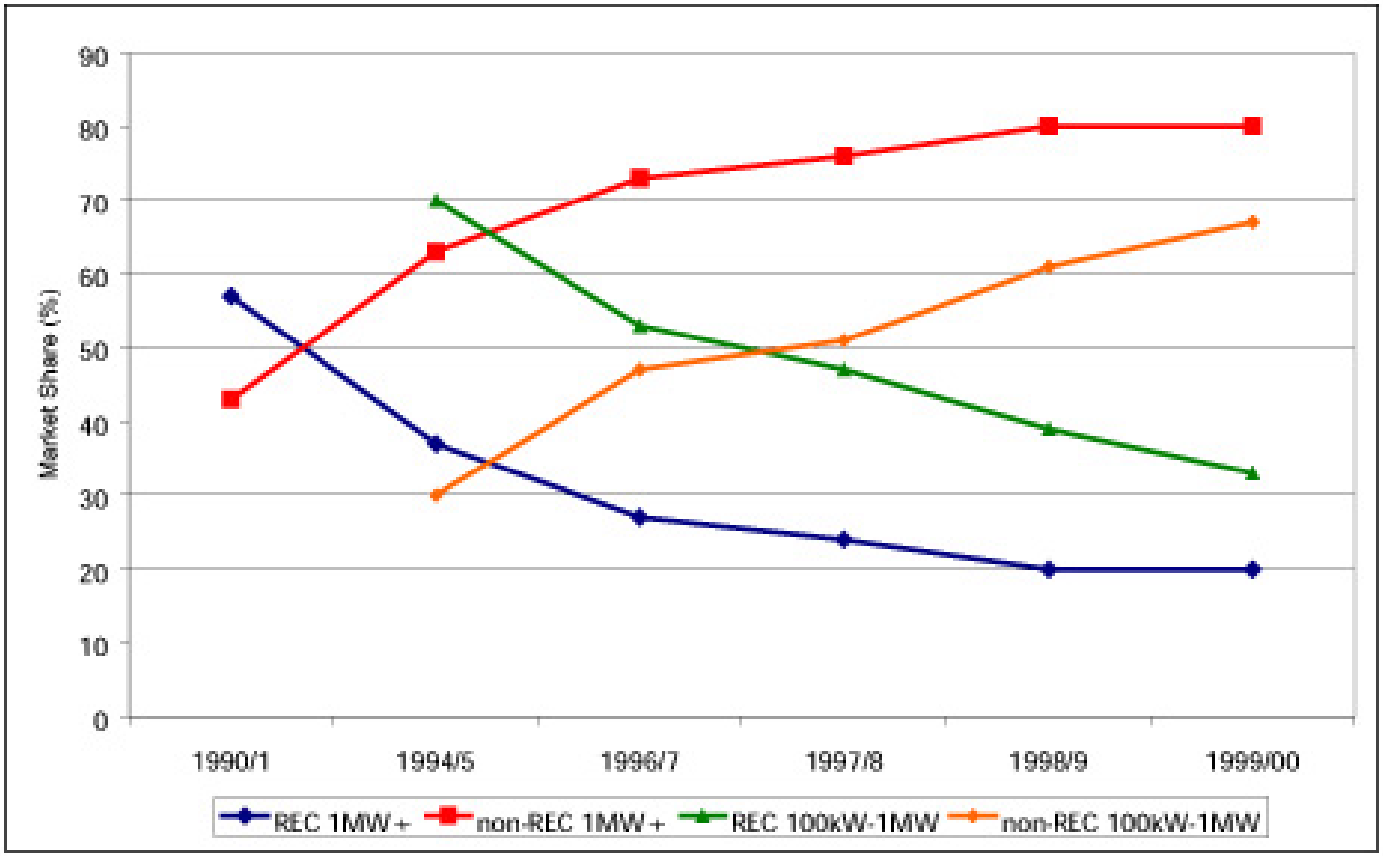


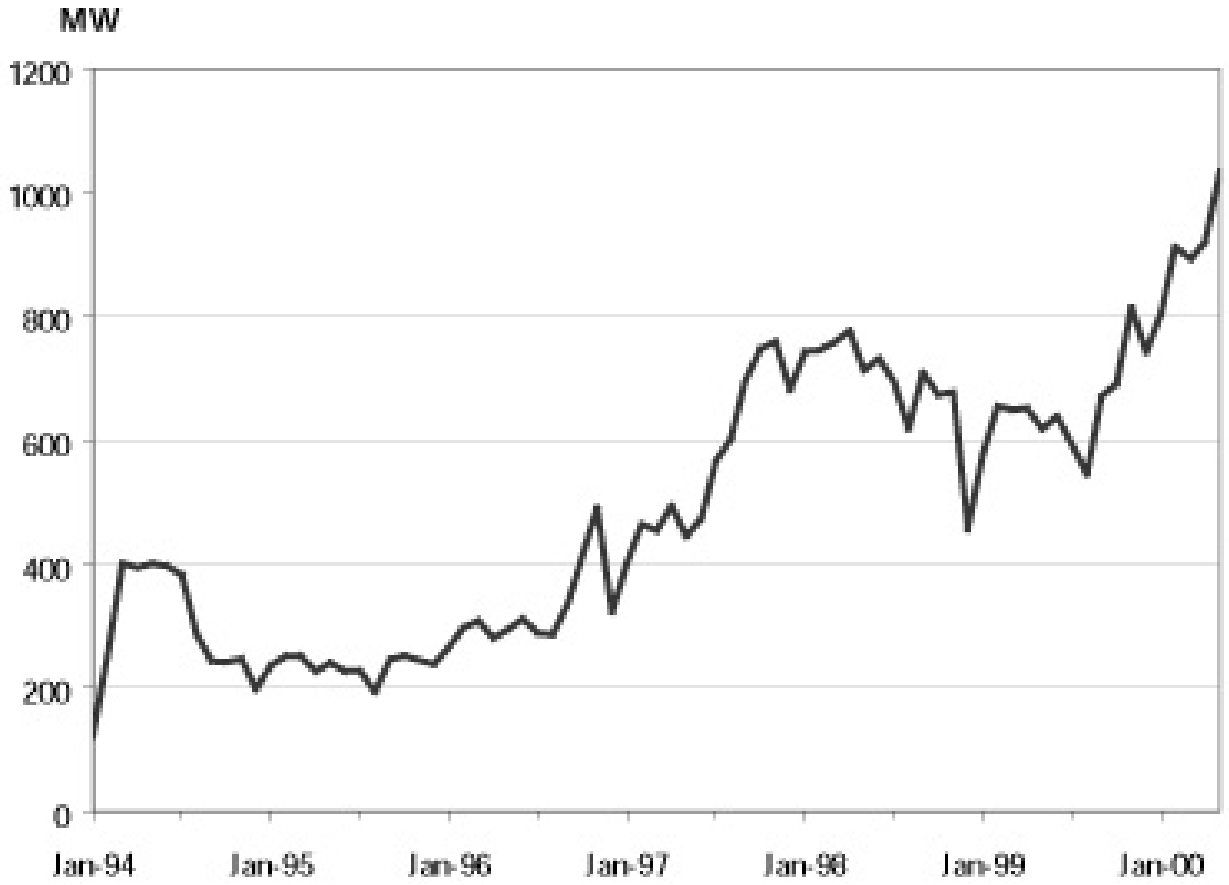
Figure 4.31: Market shares of the >100 kW competitive supply market[42]



Source: UK Energy Sector Indicators 2000, DTI.

Source: OFGEM

Figure 4.4: Monthly average demand-side availability bids



Source: OFGEM

Table 5.7 – Average market shares by customers supplied by payment method of ex-PES suppliers 'in area' compared to other suppliers

	Ex-PES suppliers 'in-area' market share (%)			Other suppliers share (%)		
	Direct debit	Other credit	Prepayment	Direct debit	Other credit	Prepayment
March 2000	78	85	94	22	15	6
September 2000	72	80	90	28	20	10
March 2001	67	76	85	33	24	15
June 2001	64	73	80	36	27	20

Note: Due to incomplete data, in a small number of cases assumptions have been made as to which categories customers on certain payment types fall within. About 3% of customers identifiably used some other form of payment method, and these have been excluded from the analysis.

Table 6.2: Domestic electricity price controlled prices and price caps

Region	Average Annual bill April 2000	Maximum average annual bill allowed by price caps April 2000	Under Price cap by	Average annual bill April 2001	Maximum average annual bill allowed by price cap April 2001	Under price cap by
	£	£	%	£	£	%
Eastern	219.39	219.48	0.0	219.38	223.81	2.0
East Midlands	224.79	226.91	0.9	224.80	229.88	2.2
London	234.95	235.06	0.0	234.96	238.69	1.6
Manweb	256.11	256.14	0.0	251.06	251.10	0.0
Midlands	231.76	231.79	0.0	231.76	236.25	1.9
Northern	236.80	236.83	0.0	240.34	242.65	1.0
NORWEB	230.29	230.28	0.0	230.27	231.96	0.7
SEEBOARD	224.93	224.93	0.0	224.93	228.92	1.7
Southern	239.66	239.71	0.0	240.87	242.95	0.9
SWALEC	272.69	272.76	0.0	267.23	271.39	1.5
South Western	253.24	253.27	0.0	256.11	257.10	0.4
Yorkshire	231.92	231.92	0.0	231.92	232.02	0.0
Sc Power	259.35	261.82	0.9	264.92	264.92	0.0
Sc Hydro	253.84	253.87	0.0	259.45	261.00	0.6

Source: OFGEM

	London Area		
	Gas only	Elec only	DF
incumbent	**£243**	**£255**	**£499**
Amerada	£257	£302	£560
Atlantic	£231	£257	£489
Basic Power		£260	
BGT	£243	£246	£489
Cambridge	£232		
Countrywide	£288		
TXU Energi	£234	£257	£491
London Elec	£229	£255	£474
Northern	£221	£270	£491
npower	£234	£270	£504
Powergen	£238	£244	£482
Scottish Power	£221	£262	£484
Seeboard	£247	£257	£504
Southern	£235	£264	£499

	Seeboard		
	Gas only	Elec only	DF
incumbent	**£243**	**£249**	**£493**
Amerada	£257	£302	£560
Atlantic	£231	£245	£477
Basic Power		£239	
BGT	£243	£230	£474
Cambridge	£232		
Countrywide	£288		
TXU Energi	£234	£245	£479
London Elec	£229	£235	£453
Northern	£221	£267	£488
npower	£234	£267	£500
Powergen	£238	£231	£469
Scottish Power	£221	£245	£467
Seeboard	£247	£249	£492
Southern	£235	£258	£493

Percentage of domestic standard credit electricity customers not with home supplier by region, Q3 2001

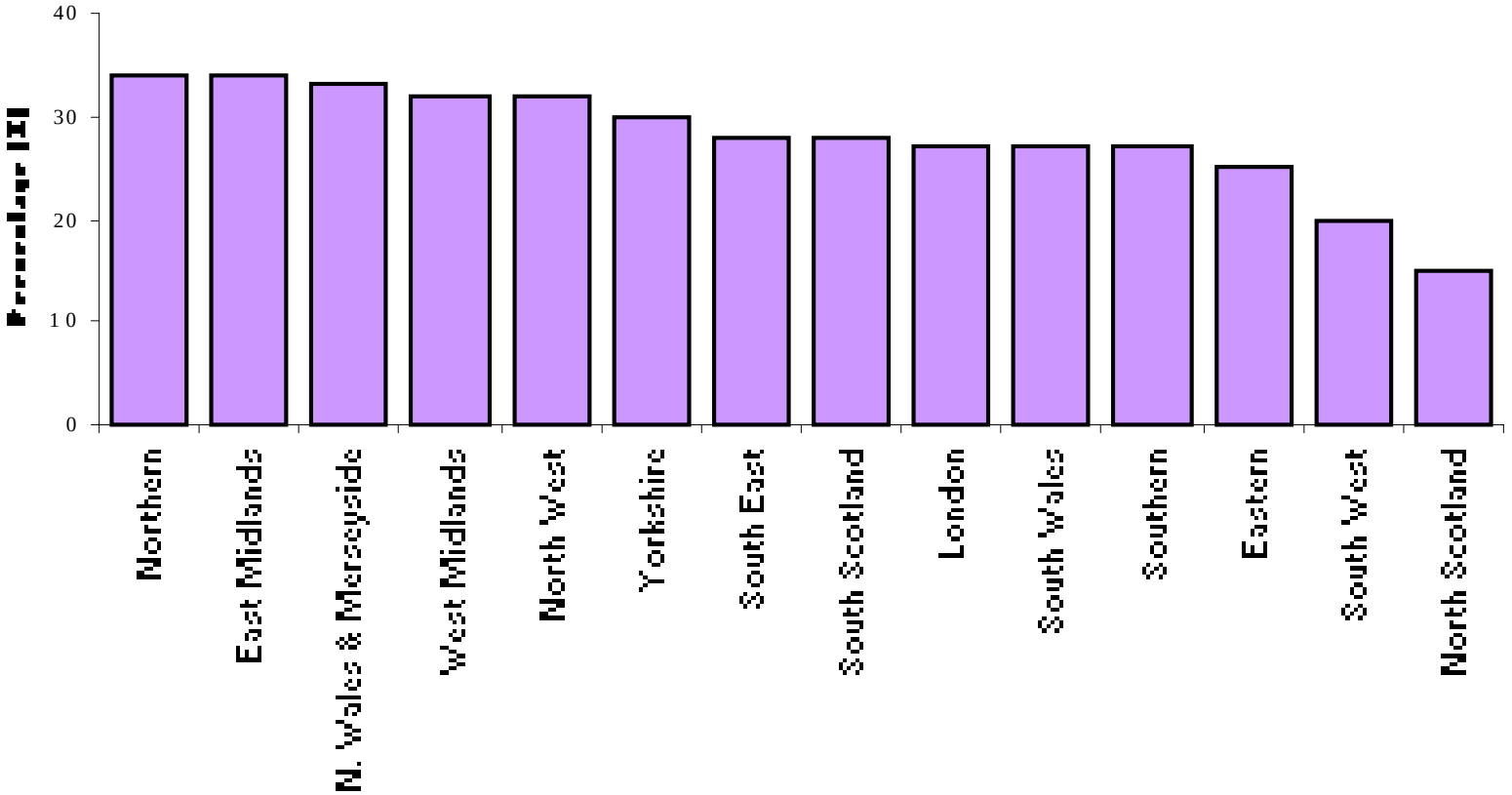


Table 3.5 – Satisfaction levels of electricity customers – Summer 2001

Customer group	Satisfied	Neither satisfied nor dissatisfied	Dissatisfied
All electricity customers	87%	6%	3%
By switching			
- switchers	81%	8%	5%
- non-switchers	91%	5%	2%
By payment type			
- Direct Debit	88%	6%	3%
- Quarterly cash or cheque	86%	7%	3%
- prepayment	86%	7%	5%

Base: All electricity customers (c. 2310)

Source: OFGEM

WHAT IS TO BE DONE?

- Are states committed to real retail competition and ready to deregulated prices for competitive retail services?
  - Prices can go up or down in competitive markets
  - Electricity prices can be very volatile
  - Some groups of customers are more costly to serve than others and are presently subsidized
  - Mixing regulation with competition always leads to problems

- Do states want to treat small customers differently from larger customers?
  - Could adopt core/non-core model as in gas
  - Competitive “wholesale” procurement with portfolio of contracts to serve core
  - Retail competition for non-core with high-priced backstop

EXPAND GOALS FOR RETAIL COMPETITION

- Distinguish between large customers and “mass market” customers
- Lower retail prices for power compared to UDC supplies
- Enhance customer control over market risk and reliability
- Foster demand management, energy efficiency, customer-specific reliability and power quality products
- Facilitate integration of supply and management of multiple services (electricity, gas, telecom)
- Support development of efficient wholesale markets
  - Real-time pricing and demand management
  - Long-term contracts with generation suppliers
  - Smart buying and buying power
- Phase in “unattractive” default service terms

A MODEL

- Allow incumbents to create separate affiliates that take on all retail supply and customer service (and cost) responsibilities based on an initial regulated “standard offer” price for regulated and competitive services. (separation rules from T&D)
- Standard offer price for generation services is “market valued” and any stranded costs or benefits of incumbent generating assets is reflected in distribution charges for specified time periods
- Allow incumbents to hedge power supply risks associated with the default service commitments (e.g. five years) and take responsibility for their customer service costs
- Price to beat includes a component for customer service costs as well as market-valued generation costs
- After a specified fraction of customers (e.g. 40%) in each class shift to ESP, retail supply by incumbent is deregulated
- Default service obligation is auctioned to third party