LOUISIANA ELECTRIC UTILITIES

VOLUME 2

STATISTICAL DIGEST: 1960-1998

WITH AN UPDATE SUMMARY FOR 1999

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FOREWORD

Louisiana Electric Utilities, Volume 2, April, 2000 is an update of a similarly entitled report produced in September, 1995. A further update of summary data for 1999 is now also incorporated.

Volume 1, Louisiana Electric Utilities, looked at the history of the electric industry in Louisiana. **Volume 2**, first produced in September, 1995, updated the annual statistics of electricity supply and demand in the state. This edition of Volume II furthers the historical time series of data on Louisiana's utilities

The Technology Assessment (TA) division of the Department of Natural Resources (DNR) has expanded its coverage of statistical reports on the state of the electric power industry in Louisiana from the 2 part series on Electrical Utilities to include a 3rd, entitled **NON-UTILITY GENERATION OF ELECTRICITY IN LOUISIANA (NUGs)**, last update December, 1998. NUG spotlights the growing importance of NUGs to electric power production in Louisiana.

The **Louisiana Annual Energy Facts** publication (most recent edition dated October, 2000) now includes annual data on lignite production in the state.

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INDUSTRY HIGHLIGHTS

Over the past 27 years the U. S. electricity markets have undergone significant change. Historically, for most customers, all services involved in producing electricity and delivering it to the consumer have been provided by one company. The rates for these services were regulated by state Public Service Commissions (and in certain cases utility companies were also regulated under a federal law known as the Public Utilities Holding Company Act of 1935, PUHCA). In Louisiana, the regulatory agency responsible for rate making is the Louisiana Public Service Commission (LPSC), an independently elected public body.

But the roots of this change in electricity markets can be traced back even as far as 1954. It was at that time the Supreme Court ruled the Federal Power Commission (FPC, the forerunner to today's Federal Energy Regulatory Commission, FERC) had authority to control the well head price of natural gas.

These price controls eventually led to a decline in natural gas deliverability capacity. When the oil exporting countries (largely of the Middle East and Africa) reacted negatively to certain U. S. foreign policy initiatives in 1973-74, the result was an embargo on delivery of oil to the U. S. Without any spare natural gas delivery capacity, substitution of natural gas for oil in many electric power generating plants was not possible.

This started the U. S. on a series of legislative and regulatory initiatives leading toward full deregulation of oil and natural gas well head prices, open access for natural gas producers and distributors to interstate natural gas transmission pipelines, the attraction of non-utility generating sources into electric power generation, open access for non-utility generators to electric power transmission and distribution lines, and ultimately consumer choice, both for natural gas and electricity. Unfortunately, legislators and regulators almost always sell the virtues of deregulation as ensuring lower costs for consumers.

The difference between deregulating airline, banking, and telephone markets, and the natural gas and electric power market, is that (1) energy is a basic human need and, for delivery, requires a direct connection to a physical facility, be that home or plant, (2) the fossil fuel explorers must make large investments, and sometimes with long lead times, to search for uncertain supplies of reserves to power electric generation, and then (3) commercialize these energy sources, only to face a consumer market that has been granted "choice". These explorer/investors have to ask at what price will they be willing to assume this market volatility risk? And will the market continue to purchase this specific supply for a time period sufficient to allow recovery of the investment and profit? The outcome for energy market deregulation is far from certain, and lower prices for consumers would appear to be anything but assured.

Much of the restructuring debate today, across the nation, is about how to unbundle services that were previously integrated, move away from rate based pricing, and open markets to consumers and suppliers to ensure competitive market prices. However, regulators are not yet opening the ownership of interstate pipelines, or electric power transmission and distribution lines to competition, only competitive access. [NOTE: A recent FERC Order, 2000, may require the spin off and shared ownership in some electric power transmission lines.]

When an industry becomes deregulated the most common initial economic activity is merger and consolidation. On the surface this will reduce operating costs and lead to greater operating efficiencies. But it also results in more market power being concentrated in the surviving entities. Greater market power could potentially lead to higher prices. The hope of regulators and economists is that opening market access to other competitors will result in the more rapid introduction of new technologies and new competitors which will subsequently lower costs for all consumers. Therefore the transition to an open market is fraught with uncertainty, both for consumers, competitors, and regulators.

In Louisiana, the Public Service Commission (LPSC) has been quite prudent in its approach to electric restructuring. Hearings were begun as early as 1997. The market power of incumbent utilities are currently being assessed in on going hearings. These hearings are designed to set the stage for determining under just what kinds of restructuring regulations consumers can be given "choice" that is dependable and affordable. These hearings are targeted to produce a blueprint for action by mid to late 2000. (NOTE: Copies of t his report are available from the LPSC.)

In the meantime, ownership changes and corporate restructuring are proceeding in the state. Cajun Electric Cooperative has been in bankruptcy for a number of years. The generating assets of Cajun have recently been sold to NRG Energy, Inc., a wholly owned independent power producing (IPP) subsidiary of Northern States Power Company, an investor owned utility (IOU). So ownership of nearly 7.6% of Louisiana's IOU generating capacity has shifted from a coop to a private sector, non-utility merchant power provider.

Similarly, CLECO, an in-state investor owned utility, has created a new subsidiary to own and operate merchant power generating capacity. CLECO's subsidiary is building a merchant power plant in Louisiana. This subsidiary also operates a new co-generating facility in Louisiana under what is called a "tolling" arrangement for Koch Industries.

IS NATURAL GAS PRICE DEREGULATION A HARBINGER OF ELECTRIC PRICES?

The well head price of natural gas was completely deregulated as of 1 January, 1993. Using 1992 as the base year, and using Energy Information Administration (EIA) average prices to the consumer sectors, what has been the market price results for the various consumer segments?

Changes in Price since complete deregulation of natural gas prices as of 1-1-1993

	Base Year	Cumulative Price Increase (Decrease) from Base Year							Avg. Price
Market Sector	**1992 Price**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**1999 (10 mos.)**
Residential	$5.89	$0.27	$0.52	$0.17	$0.45	$1.05	$0.93	**$0.69**	$6.58
Commercial	$4.88	$0.34	$0.56	$0.17	$0.52	$0.92	$0.60	**$0.33**	$5.21
Industrial	$2.84	$0.23	$0.21	-$0.13	$0.58	$0.75	$0.30	**$0.09**	$2.93
Electric Utility	$2.36	$0.25	-$0.08	-$0.34	$0.33	$0.42	$0.04	**$0.08**	$2.44
City Gate	$3.01	$0.20	-$0.06	$0.23	$0.33	$0.65	$0.06	**$0.02**	$3.03
Transmission (spread)	$1.27	-$0.10	-$0.05	-$0.04	-$0.20	$0.09	-$0.14	-$0.28	$0.99
Well Head	$1.74	$0.30	$0.11	-$0.19	$0.43	$0.58	$0.20	**$0.30**	$2.04

INDUSTRY HIGHLIGHTS
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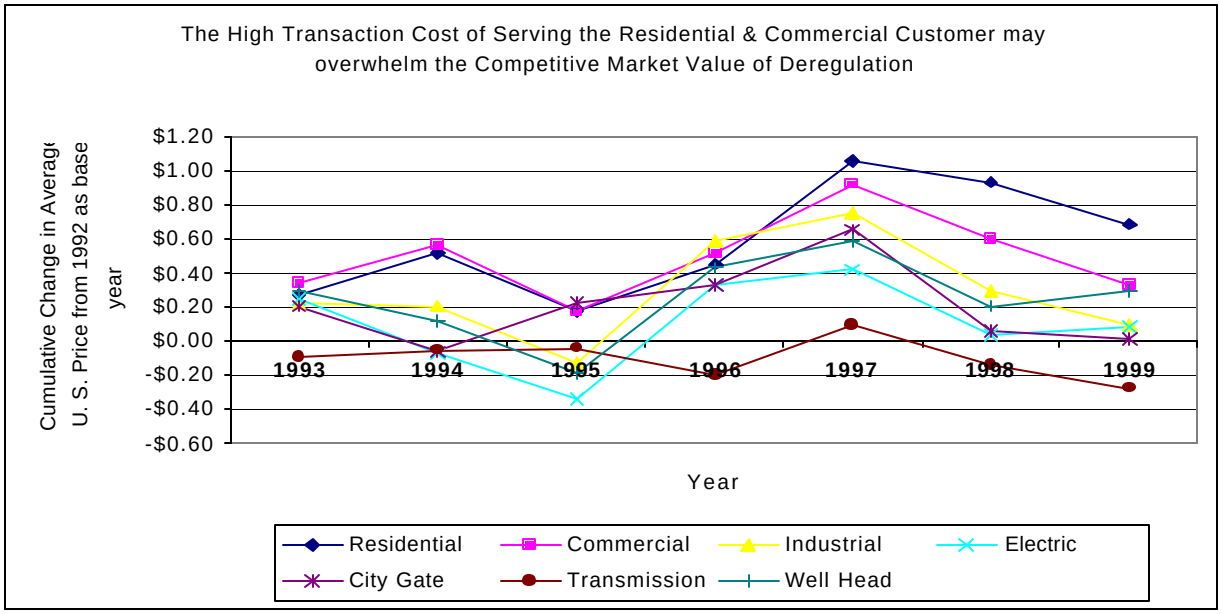
Deregulation of natural gas well head prices has resulted in a cumulative increase in market price at the well head, from the average price of 1992, the last year of regulation of well head prices, through 10 months of 1999, of $0.30 per million cubic feet (Mcf). The large natural gas consumers with consumer market power, i.e., the local gas distribution companies (City Gate), the electric utilities, and the industrial consumer all have experienced only small cumulative increases in price with the advent of deregulation, and increases that are below the price increase at the well head.

The 2 segments with the least amount of market power, the residential and commercial customers, have experienced the greatest price increases.



Certainly these 2 segments (residential and commercial) represent the highest cost to service, i.e., each billing unit consumes small quantities of natural gas relative to the cost of reading the meter and invoicing the transaction.

So are the legislators incorrect to promise “reduced costs” as a result of deregulation of the natural gas and electricity sectors? For natural gas? For electricity? For all consumer sectors? For only select consumer sectors? Perhaps more time is required to determine the answer to these questions?

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STATE TRENDS

Just as in the State of California, Louisiana consumes more electricity than is generated within the state.

Can California Happen Here? MM kwh

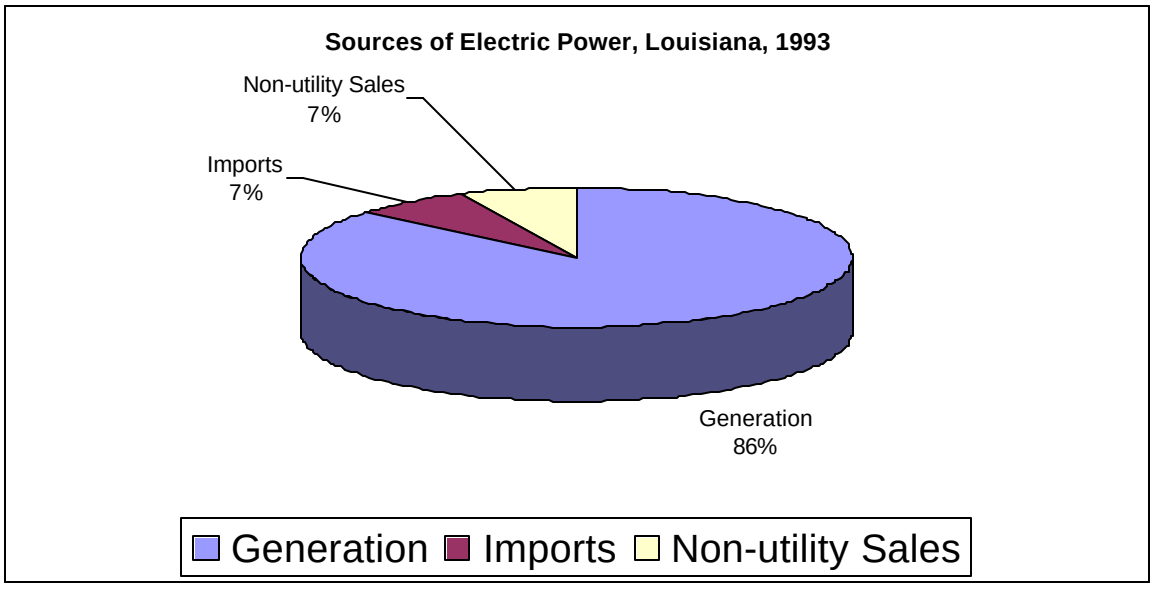
Year	Consumption	Generation	Non-utility Sales	Imports
1993	67,754	58,353	4,769	4,632
1994	70,145	60,170	4,389	5,586
1995	72,728	65,552	3,592	3,584
1996	75,270	58,643	3,385	13,242
1997	71,670	61,120	3,828	6,722
1998	77,716	64,793	4,080	8,843
1999	78,267	64,837	4,300	9,130

Imports have become a more important source of electricity for Louisiana's consumers.

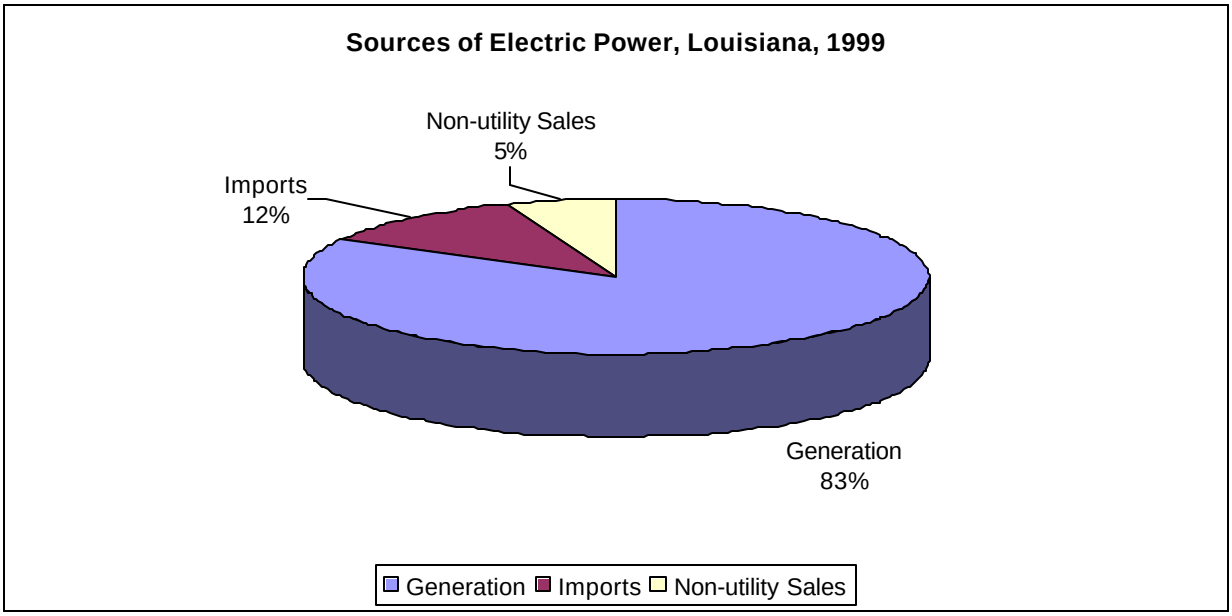
Can California Happen Here? MM kwh

Year	Consumption	Generation	Non-utility Sales	Imports
1993	67,754	86.12%	7.04%	6.84%
1994	70,145	85.78%	6.26%	7.96%
1995	72,728	90.13%	4.94%	4.93%
1996	75,270	77.91%	4.50%	17.59%
1997	71,670	85.28%	5.34%	9.38%
1998	77,716	83.37%	5.25%	11.38%
1999	78,267	82.84%	5.49%	11.67%

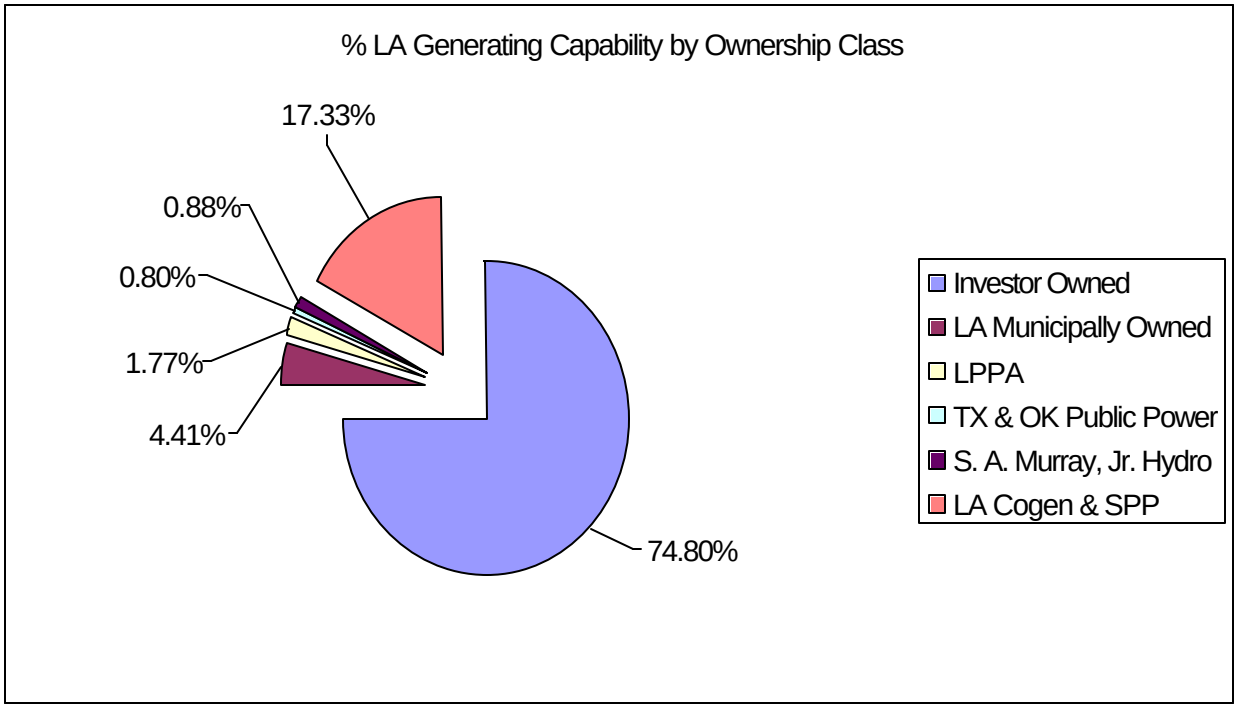
In 1993 Imports of electricity accounted for only 7% of electricity consumed.



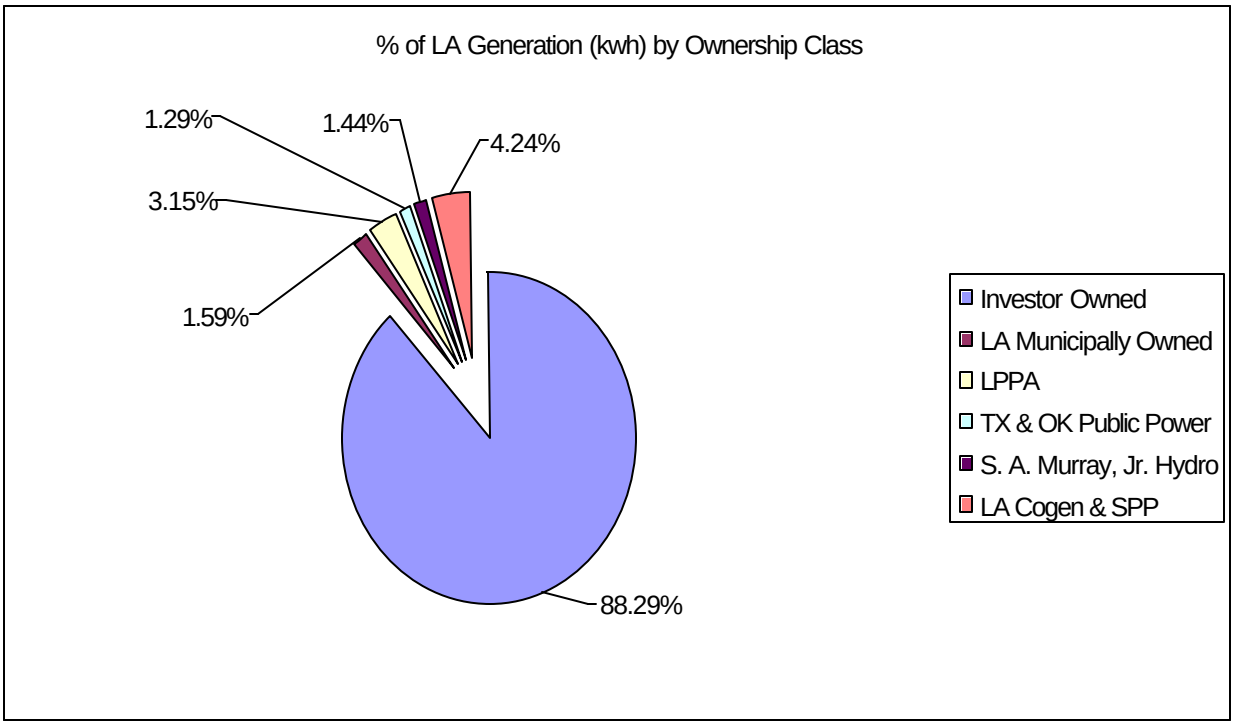
By 1999 that figure had grown to 12%.



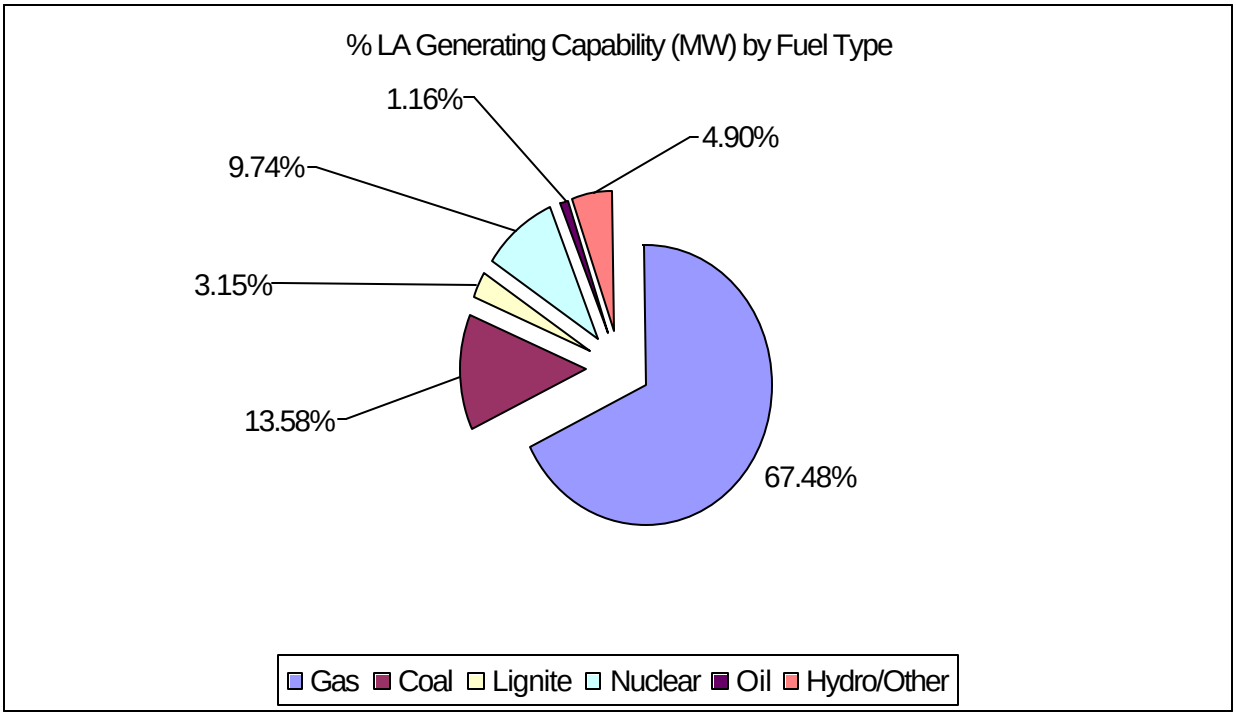
Investor owned utilities dominate generating capability in the state.



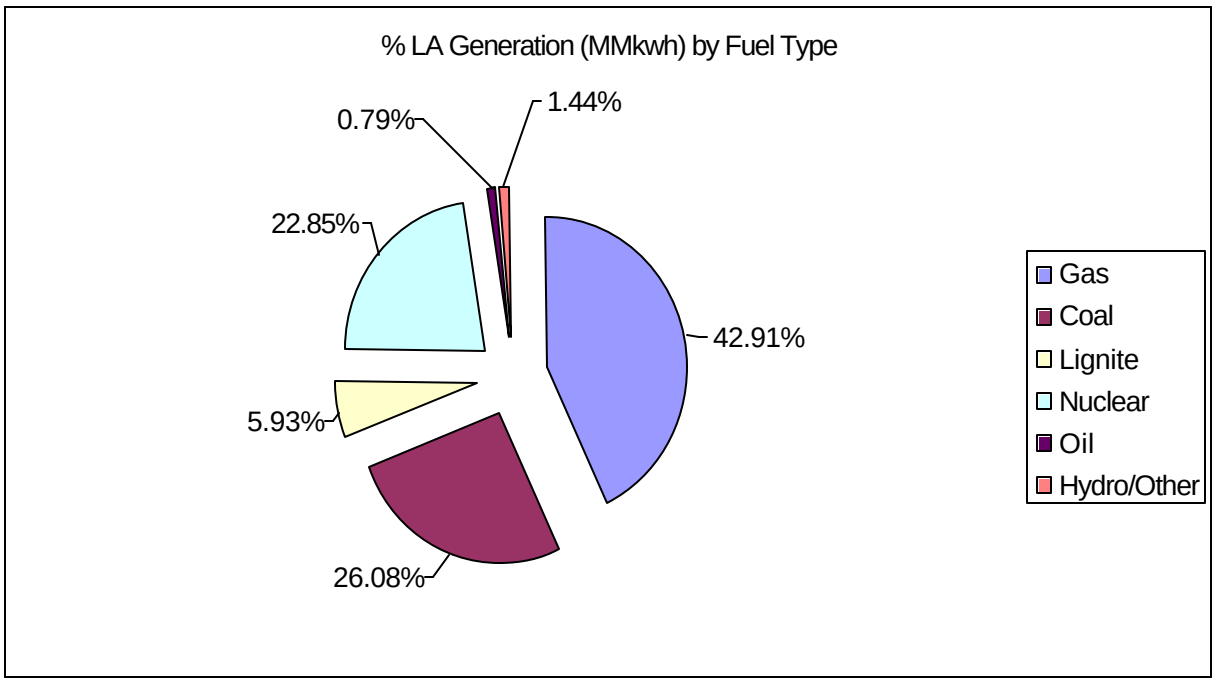
And Investor owned Utilities generate even more of actual consumption than capability would seem to indicate.



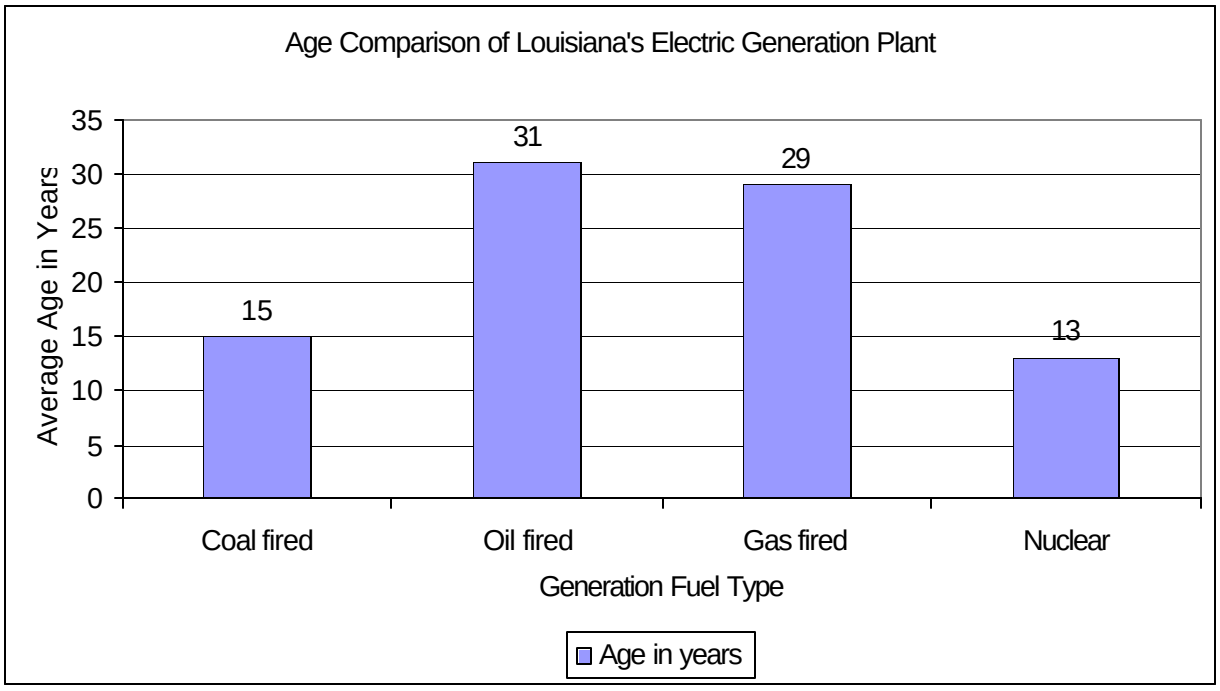
Natural gas fired generation dominates the type of fuel for Louisiana's generating capability.



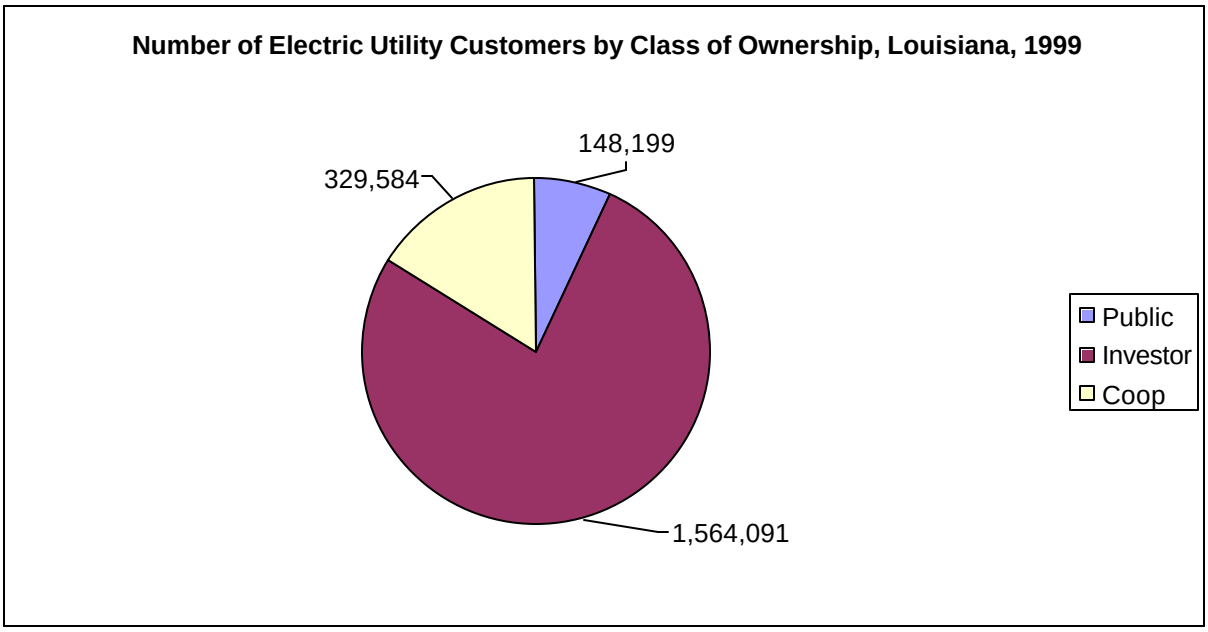
But coal and nuclear generation account for the dominate portion of actual electricity generation.



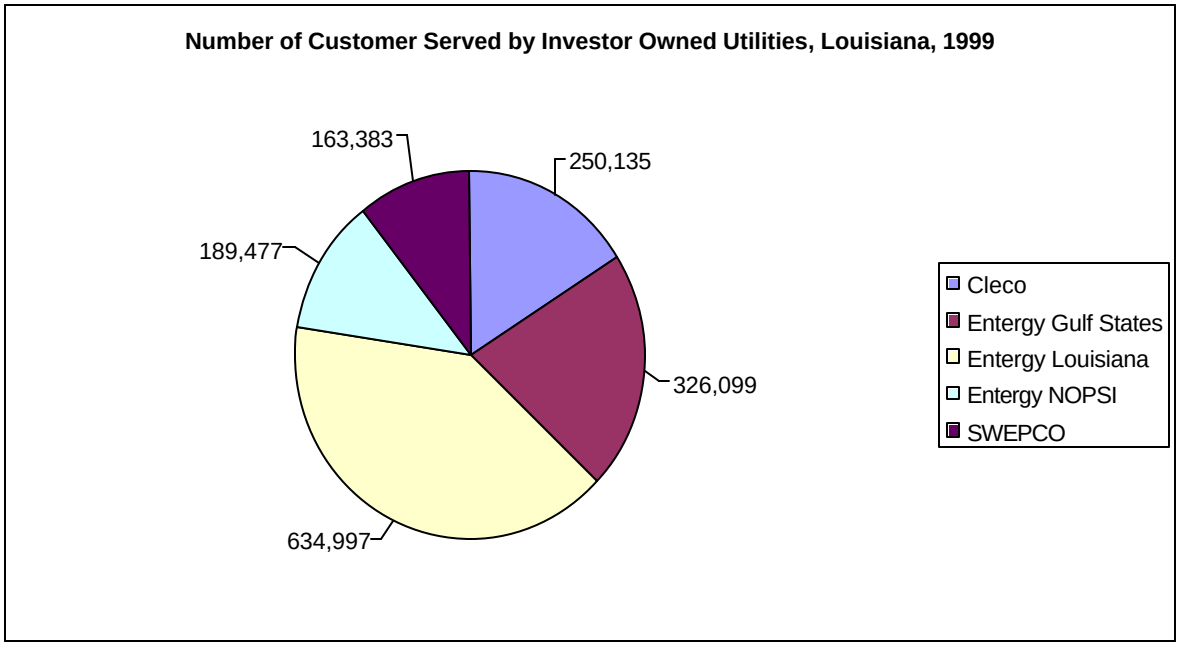
Part of the explanation for that is the relative age of natural gas fired generation plant. Another part is the relative cost of operation of older natural gas fired plant compared with coal and nuclear, both because of age/inefficiency, and the volatility of natural gas prices.



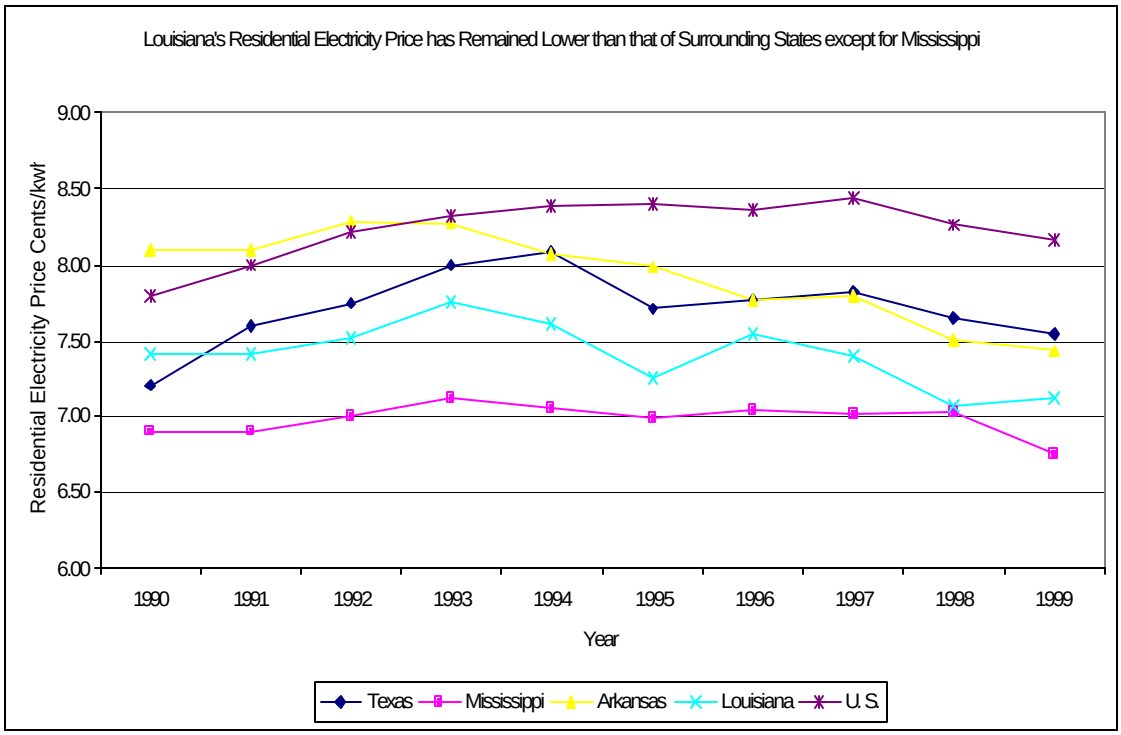
Investor owned utilities serve over 75% of Louisiana's electricity consumers.

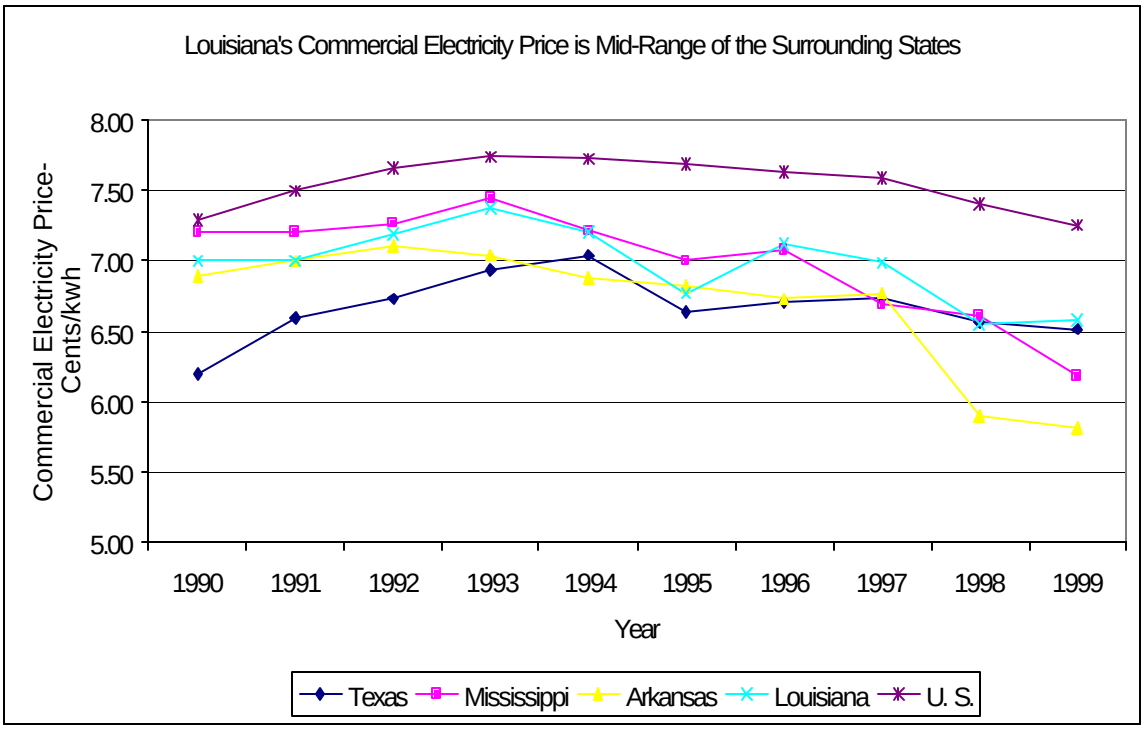


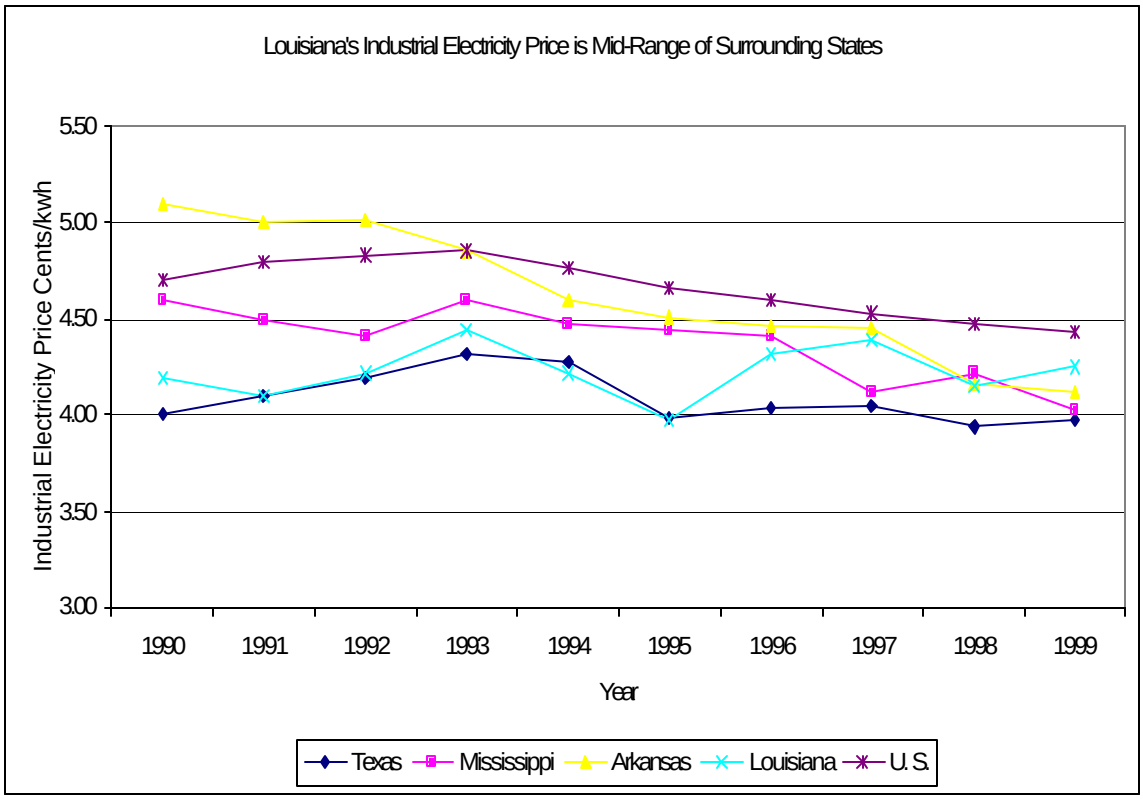
Within this number, the Entergy system serves over 72% of that total, or in excess of 50% of all consumers in Louisiana.



The price of electricity to Louisiana's consumers has remained well below the national average, and competitive with our neighboring states.







Could California happen here? It could. But as long as State officials do not try to cap the price of electricity the State should be able to continue to "purchase" wholesale electricity generated outside the State and import it for use by our consumers.

There is no guarantee that in-state generation self sufficiency would balance demand/supply relationships in a deregulated electricity market place. Consumers would still be required to pay market prices to attract and hold generation demand–although in-state (generation) self sufficiency would certainly increase the likelihood of price competitive demand/supply balance.

Our state vulnerability lay in the number of households whose incomes are below national averages. These are the consumers who would be most disadvantaged by a rapid increase in electricity prices.

Sustained economic growth within the State accomplishes both objectives–attracting added electric power generation, and raising consumer incomes.

CONSUMPTION

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CONSUMPTION

1. In 1998, Louisiana's residential, commercial, industrial and other electricity consumers used a record 77,716 gigawatts (GWH) of electric power (Table 1, 2; Figure 1).
2. The industrial sector continued as the largest consuming segment, at 30,999 GWH (not a record level), or nearly 40%, of total electricity consumption (Table 1, 2; Figure 1).
3. Residential consumption reached a record of 26,709 GWH, or 34.37%, of total electricity consumption (Table 1, 2; Figure 1).
4. Commercial consumption reached a record of 17,274 GWH, or 22.23%, of total electricity consumption (Table 1, 2; Figure 1).
5. Using 1986 as the base year, total electricity consumption through the period 1986-1998 has grown at a 2.25% compound annual rate (Table 3).
6. Residential consumption has grown at a 2.24% compound annual rate (Table 4).
7. Commercial consumption has grown at a 3.01% compound annual rate (Table 5).
8. Industrial consumption has grown at a 2.46% compound annual rate (Table 6).
9. "Other" electricity consumption, defined as public street/highway lighting, other public authorities, railroads/railways and interdepartmental sales, has declined at a -2.71% compound annual rate since 1986 (Table 7).

TABLE 1
LOUISIANA ELECTRIC UTILITIES ELECTRICITY SALES
BY CUSTOMER SECTOR - GWH
1960-1998

YEAR	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER*	TOTAL
1960	2,382	1,832	4,325	460	8,999
1961	3,224	2,314	4,420	818	10,776
1962	3,806	2,482	4,955	718	11,961
1963	4,138	2,774	5,374	986	13,272
1964	4,628	2,987	5,836	1,075	14,526
1965	5,093	3,217	6,732	1,207	16,249
1966	5,743	3,615	8,022	1,337	18,717
1967	6,337	4,092	8,940	1,662	21,031
1968	7,318	4,607	10,358	1,883	24,166
1969	8,314	5,012	11,789	2,152	27,267
1970	9,097	5,443	12,896	2,174	29,610
1971	9,587	5,774	13,486	2,280	31,127
1972	10,872	6,353	15,251	2,438	34,914
1973	11,732	6,771	16,580	2,765	37,848
1974	11,649	6,845	17,360	2,729	38,583
1975	12,536	7,619	17,146	2,654	39,955
1976	13,373	8,129	19,535	3,008	44,045
1977	14,999	8,907	23,234	3,443	50,583
1978	16,024	9,499	23,834	3,600	52,957
1979	16,655	9,587	27,312	3,895	57,449
1980	18,296	10,871	27,035	4,277	60,479
1981	18,552	10,861	27,337	4,347	61,097
1982	18,280	10,842	25,221	4,030	58,373
1983	16,083	10,813	23,779	4,092	54,767
1984	19,265	11,456	26,139	4,222	61,082
1985	20,168	11,946	24,567	3,961	60,642
1986	20,464	12,105	23,149	3,800	59,518
1987	19,711	11,893	23,637	3,567	58,808
1988	19,449	12,507	23,964	3,201	59,121
1989	20,037	12,560	25,511	3,072	61,180
1990	21,037	13,014	26,607	2,670	63,328
1991	21,163	13,041	27,418	2,565	64,187
1992	20,785	12,917	28,332	2,561	64,595
1993	22,430	14,398	28,439	2,487	67,754
1994	22,631	15,024	29,897	2,593	70,145
1995	24,047	15,563	30,674	2,444	72,728
1996	24,311	15,920	32,544	2,495	75,270
1997	24,876	15,293	28,677	2,824	71,670
1998	26,709	17,274	30,999	2,734	77,716

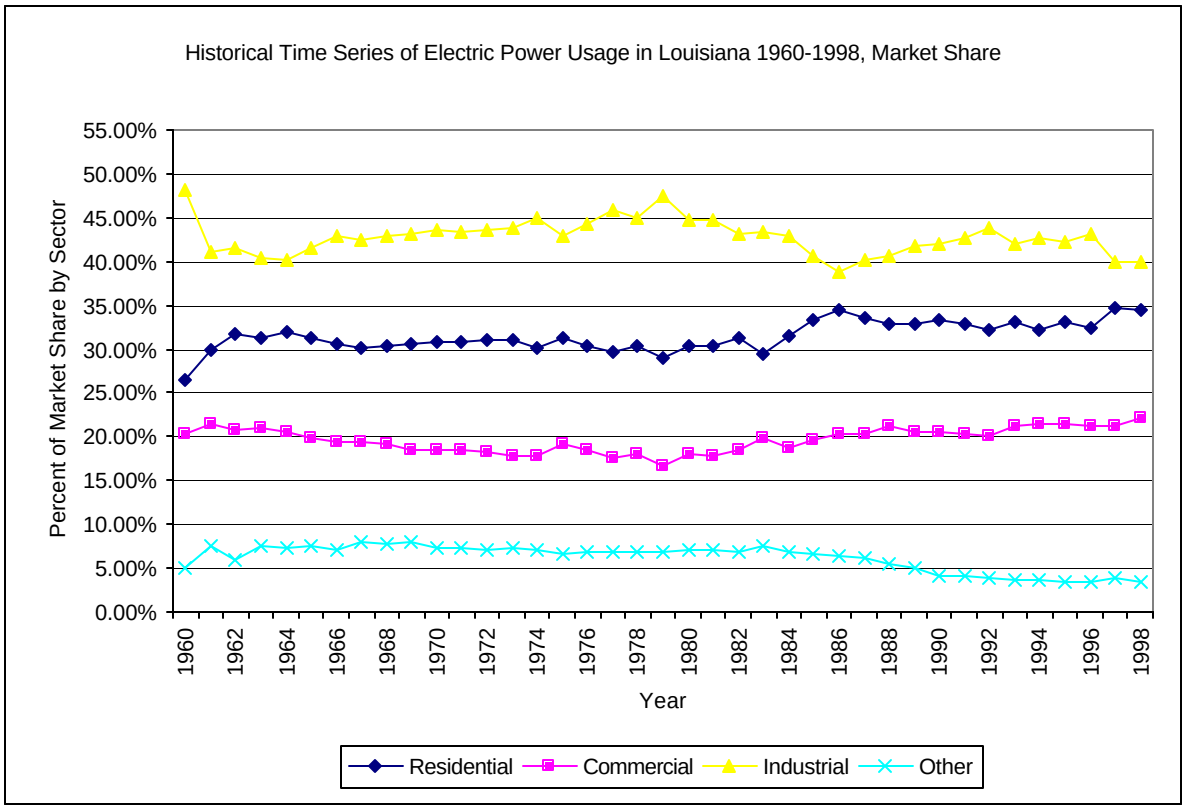
* Includes public street/highway lighting, other public authorities, railroads/railways and interdepartmental sales
Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.

TABLE 2
LOUISIANA ELECTRIC UTILITIES ELECTRICITY SALES
BY CUSTOMER SECTOR - GWH
1960-1998

YEAR	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER*	TOTAL
1960	26.47%	20.36%	48.06%	5.11%	100.0%
1961	29.92%	21.47%	41.02%	7.59%	100.0%
1962	31.82%	20.75%	41.43%	6.00%	100.0%
1963	31.18%	20.90%	40.49%	7.43%	100.0%
1964	31.86%	20.56%	40.18%	7.40%	100.0%
1965	31.34%	19.80%	41.43%	7.43%	100.0%
1966	30.68%	19.31%	42.86%	7.14%	100.0%
1967	30.13%	19.46%	42.51%	7.90%	100.0%
1968	30.28%	19.06%	42.86%	7.79%	100.0%
1969	30.49%	18.38%	43.24%	7.89%	100.0%
1970	30.72%	18.38%	43.55%	7.34%	100.0%
1971	30.80%	18.55%	43.33%	7.32%	100.0%
1972	31.14%	18.20%	43.68%	6.98%	100.0%
1973	31.00%	17.89%	43.81%	7.31%	100.0%
1974	30.19%	17.74%	44.99%	7.07%	100.0%
1975	31.38%	19.07%	42.91%	6.64%	100.0%
1976	30.36%	18.46%	44.35%	6.83%	100.0%
1977	29.65%	17.61%	45.93%	6.81%	100.0%
1978	30.26%	17.94%	45.01%	6.80%	100.0%
1979	28.99%	16.69%	47.54%	6.78%	100.0%
1980	30.25%	17.97%	44.70%	7.07%	100.0%
1981	30.36%	17.78%	44.74%	7.11%	100.0%
1982	31.32%	18.57%	43.21%	6.90%	100.0%
1983	29.37%	19.74%	43.42%	7.47%	100.0%
1984	31.54%	18.76%	42.79%	6.91%	100.0%
1985	33.26%	19.70%	40.51%	6.53%	100.0%
1986	34.38%	20.34%	38.89%	6.38%	100.0%
1987	33.52%	20.22%	40.19%	6.07%	100.0%
1988	32.90%	21.15%	40.53%	5.41%	100.0%
1989	32.75%	20.53%	41.70%	5.02%	100.0%
1990	33.22%	20.55%	42.01%	4.22%	100.0%
1991	32.97%	20.32%	42.72%	4.00%	100.0%
1992	32.18%	20.00%	43.86%	3.96%	100.0%
1993	33.11%	21.25%	41.97%	3.67%	100.0%
1994	32.26%	21.42%	42.62%	3.70%	100.0%
1995	33.06%	21.40%	42.18%	3.36%	100.0%
1996	32.30%	21.15%	43.24%	3.31%	100.0%
1997	34.71%	21.34%	40.01%	3.94%	100.0%
1998	34.37%	22.23%	39.89%	3.52%	100.0%

* Includes public street/highway lighting, other public authorities, railroads/railways and interdepartmental sales
Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.

FIGURE 1
LOUISIANA ELECTRIC UTILITIES ELECTRICITY SALES
BY CUSTOMER SECTOR - GWH
1960-1998



* Includes public street/highway lighting, other public authorities, railroads/railways and interdepartmental sales
Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.

TABLE 3
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Total Electricity Sales expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	-1.19											
1988	-0.33	0.53										
1989	0.92	2.00	3.48									
1990	1.56	2.50	3.50	3.51								
1991	1.52	2.21	2.78	2.43	1.36							
1992	1.37	1.89	2.24	1.83	1.00	0.64						
1993	1.87	2.39	2.76	2.58	3.46	2.74	4.89					
1994	2.07	2.55	2.89	2.77	3.48	3.00	4.21	3.53				
1995	2.25	2.69	3.00	2.92	3.52	3.17	4.03	3.61	3.68			
1996	2.38	2.78	3.06	3.01	3.51	3.24	3.90	3.57	3.59	3.50		
1997	1.70	2.00	2.16	2.00	2.29	1.85	2.10	1.41	0.72	-0.73	-4.78	
1998	2.25	2.57	2.77	2.69	3.04	2.77	3.13	2.78	2.60	2.24	1.61	8.44

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

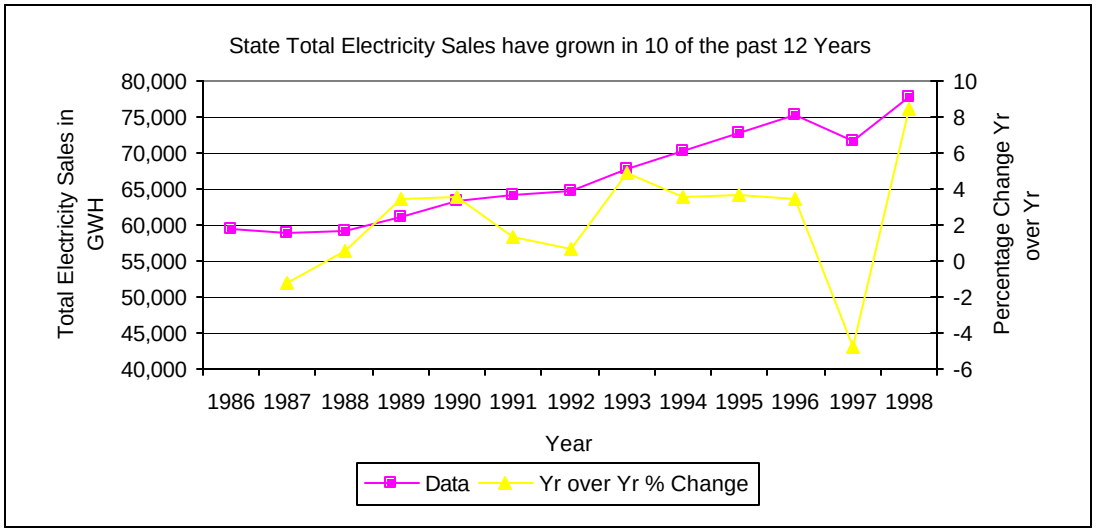
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Total Electricity Sales in GWH

Date	Data	Yr over Yr % Change
1986	59,518	
1987	58,808	-1.19
1988	59,121	0.53
1989	61,180	3.48
1990	63,328	3.51
1991	64,187	1.36
1992	64,595	0.64
1993	67,754	4.89
1994	70,145	3.53
1995	72,728	3.68
1996	75,270	3.50
1997	71,670	-4.78
1998	77,716	8.44



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 4
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Residential Electricity Sales expressed as a Percentage Increase from the Beginning Period to the End Period

	Beginning Period											
End Period	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
1987	-3.68											
1988	-2.51	-1.33										
1989	-0.70	0.82	3.02									
1990	0.69	2.19	4.00	4.99								
1991	0.67	1.79	2.86	2.77	0.60							
1992	0.26	1.07	1.67	1.23	-0.60	-1.79						
1993	1.32	2.18	2.89	2.86	3.83	2.95	7.91					
1994	1.27	1.99	2.56	2.46	3.09	2.26	4.35	0.90				
1995	1.81	2.52	3.08	3.09	3.72	3.25	4.98	3.54	6.26			
1996	1.74	2.36	2.83	2.80	3.27	2.81	4.00	2.72	3.65	1.10		
1997	1.79	2.35	2.77	2.74	3.14	2.73	3.66	2.62	3.20	1.71	2.32	
1998	2.24	2.80	3.22	3.25	3.66	3.38	4.27	3.55	4.23	3.56	4.82	7.37

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

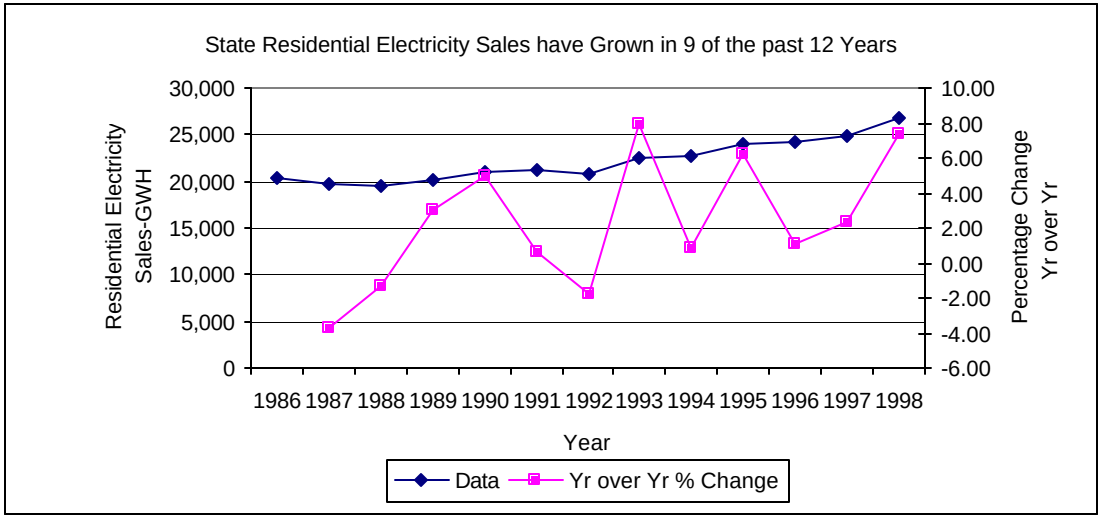
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Residential Electricity Sales in GWH

Date	**Data**	**Yr over Yr % Change**
1986	20,464	
1987	19,711	-3.68
1988	19,449	-1.33
1989	20,037	3.02
1990	21,037	4.99
1991	21,163	0.60
1992	20,785	-1.79
1993	22,430	7.91
1994	22,631	0.90
1995	24,047	6.26
1996	24,311	1.10
1997	24,876	2.32
1998	26,709	7.37



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 5
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Commercial Electricity Sales expressed as a Percentage Increase from the Beginning Period to the End Period

	Beginning Period											
End Period	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
1987	-1.75											
1988	1.65	5.16										
1989	1.24	2.77	0.42									
1990	1.83	3.05	2.01	3.61								
1991	1.50	2.33	1.40	1.90	0.21							
1992	1.09	1.67	0.81	0.94	-0.37	-0.95						
1993	2.51	3.24	2.86	3.47	4.66	5.07	11.47					
1994	2.74	3.39	3.10	3.65	4.58	4.83	7.85	4.35				
1995	2.83	3.42	3.17	3.64	4.38	4.52	6.41	3.97	3.59			
1996	2.78	3.29	3.06	3.44	4.03	4.07	5.36	3.41	2.94	2.29		
1997	2.15	2.55	2.26	2.49	2.85	2.69	3.43	1.52	0.59	-0.87	-3.94	
1998	3.01	3.45	3.28	3.60	4.06	4.10	4.96	3.71	3.55	3.54	4.17	12.95

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

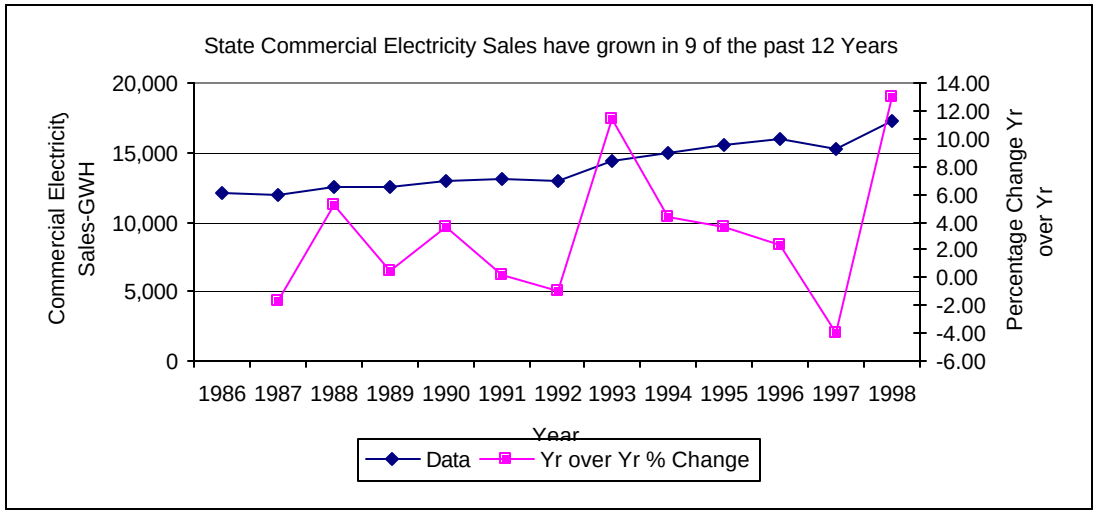
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Commercial Electricity Sales in GWH

Date	**Data**	**Yr over Yr % Change**
1986	12,105	
1987	11,893	-1.75
1988	12,507	5.16
1989	12,560	0.42
1990	13,014	3.61
1991	13,041	0.21
1992	12,917	-0.95
1993	14,398	11.47
1994	15,024	4.35
1995	15,563	3.59
1996	15,920	2.29
1997	15,293	-3.94
1998	17,274	12.95



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 6
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Industrial Electricity Sales expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	2.11											
1988	1.75	1.38										
1989	3.29	3.89	6.46									
1990	3.54	4.02	5.37	4.30								
1991	3.44	3.78	4.59	3.67	3.05							
1992	3.42	3.69	4.27	3.56	3.19	3.33						
1993	2.98	3.13	3.48	2.75	3.69	1.84	0.38					
1994	3.25	3.41	3.76	3.22	4.05	2.93	2.72	5.13				
1995	3.18	3.31	3.59	3.12	3.75	2.85	2.68	3.86	2.60			
1996	3.47	3.62	3.90	3.54	4.14	3.49	3.53	4.60	4.33	6.10		
1997	1.97	1.95	2.01	1.47	1.69	0.75	0.24	0.21	-1.38	-3.31	-11.88	
1998	2.46	2.50	2.61	2.19	2.47	1.77	1.51	1.74	0.91	0.35	-2.40	8.10

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

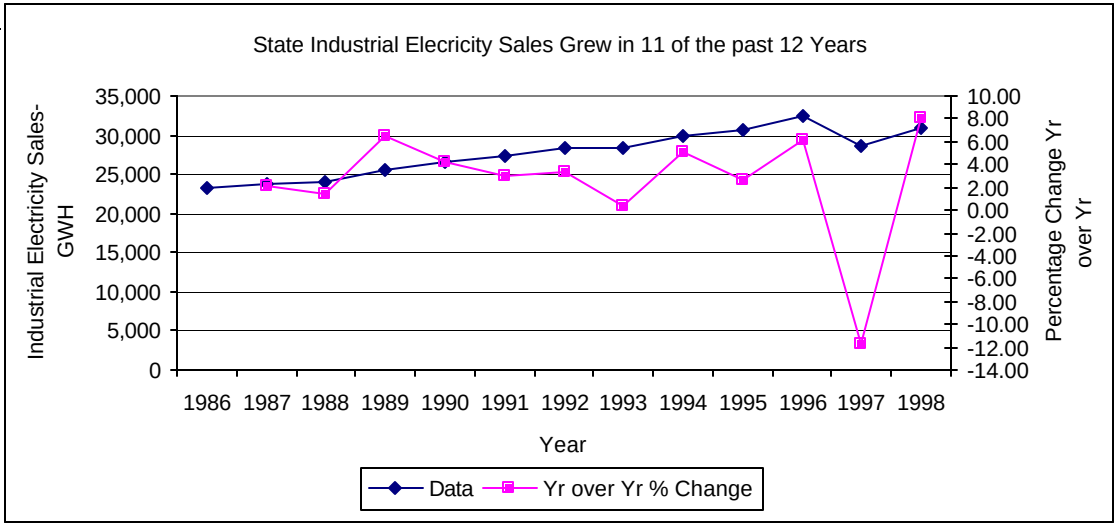
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Industrial Electricity Sales in GWH

Date	Data	Yr over Yr % Change
1986	23,149	
1987	23,637	2.11
1988	23,964	1.38
1989	25,511	6.46
1990	26,607	4.30
1991	27,418	3.05
1992	28,332	3.33
1993	28,439	0.38
1994	29,897	5.13
1995	30,674	2.60
1996	32,544	6.10
1997	28,677	-11.80
1998	30,999	8.10



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 7
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Other Electricity Sales expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	-6.13											
1988	-8.22	-10.26										
1989	-6.84	-7.20	-4.03									
1990	-8.45	-9.20	-8.67	-13.09								
1991	-7.56	-7.91	-7.12	-8.62	-3.93							
1992	-6.37	-6.41	-5.42	-5.88	-2.06	-0.16						
1993	-5.88	-5.83	-4.92	-5.14	-6.80	-1.53	-2.89					
1994	-4.67	-4.45	-3.45	-3.33	-4.15	0.36	0.62	4.26				
1995	-4.79	-4.62	-3.78	-3.74	-4.47	-1.20	-1.55	-0.87	-5.75			
1996	-4.12	-3.89	-3.07	-2.93	-3.41	-0.55	-0.65	0.11	-1.91	2.09		
1997	-2.66	-2.31	-1.38	-1.05	-1.20	1.62	1.97	3.23	2.89	7.49	13.19	
1998	-2.71	-2.39	-1.56	-1.29	-1.45	0.92	1.10	1.91	1.33	3.81	4.68	-3.19

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

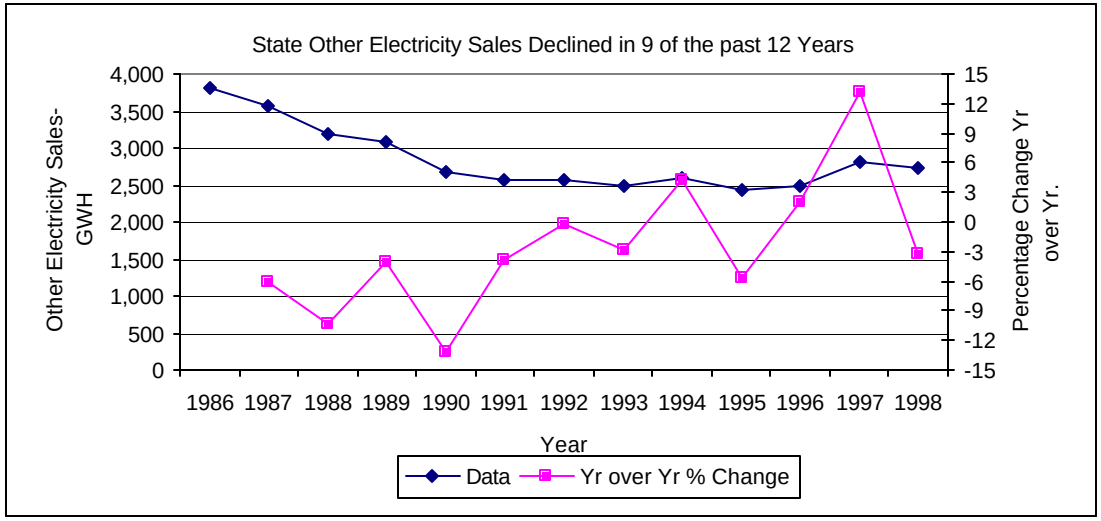
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Other Electricity Sales in GWH

Date	Data	Yr over Yr % Change
1986	3,800	
1987	3,567	-6.13
1988	3,201	-10.26
1989	3,072	-4.03
1990	2,670	-13.09
1991	2,565	-3.93
1992	2,561	-0.16
1993	2,487	-2.89
1994	2,593	4.26
1995	2,444	-5.75
1996	2,495	2.09
1997	2,824	13.19
1998	2,734	-3.19



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

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10. Louisiana's residential electric consumers paid an average price of $0.0707 per kilowatt hour (kwh) in 1998 (Table 8).
11. Louisiana's commercial electric consumers paid an average price of $0.0656 per kilowatt hour (kwh) in 1998 (Table 9).
12. Louisiana's industrial electric consumers paid an average price of $0.0415 per kilowatt hour (kwh) in 1998 (Table 10).
13. Louisiana's "other" electric consumers paid an average price of $0.0415 per kilowatt hour (kwh) in 1998 (Table 11).
14. The average cost of electric power to all users in the State in 1998 was $0.0578 per kwh. (Table 12)
15. Again using 1986 as the base year, the average price of electricity to all consumers declined at a compound annual rate of -0.13%–in other words, compared to 1986, the price of electricity was virtually unchanged in current dollars (Table 13).
16. Residential electricity prices declined at a compound annual rate of -0.02% between 1986 and 1998 (Table 14).
17. Commercial electricity prices declined at a compound annual rate of -0.24% between 1986 and 1998 (Table 15).
18. Industrial electricity prices declined at a compound annual rate of -0.43% between 1986 and 1998 (Table 16).
19. "Other" electricity prices increased at a compound annual rate of 1.45% between 1986 and 1998 (Table 17).

TABLE 8
LOUISIANA ELECTRIC UTILITIES
RESIDENTIAL CUSTOMERS, SALES, REVENUES AND PRICES
1960-1998

YEAR	CUSTOMERS SERVED AS OF 12/31)	SALES GWH	REVENUES (1000$)	AVERAGE PRICE (Cents/KWH)
1960	871,914	2,382	80,962	3.40
1961	895,291	3,224	85,209	2.64
1962	908,279	3,806	97,621	2.56
1963	942,115	4,138	104,382	2.52
1964	971,260	4,628	113,247	2.45
1965	996,993	5,093	120,759	2.37
1966	1,021,588	5,743	132,492	2.31
1967	1,043,060	6,337	143,984	2.27
1968	1,075,291	7,318	161,659	2.21
1969	1,094,341	8,314	179,906	2.16
1970	1,113,387	9,097	194,366	2.14
1971	1,143,849	9,587	205,905	2.15
1972	1,175,746	10,872	236,994	2.18
1973	1,207,606	11,732	260,231	2.22
1974	1,231,514	11,649	286,735	2.46
1975	1,263,967	12,536	311,589	2.49
1976	1,303,083	13,373	357,080	2.67
1977	1,342,137	14,999	431,462	2.88
1978	1,403,361	16,024	487,582	3.04
1979	1,437,700	16,655	567,140	3.41
1980	1,473,738	18,296	825,108	4.51
1981	1,506,951	18,552	1,016,937	5.48
1982	1,539,654	18,280	1,079,990	5.91
1983	1,573,858	16,083	948,512	5.90
1984	1,618,982	19,265	1,309,852	6.80
1985	1,603,433	20,168	1,394,839	6.92
1986	1,615,895	20,464	1,451,057	7.09
1987	1,580,542	19,711	1,407,282	7.14
1988	1,557,095	19,449	1,381,865	7.11
1989	1,582,158	20,037	1,468,132	7.33
1990	1,604,845	21,037	1,557,172	7.40
1991	1,621,372	21,163	1,556,077	7.35
1992	1,634,467	20,785	1,558,037	7.50
1993	1,690,109	22,430	1,740,707	7.76
1994	1,679,866	22,631	1,721,616	7.61
1995	1,709,191	24,047	1,745,098	7.26
1996	1,726,048	24,311	1,835,618	7.55
1997	1,752,921	24,876	1,820,567	7.32
1998	1,772,354	26,709	1,888,787	7.07

Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997, Edison Electric Institute. Source for 1998 data, "Electric Sales and Revenues 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 9
LOUISIANA ELECTRIC UTILITIES
COMMERCIAL CUSTOMERS, SALES, REVENUES AND PRICES
1960-1998

YEAR	CUSTOMERS SERVED AS OF 12/31)	SALES GWH	REVENUES (1000$)	AVERAGE PRICE (Cents/KWH)
1960	104,683	1,832	50,539	2.76
1961	104,918	2,314	55,713	2.41
1962	102,187	2,482	60,370	2.43
1963	108,128	2,774	65,424	2.36
1964	110,298	2,987	68,557	2.30
1965	112,249	3,217	70,748	2.20
1966	116,140	3,615	77,429	2.14
1967	119,781	4,092	85,761	2.10
1968	122,584	4,607	93,770	2.04
1969	125,554	5,012	101,085	2.02
1970	126,800	5,443	108,062	1.99
1971	128,999	5,774	114,898	1.99
1972	132,335	6,353	128,316	2.02
1973	132,106	6,771	144,601	2.14
1974	134,362	6,845	163,575	2.39
1975	140,585	7,619	187,555	2.46
1976	147,042	8,129	223,721	2.75
1977	152,662	8,907	261,054	2.93
1978	156,037	9,499	292,515	3.08
1979	160,017	9,587	333,713	3.48
1980	167,104	10,871	469,774	4.32
1981	166,927	10,861	553,006	5.09
1982	169,663	10,842	574,962	5.30
1983	178,073	10,813	595,808	5.51
1984	188,006	11,456	761,906	6.65
1985	187,119	11,946	876,116	7.33
1986	186,278	12,105	817,201	6.75
1987	184,740	11,893	804,901	6.77
1988	185,531	12,507	853,661	6.83
1989	185,111	12,560	886,510	7.06
1990	188,017	13,014	928,472	7.13
1991	187,423	13,041	920,491	7.06
1992	189,159	12,917	938,897	7.27
1993	197,448	14,398	1,062,389	7.38
1994	200,091	15,024	1,080,997	7.20
1995	197,900	15,563	1,055,308	6.78
1996	200,669	15,920	1,133,589	7.12
1997	205,170	15,293	1,136,071	7.43
1998	208,716	17,274	1,132,353	6.56

Source: "Statistical Yearbook of the Electric Utility Industry" 1960-1997 Editions, Edison Electric Institute. Source for 1998 data, "Electric Sales and Revenues 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 10
LOUISIANA ELECTRIC UTILITIES
INDUSTRIAL CUSTOMERS, SALES, REVENUES AND PRICES
1960-1998

YEAR	CUSTOMERS SERVED AS OF 12/31)	SALES GWH	REVENUES (1000$)	AVERAGE PRICE (Cents/KWH)
1960	6,443	4,325	40,503	0.94
1961	8,541	4,420	41,842	0.95
1962	10,432	4,955	46,012	0.93
1963	7,308	5,374	48,927	0.91
1964	7,617	5,836	51,953	0.89
1965	8,109	6,732	57,916	0.86
1966	8,069	8,022	64,843	0.81
1967	8,599	8,940	72,523	0.81
1968	8,726	10,358	83,109	0.80
1969	8,633	11,789	94,401	0.80
1970	9,030	12,896	102,542	0.80
1971	10,760	13,486	109,764	0.81
1972	11,941	15,251	127,709	0.84
1973	13,768	16,580	162,098	0.98
1974	13,446	17,360	216,663	1.25
1975	11,269	17,146	216,969	1.27
1976	12,532	19,535	259,690	1.33
1977	13,960	23,234	357,949	1.54
1978	17,153	23,834	421,954	1.77
1979	16,219	27,312	591,101	2.16
1980	12,218	27,035	779,036	2.88
1981	16,413	27,337	1,014,183	3.71
1982	17,289	25,221	1,074,032	4.26
1983	17,930	23,779	1,040,686	4.38
1984	19,389	26,139	1,141,363	4.37
1985	20,042	24,567	1,271,992	5.18
1986	17,529	23,149	1,011,501	4.37
1987	15,813	23,637	1,000,921	4.23
1988	15,063	23,964	1,006,751	4.20
1989	15,678	25,511	1,097,576	4.30
1990	15,547	26,607	1,122,331	4.22
1991	15,430	27,418	1,140,815	4.16
1992	16,029	28,332	1,207,517	4.26
1993	15,499	28,439	1,261,795	4.44
1994	14,768	29,897	1,261,976	4.22
1995	14,281	30,674	1,219,114	3.97
1996	14,781	32,544	1,405,372	4.32
1997	15,152	28,677	1,427,151	4.98
1998	15,322	30,999	1,287,517	4.15

Source: "Statistical Yearbook of the Electric Utility Industry" 1960-1997 Editions, Edison Electric Institute. Source for 1998 data, "Electric Sales and Revenues 1998",
Energy Administration Administration DOE/EIA-0540 (98)

TABLE 11
LOUISIANA ELECTRIC UTILITIES
OTHER* CUSTOMERS, SALES, REVENUES AND PRICES
1960-1998

YEAR	CUSTOMERS SERVED AS OF 12/31)	SALES GWH	REVENUES (1000$)	AVERAGE PRICE (Cents/KWH)
1960	4,511	460	9,736	2.12
1961	4,845	818	12,247	1.50
1962	5,967	718	11,416	1.59
1963	5,236	986	11,254	1.14
1964	5,495	1,075	11,597	1.08
1965	5,717	1,207	11,161	0.92
1966	5,835	1,337	12,645	0.95
1967	6,031	1,662	13,569	0.82
1968	3,234	1,883	15,044	0.80
1969	3,426	2,152	15,919	0.74
1970	6,702	2,174	16,562	0.76
1971	6,865	2,280	17,917	0.79
1972	7,072	2,438	19,056	0.78
1973	7,351	2,765	28,534	1.03
1974	7,609	2,729	36,577	1.34
1975	7,871	2,654	39,015	1.47
1976	8,255	3,008	52,579	1.75
1977	8,536	3,443	67,391	1.96
1978	8,930	3,600	76,303	2.12
1979	9,194	3,895	92,797	2.38
1980	9,597	4,277	118,414	2.77
1981	10,809	4,347	156,533	3.60
1982	11,714	4,030	157,944	3.92
1983	11,955	4,092	168,736	4.12
1984	10,928	4,222	188,307	4.46
1985	11,129	3,961	200,625	5.07
1986	11,573	3,800	211,539	5.57
1987	12,139	3,567	214,387	6.01
1988	12,442	3,201	198,333	6.20
1989	12,826	3,072	186,285	6.06
1990	14,072	2,670	182,493	6.83
1991	13,886	2,565	161,770	6.31
1992	13,932	2,561	164,519	6.42
1993	19,026	2,487	177,010	7.12
1994	18,303	2,593	176,571	6.81
1995	22,711	2,444	170,372	6.97
1996	20,810	2,495	194,047	7.78
1997	21,095	2,824	173,050	6.13
1998	21,761	2,734	180,928	6.62

* Includes public street/highway lighting, other public authorities, railroads/railways and interdepartmental sales.
Source: same as Table 9

TABLE 12
LOUISIANA ELECTRIC UTILITIES
TOTAL CUSTOMERS, SALES, REVENUES AND PRICES
1960-1998

YEAR	CUSTOMERS SERVED AS OF 12/31)	SALES GWH	REVENUES (1000$)	AVERAGE PRICE (Cents/KWH)
1960	987,551	8,999	181,740	2.02
1961	1,012,875	10,776	195,011	1.81
1962	1,026,865	11,961	215,419	1.80
1963	1,062,787	13,272	229,987	1.73
1964	1,094,670	14,526	245,354	1.69
1965	1,123,068	16,249	260,584	1.60
1966	1,151,632	18,717	287,409	1.54
1967	1,177,471	21,031	315,837	1.50
1968	1,212,835	24,166	353,582	1.46
1969	1,234,954	27,267	391,311	1.44
1970	1,255,919	29,610	421,532	1.42
1971	1,290,473	31,127	448,484	1.44
1972	1,327,094	34,914	512,075	1.47
1973	1,360,831	37,848	595,464	1.57
1974	1,386,931	38,583	703,550	1.82
1975	1,423,692	39,955	755,128	1.89
1976	1,470,912	44,045	893,070	2.03
1977	1,517,295	50,583	1,117,856	2.21
1978	1,585,481	52,957	1,278,354	2.41
1979	1,623,130	57,449	1,584,751	2.76
1980	1,662,657	60,476	2,192,332	3.62
1981	1,701,100	61,097	2,740,659	4.49
1982	1,738,320	58,373	2,886,928	4.95
1983	1,781,816	54,767	2,753,742	5.03
1984	1,837,305	61,082	3,401,428	5.57
1985	1,821,723	60,642	3,743,573	6.17
1986	1,831,275	59,518	3,491,299	5.87
1987	1,793,234	58,808	3,427,491	5.83
1988	1,770,131	59,121	3,440,560	5.82
1989	1,795,773	61,180	3,638,503	5.95
1990	1,822,481	63,328	3,790,468	5.99
1991	1,838,111	64,187	3,779,153	5.89
1992	1,853,587	64,595	3,868,970	5.99
1993	1,922,082	67,754	4,241,901	6.26
1994	1,913,028	70,145	4,241,160	6.05
1995	1,944,083	72,728	4,189,891	5.76
1996	1,962,398	75,270	4,568,626	6.07
1997	1,994,338	71,670	4,556,839	6.36
1998	2,018,153	77,716	4,489,585	5.78

Source: Same as Table 9. Totals may not equal sum of components because of independent rounding.

TABLE 13
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Total Electricity Prices expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	-0.68											
1988	-0.43	-0.17										
1989	0.45	1.02	2.23									
1990	0.51	0.91	1.45	0.67								
1991	0.07	0.26	0.40	-0.51	-1.67							
1992	0.34	0.54	0.72	0.22	0.00	1.70						
1993	0.92	1.19	1.47	1.28	1.71	3.09	4.51					
1994	0.38	0.53	0.65	0.33	0.42	0.90	0.50	-3.35				
1995	-0.21	-0.15	-0.15	-0.54	-0.65	-0.56	-1.30	-4.08	-4.79			
1996	0.34	0.45	0.53	0.29	0.33	0.60	0.33	-1.02	0.17	5.38		
1997	0.73	0.87	0.99	0.84	0.96	1.29	1.21	0.40	1.68	5.08	4.78	
1998	-0.13	-0.08	-0.07	-0.32	-0.36	-0.27	-0.59	-1.58	-1.13	0.12	-2.42	-9.12

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

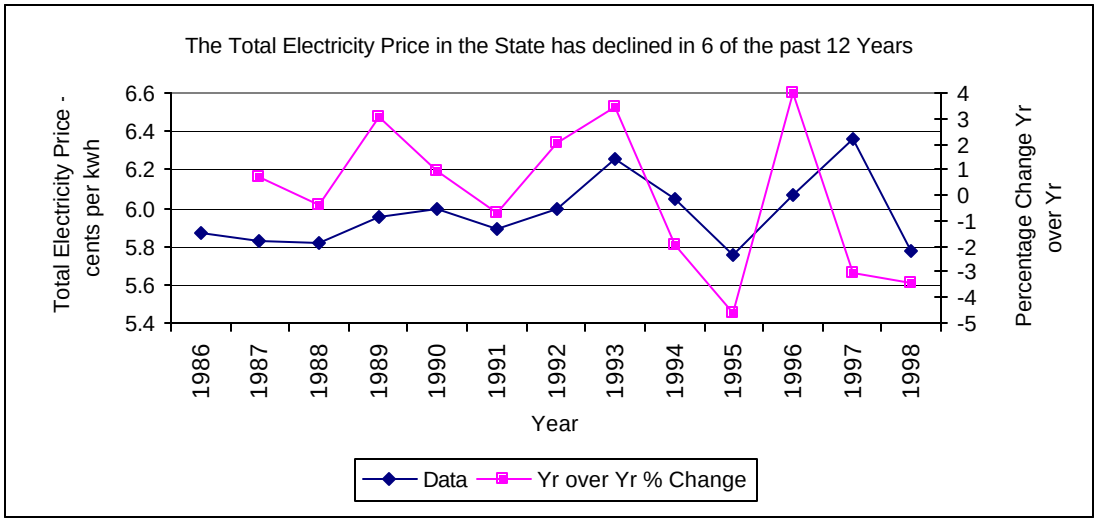
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Total Electricity Price in cents per KWH

Date	Data	Yr over Yr % Change
1986	5.87	
1987	5.83	0.71
1988	5.82	-0.42
1989	5.95	3.09
1990	5.99	0.95
1991	5.89	-0.68
1992	5.99	2.04
1993	6.26	3.47
1994	6.05	-1.93
1995	5.76	-4.60
1996	6.07	3.99
1997	6.36	-3.05
1998	5.78	-3.42



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 14
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Residential Electricity Prices expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	0.71											
1988	0.14	-0.42										
1989	1.12	1.32	3.09									
1990	1.08	1.20	2.02	0.95								
1991	0.72	0.73	1.11	0.14	-0.68							
1992	0.94	0.99	1.34	0.77	0.67	2.04						
1993	1.30	1.40	1.76	1.44	1.92	2.75	3.47					
1994	0.89	0.91	1.14	0.75	0.94	1.17	0.73	-1.93				
1995	0.26	0.21	0.30	-0.16	-0.19	-0.31	-1.08	-3.28	-4.60			
1996	0.63	0.62	0.75	0.42	0.49	0.54	0.17	-0.91	-0.39	3.99		
1997	0.29	0.25	0.32	-0.02	-0.02	-0.07	-0.48	-1.45	-1.29	0.41	-3.05	
1998	-0.02	-0.09	-0.06	-0.40	-0.45	-0.55	-0.98	-1.85	-1.82	-0.88	-3.23	-3.42

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

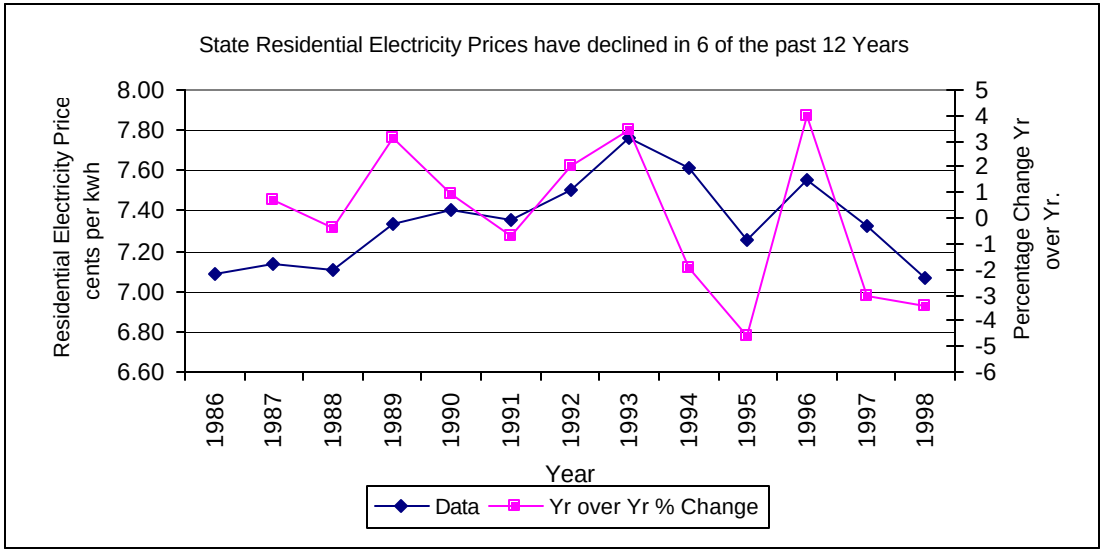
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Residential Electricity Price in cents per KWH

Date	Data	Yr over Yr % Change
1986	7.09	
1987	7.14	0.71
1988	7.11	-0.42
1989	7.33	3.09
1990	7.40	0.95
1991	7.35	-0.68
1992	7.50	2.04
1993	7.76	3.47
1994	7.61	-1.93
1995	7.26	-4.60
1996	7.55	3.99
1997	7.32	-3.05
1998	7.07	-3.42



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 15
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Commercial Electricity Prices expressed as a Percentage Increase from the Beginning Period to the End Period

End Period \ Beginning Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	0.30											
1988	0.59	0.89										
1989	1.51	2.12	3.37									
1990	1.38	1.74	2.17	0.99								
1991	0.90	1.05	1.11	0.00	-0.98							
1992	1.24	1.44	1.57	0.98	0.98	2.97						
1993	1.28	1.45	1.56	1.11	1.49	2.24	1.51					
1994	0.81	0.88	0.88	0.39	0.49	0.66	-0.48	-2.44				
1995	0.05	0.02	-0.10	-0.67	-0.81	-1.01	-2.30	-4.15	-5.83			
1996	0.54	0.56	0.52	0.12	0.14	0.17	-0.52	-1.19	-0.56	5.01		
1997	0.88	0.93	0.94	0.64	0.73	0.85	0.44	0.17	1.05	4.68	4.35	
1998	-0.24	-0.29	-0.40	-0.81	-0.91	-1.04	-1.70	-2.33	-2.30	-1.09	-4.01	-11.71

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

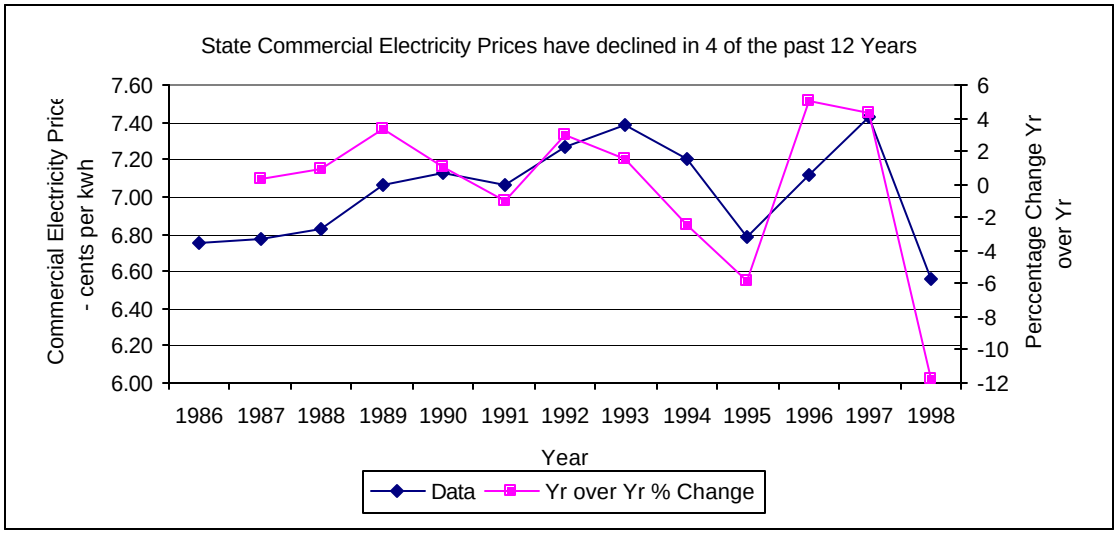
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Commercial Electricity Price in cents per KWH

Date	Data	Yr over Yr % Change
1986	6.75	
1987	6.77	0.30
1988	6.83	0.89
1989	7.06	3.37
1990	7.13	0.99
1991	7.06	-0.98
1992	7.27	2.97
1993	7.38	1.51
1994	7.20	-2.44
1995	6.78	-5.83
1996	7.12	5.01
1997	7.43	4.35
1998	6.56	-11.71



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 16
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Industrial Electricity Prices expressed as a Percentage Increase from the Beginning Period to the End Period

	Beginning Period											
End Period	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
1987	-3.20											
1988	-1.96	-0.71										
1989	-0.54	0.82	2.38									
1990	-0.87	-0.08	0.24	-1.86								
1991	-0.98	-0.42	-0.32	-1.64	-1.42							
1992	-0.42	0.14	0.36	-0.31	0.47	2.40						
1993	0.23	0.81	1.12	0.80	1.07	3.31	4.23					
1994	-0.44	-0.03	0.08	-0.37	-0.47	0.48	-0.47	-4.95				
1995	-1.06	-0.79	-0.80	-1.32	-1.58	-1.16	-2.32	-5.44	-5.92			
1996	-0.12	0.23	0.35	0.07	0.08	0.76	0.35	-0.91	1.18	8.82		
1997	1.19	1.65	1.91	1.85	2.12	3.04	3.17	2.91	5.68	12.00	15.28	
1998	-0.43	-0.17	-0.12	-0.39	-0.44	-0.03	-0.44	-1.34	-0.42	1.49	-1.99	-16.67

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

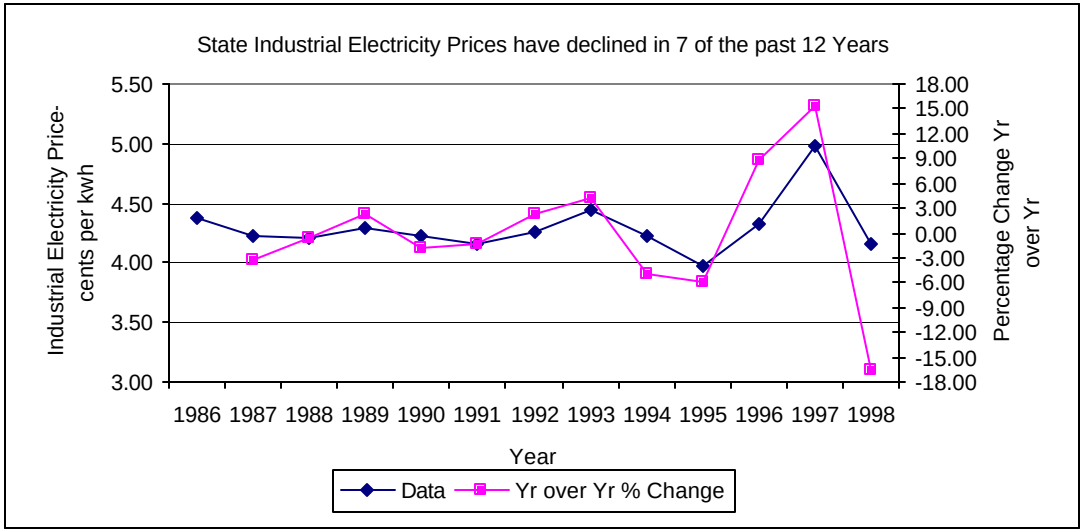
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Industrial Electricity Price in cents per KWH

Date	**Data**	**Yr over Yr % Change**
1986	4.37	
1987	4.23	-3.20
1988	4.20	-0.71
1989	4.30	2.38
1990	4.22	-1.86
1991	4.16	-1.42
1992	4.26	2.40
1993	4.44	4.23
1994	4.22	-4.95
1995	3.97	-5.92
1996	4.32	8.82
1997	4.98	15.28
1998	4.15	-16.67



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

TABLE 17
Compound Rates of Growth from 1986-1998 for Electricity in GWH, by Sector

Compound Growth Rate in Other Electricity Prices expressed as a Percentage Increase from the Beginning Period to the End Period

	Beginning Period											
End Period	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
1987	7.90											
1988	5.50	3.16										
1989	2.85	0.42	-2.26									
1990	5.23	4.36	4.96	12.71								
1991	2.53	1.23	0.59	2.04	-7.61							
1992	2.40	1.33	0.88	1.94	-3.05	1.74						
1993	3.57	2.86	2.81	4.11	5.52	6.22	10.90					
1994	2.54	1.80	1.58	2.36	2.96	2.57	2.99	-4.35				
1995	2.52	1.87	1.69	2.36	2.84	2.52	2.78	-1.06	2.35			
1996	3.40	2.91	2.88	3.63	4.25	4.28	4.92	3.00	6.88	11.62		
1997	0.87	0.20	-0.13	0.14	0.16	-0.48	-0.92	-3.67	-3.45	-6.22	-21.21	
1998	1.45	0.88	0.66	0.99	1.11	0.69	0.51	-1.45	-0.70	-1.70	-7.76	7.99

Compound Growth Rate Formula= $[(X_t/X_i)^{(f/T)}-1]*100$

where X_t= terminal value of data

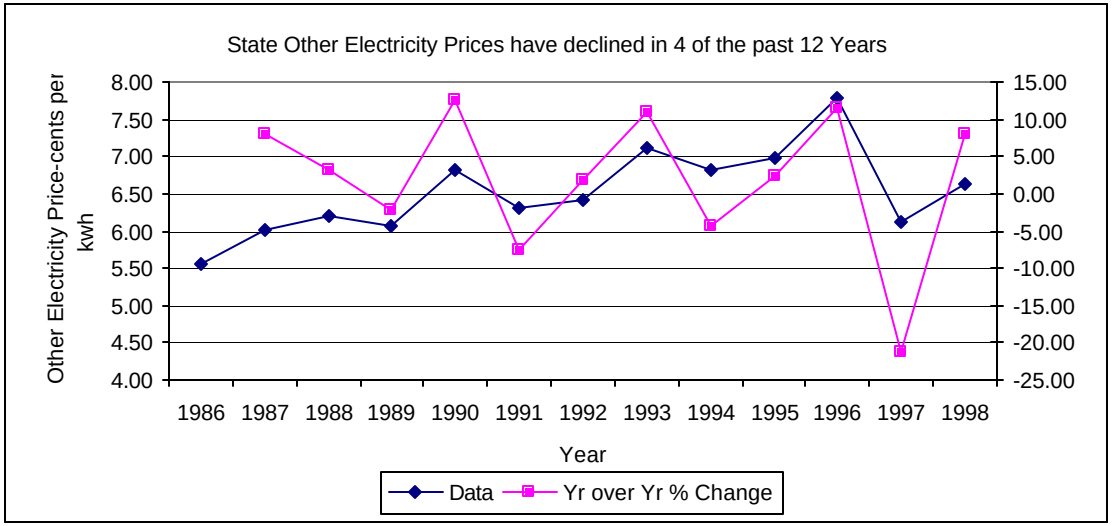
X_i= initial value of data

f= frequency, monthly=12; annual=1

T=number of time periods

Other Electricity Price in cents per KWH

Date	**Data**	**Yr over Yr % Change**
1986	5.57	
1987	6.01	7.90
1988	6.20	3.16
1989	6.06	-2.26
1990	6.83	12.71
1991	6.31	-7.61
1992	6.42	1.74
1993	7.12	10.90
1994	6.81	-4.35
1995	6.97	2.35
1996	7.78	11.62
1997	6.13	-21.21
1998	6.62	7.99



Source: ""Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute.
Source for 1998 data, "Electric Sales and Revenue 1998", Energy Information Administration DOE/EIA-0540 (98)

GENERATION CAPABILITY

GENERATION CAPABILITY

20. In 1998 Louisiana's investor owned (IOUs) and Municipally owned electric utilities (MOUs) owned and/or operated 16,885 megawatts (MW) of electric generating capacity (Table 18-22).
21. NOTE: In 1998, an additional 3,579 MW of electric generating capacity was owned by small power producers and co-generators (see also Table 34).
22. Between 1986 and 1998 electric generating capacity among the investor owned and municipally owned utilities increased at a negligible 0.08% compound annual rate–essentially unchanged throughout the 12 year period (Table 23).
23. In 1998, natural gas powered generating capability accounted for 67.64% of total electricity generation capability by the investor owned and municipally owned utilities (Table 18).
24. In 1998, coal and lignite powered generation accounted for 20.45% of total electricity generation capability by the investor owned and municipally owned utilities (Table 18).
25. In 1998, nuclear powered generation accounted for 11.91% of total electricity generation capability by the investor owned and municipally owned utilities (Table 18).
26. In the early 1980's much of the state natural gas powered generating capacity was idled because of the regulatory curtailment of the use of natural gas as an electric power generating fuel (Table 20).
27. Coal and lignite fired generation capability was expanded, along with the commissioning of 2 nuclear power plants.
28. Power was also purchased from generating sources outside the state.
29. The ability to purchase power, while still viable, is not as readily available, or dependable, today; surplus power generation margins in other geographic regions have narrowed and the purchased power is now priced at market rates, not regulated rates as in the past.

TABLE 18
SUMMARY OF TOTAL ELECTRIC POWER GENERATION IN LOUISIANA
INVESTOR AND MUNICIPALLY OWNED UTILITIES

TABLE 18

Summary of Total Electric Power Generation in Louisiana
Investor and Municipally Owned Utilities

Facility Owner	Facility	Generating Capability by Fuel Type (Megawatts, MW) Coal	Lignite	Oil	Gas	Nuclear	Hydro	Total Capability in MW and % of total utility Capability	% of Grand Total, State
Investor Owned									
State Capacity by Fuel Type		2,271.9	650.0		10,510.0	2,011.0		15,442.9	91.46%
Municipally Owned (LA & TX)									
State Capacity by Fuel Type		531.1			911.5			1,442.6	8.54%
Subtotals		2,803.0	650.0		11,421.5	2,011.0		16,885.5	100.00%
State Capacity by Fuel Type		16.60%	3.85%		67.64%	11.91%		100.00%	

TABLE 19
LOUISIANA MUNICIPALLY OWNED ELECTRIC UTILITIES, BY OPERATOR-JANUARY 1, 1998

Facility Owner	Facility	Operator	Generator Nameplate Capacity (megawatts)	Net Summer Capability (megawatts)	Net Winter Capability (megawatts)	Ownership
Cajun	Big Cajun #1	Cajun	235	220	220	Cajun-100%
	Big Cajun #2	Cajun	1833	1730	1730	Cajun-#2-100%; #1&#3-52%; Entergy #1&#3-48%
	River Bend	GSU	1035.9	936	936	Cajun-30%; GSU-70%
CLECO	Coughlin	CLECO	433.4	389	389	CLECO-100%
	Dolet Hills	CLECO	720.8	650	650	CLECO-50%; SWEPCO-50%
	Franklin	CLECO	10	7	7	CLECO-100%
	Rodemacher #1	CLECO	445.5	440	440	CLECO-100%
	Rodemacher #2	CLECO	558	523	523	CLECO-30%; Lafayette PPA-50%; LA Energy & Power Auth.-20%
	Teche	CLECO	427.9	430	430	CLECO-100%
GSU (Entergy)	Big Cajun #2	Cajun	1833	1730	1730	Cajun-#2-100%; #1&#3-52%; Entergy #1&#3-48%
	Louisiana #1	GSU	277.5	218	218	GSU-100%
	Louisiana #2	GSU	175	140	140	GSU-100%
	River Bend	GSU	1035.9	936	936	Cajun-30%; GSU-70%
	R. S. Nelson #1-#4	GSU	981.6	850	850	GSU #1&#2-100%; #3&#4-1% Citgo #3&#4-49%; Conoco #3&#4-36.1% Vista Partnership #3&#4-13.4%
	R. S. Nelson #6	GSU	614.6	550	550	GSU-70%; Sam Rayburn G&T-10% S. Rayburn Muni. Power Agency-20%
	Willow Glen	GSU	2178	2045	2045	GSU-100%
LP&L (Entergy)	Buras	LP&L	20.7	19	19	LP&L-100%
	Little Gypsy	LP&L	1250.9	1253	1253	LP&L-100%
	Monroe	LP&L	137.5	138	138	LP&L-100%
	Nine Mile Point	LP&L	2141.5	1827	1827	LP&L-100%
	Sterlington	LP&L	480.2	427	427	LP&L-100%
	Thibodaux	LP&L	21	19	19	LP&L-100%
	Waterford #1&#2	LP&L	891	822	822	LP&L-100%
	Waterford #3	LP&L	1199.9	1075	1075	LP&L-100%
NOPSI (Entergy)	Michoud	NOPSI	1074.5	918	918	NOPSI-100%
	Paterson, A. B.	NOPSI	149.1	159	159	NOPSI-100%
SWEPCO	Arsenal Hills	SWEPCO	100	110	110	SWEPCO-100%
	Dolet Hills	CLECO	722.8	650	650	CLECO-50%; SWEPCO-50%
	Lieberman	SWEPCO	240	273	273	SWEPCO-100%

Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute

TABLE 20
LOUISIANA MUNICIPALLY OWNED ELECTRIC UTILITIES, BY OPERATOR-JANUARY 1, 1998

Facility Owner	Facility	Operator	Generator Nameplate Capacity megawatts	Net Summer Capability (megawatts)	Net Winter Capability megawatts	Ownership
Alexandria	D. G. Hunter	City	175	157	157	Municipality-100%
Lafayette	Bonin	City	328.5	328.5	328.5	Municipality-100%
	Rodemacher	City	38.7	38.7	38.7	Municipality-100%
Minden	Minden	City	42.4	38.3	38.3	Municipality-100%
Morgan City	Morgan City	City	70.3	67.4	67.4	Municipality-100%
Natchitoches	Natchitoches	City	53	53	53	City of Layfette-100%
New Roads	New Roads	City	9.5	8.7	9.4	Municipality-100%
Plaquemine	Plaquemine	City	44	44	44	Municipality-100%
Rayne	Rayne	City	4.1	2.5	2.5	Municipality-100%
Ruston	Ruston	City	90.5	85	85	Municipality-100%
Terrebonne	Houma	Parish	99.4	88.4	88.4	Municipality-100%

Source: "Statistical Yearbook of the Electric Utility Industry", 1960-1997 Editions, Edison Electric Institute

TABLE 21
MUNICIPALLY OWNED GENERATING CAPABILITY BY OPERATOR, BY FUEL, 1-1-98

Investor Owned Electric Power Generation in Louisiana		Generating Capability by Fuel Type (Megawatts, MW)						Total Capability in MW and % of investor utility Capability	% of Grand Total, State
Facility Owner	Facility	Coal	Lignite	Oil	Gas	Nuclear	Hydro		
Cajun	Big Cajun #1				220.0				
	Big Cajun #2	1,175.6							
	River Bend					280.8			
Capacity	**by Fuel type**	1,175.6			220.0	280.8		1,676.4	9.93%
% of Total	**by Fuel type**	70.1%			13.1%	16.8%		10.9%	
CLECO	Coughlin				389.0				
	Dolet Hills		325.0						
	Franklin				7.0				
	Rodemacher #1				440.0				
	Rodemacher #2	156.9							
	Teche				430.0				
Capacity	**by Fuel type**	156.9	325.0		1,266.0			1,747.9	10.35%
% of Total	**by Fuel type**	9.0%	18.6%		72.4%			11.3%	
GSU	Big Cajun #2	554.4							
(Entergy)	Louisiana #1				218.0				
	Louisiana #2				140.0				
	River Bend					655.2			
	R. S. Nelson #1-#4				656.0				
	R. S. Nelson #6	385.0							
	Willow Glen				2045				
Capacity	**by Fuel type**	939.4			3,059.0	655.2		4,653.6	27.56%
% of Total	**by Fuel type**	20.2%			65.7%	14.1%		30.1%	
LP&L	Buras				19.0				
(Entergy)	Little Gypsy				1,253.0				
	Monroe				138.0				
	Nine Mile Point				1,827.0				
	Sterlington				427.0				
	Thibodaux				19.0				
	Waterford #1&#2				822.0				
	Waterford #3					1,075.0			
Capacity	**by Fuel type**				4,505.0	1,075.0		5,580.0	33.05%
% of Total	**by Fuel type**				80.7%			36.1%	
NOPSI	Michoud				918.0				
(Entergy)	Paterson, A. B.				159.0				
Capacity	**by Fuel type**				1,077.0			1,077.0	6.38%
% of Total	**by Fuel type**				100.0%			7.0%	
SWEPCO	Arsenal Hills				110.0				
	Dolet Hills		325.0						
	Lieberman				273.0				
Capacity	**by Fuel type**		325.0		383.0			708.0	4.19%
% of Total	**by Fuel type**		45.9%		54.1%			4.6%	
								100.0%	
State Capacity by Fuel Type		2,271.9	650.0		10,510.0	2,011.0		15,442.9	91.46%
% of Total by Fuel Type		14.7%	4.2%		68.1%	13.0%		100.0%	

Source: "Electric Power Monthly" DOE/EIA-0226 (99/04)

TABLE 21
MUNICIPALLY OWNED GENERATING CAPABILITY BY OPERATOR, BY FUEL, 1-1-98

TABLE 18

Summary of Total Electric Power Generation in Louisiana
Investor and Municipally Owned Utilities

Facility Owner	Facility	Generating Capability by Fuel Type (Megawatts, MW) Coal	Lignite	Oil	Gas	Nuclear	Hydro	Total Capability in MW and % of total utility Capability	% of Grand Total, State
Investor Owned									
State Capacity by Fuel Type		2,271.9	650.0		10,510.0	2,011.0		15,442.9	91.46%
Municipally Owned (LA & TX)									
State Capacity by Fuel Type		531.1			911.5			1,442.6	8.54%
Subtotals		2,803.0	650.0		11,421.5	2,011.0		16,885.5	100.00%
State Capacity by Fuel Type		16.60%	3.85%		67.64%	11.91%		100.00%	

TABLE 23
LOUISIANA INVESTOR AND MUNICIPALLY OWNED UTILITIES
GROWTH IN GENERATING CAPABILITY 1986-1998

Compound Growth Rate in Installed Electric Generating Capacity expressed as a Percentage Increase from the Beginning Period to the End Period

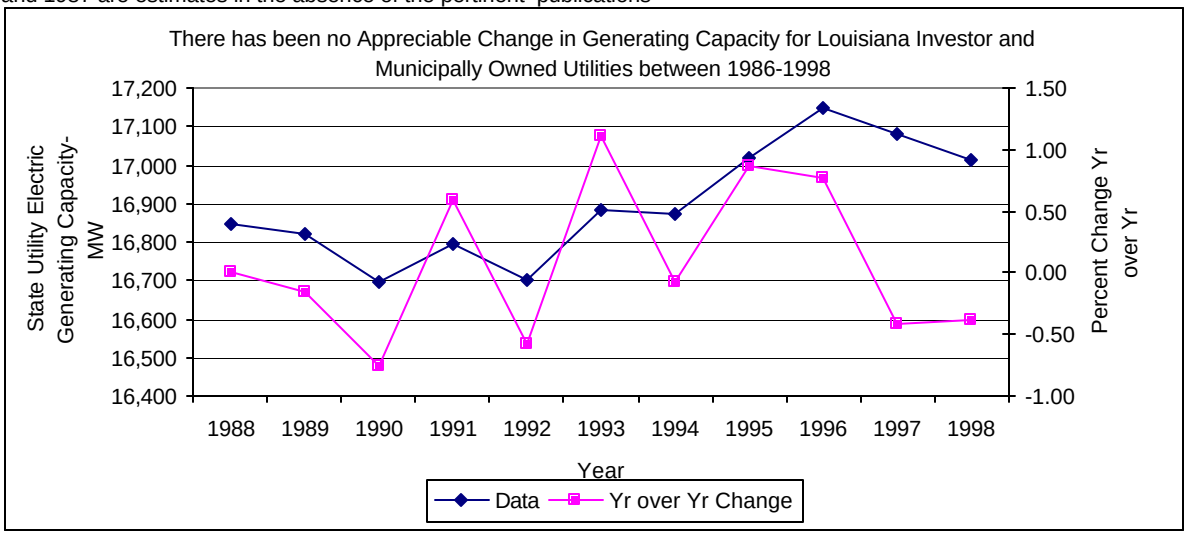
Beginning Period

End Period	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
1987	0.00											
1988	0.00	0.00										
1989	-0.05	-0.08	-0.16									
1990	-0.23	-0.31	-0.46	-0.76								
1991	-0.06	-0.08	-0.11	-0.08	0.60							
1992	-0.15	-0.18	-0.22	-0.25	0.01	-0.57						
1993	0.03	0.04	0.04	0.09	0.12	0.27	1.11					
1994	0.02	0.02	0.02	0.06	0.07	0.15	0.52	-0.07				
1995	0.11	0.13	0.14	0.19	0.23	0.33	0.63	0.40	0.87			
1996	0.18	0.20	0.22	0.28	0.32	0.42	0.67	0.52	0.82	0.77		
1997	0.12	0.14	0.15	0.19	0.22	0.28	0.45	0.29	0.41	0.18	-0.41	
1998	0.08	0.09	0.10	0.13	0.14	0.19	0.31	0.15	0.21	-0.01	-0.40	-0.38

Installed Electric Generating Capability-MW

Date	Data	Yr over Yr % Change
1986	16,849	
1987	16,849	0.00
1988	16,849	0.00
1989	16,823	-0.16
1990	16,695	-0.76
1991	16,795	0.60
1992	16,699	-0.57
1993	16,885	1.11
1994	16,873	-0.07
1995	17,019	0.87
1996	17,150	0.77
1997	17,080	-0.41
1998	17,014	-0.38

1986 and 1987 are estimates in the absence of the pertinent publications



Source: Statistical Yearbook of the Electric Utility Industry" 1988-1998 Edison Electric Institute

Note: The total installed generating capability is 0.3%, or 53 MW, less than the capability calculated by applying net ownership. percentage

DEMAND/SUPPLY BALANCE

30. Beginning in 1977 Louisiana's electric power consumers have consistently used more electricity than was generated by the state's investor owned and municipally owned utilities (Table 24-28). NOTE: Supplementing IOU and MOU capacity, co-generation capacity (of industrial plants within the state) has grown at a 6.7% compound annual rate since 1994, from 2,798.85 MW in 1994 to 3,579.0 in 1998 (Table 34).
31. The gap between consumption and IOU and MOU generation is widening over time (Table 24, Figure 2).
32. Using 1986 as the base year, total electricity generated by investor and municipally owned utilities has grown at a 1.72% compound annual rate, contrasted with a 2.25% growth rate in total consumption (Table 30).
33. Using 1986 as the base year, nuclear powered electricity generated by investor and municipally owned utilities has grown at a 3.69% compound annual rate (Table 31).
34. Using 1986 as the base year, coal and lignite powered electricity generated by investor and municipally owned utilities has grown at a 2.45% compound annual rate (Table 32).
35. Using 1986 as the base year, oil and natural gas powered electricity generated by investor and municipally owned utilities has grown at a 0.30% compound annual rate (Table 33).

INDIVIDUAL UTILITY AND GROUP CLASSIFICATION

INDIVIDUAL UTILITY AND GROUP CLASSIFICATIONS

36. Louisiana's utilities are grouped by categories: (1) investor owned (IOUs); (2) municipally owned (MOUs); (3) Louisiana Public Power Association (LPPA); (4) Texas and Oklahoma Public Power Association (TOPPA); (5) Louisiana Co-generators and small power producers (LA Cogen); and (6) the Sidney A. Murray Hydro Power station (Tables 34-40).
37. In 1998, IOUs accounted for 15,442.9 MW, or 74.8%, of the total generating capacity in the state and generated 63,474.170 million kwhs, or 88.29%, of electric energy consumed (Table 34).
38. In 1998, MOUs accounted for 911.5 MW, or 4.41%, of the total generating capacity in the state and generated 1,146.448 million kwhs, or 1.59%, of electric energy consumed (Table 34).
39. In 1998, LPPA accounted for 366.1 MW, or 1.77%, of the total generating capacity in the state and generated 2,266.591 million kwhs, or 3.15%, of electric energy consumed (Table 34).
40. In 1998, TOPPA accounted for 165.0 MW, or 0.80%, of the total generating capacity in the state and generated 923.990 million kwhs, or 1.29%, of electric energy consumed (Table 34).
41. In 1998, Louisiana's Co-generation and small power producers accounted for 3,579.0 MW, or 17.33%, of the total generating capacity in the state and generated for sale (over and above their internal use) 3,047.050 million kwhs, or 4.24%, of electric energy consumed in the end use market (Table 34).
42. In 1998, the Sidney A. Murray Hydroelectric plant accounted 182.4 MW, or 0.88%, of the total generating capacity in the state and generated 1,032.950 million kwhs, or 1.44%, of electric energy consumed (Table 34).

LOUISIANA'S LOAD PROFILE FOR RECENT YEARS (1995-1999)

43. Competitive restructuring of the electric utility industry requires separating the generation function from transmission and distribution functions in an industry that has traditionally operated in a fully integrated fashion.
44. In its Order of April 21, 1999 the Louisiana Public Service Commission initiated a Technical Conference to address issues concerning load profiles, scheduling and balancing procedures and related issues.
45. These hearings are ongoing.
46. If the ultimate consumer is to be given "choice" for his electricity supplier then their must be coordination of the delivery of power among and between multiple sources of electricity generation.
47. Electric power demands vary constantly during any hour and day. These data are currently the private province of the utilities.
48. Louisiana's monthly electric power swings are, however, published by the Energy Administration (EIA) (Table 41).
49. On a month to month basis Louisiana's electric power demand can vary nearly 72% from its lowest average month to its highest average month (Table 41).
50. The months of March/April have generally represented the lowest period of electric power demand during a calendar year (Table 41).
51. The months of July/August have generally represented the highest period of electric power demand during a calendar year (Table 41).

STATE ECONOMIC GROWTH AND ELECTRIC POWER

52. The importance of electric power to a nation's economic growth, or to a state's economic growth, is well established.

53. Using state "Gross Domestic Product" (GDP) data for the period 1994-1998, a simple linear regression model establishes the high degree of correlation between the state GDP and electricity consumption (Table 42).

54. As previously noted, most of the states electric power capacity additions during the period 1986-1998 have come from industrial co-generation.

55. As the heavy industry of Louisiana's economy (generally the petro-chemical sector) have been forced to generate more and more of their own electric power needs, the utilities serving the state appear to have been either unable, or unwilling, to cooperatively and aggressively initiate substantive efforts toward economic diversification that would lead to an increase in electric power generation–and added "state "GDP" growth.

56. For Louisiana residents to continue to participate in the national economic boom, the utilities and merchant plants serving the state must be willing to (1) expand electric generating capacity that is dependable and affordable under all economic conditions, and (2) participate aggressively with State Economic Development activities to bring new jobs to the state from both "Old Economy" and "New Economy" opportunities.

Estimates of the Cost of Electric Power Generation

Nearly 91% of the planned additions to electric generation capability across the nation currently are based on the new gas turbine efficiencies. This will place added strains on the ability of the nation's gas producers.

With this emphasis by electric power generators on the use of natural gas for generating electric power, it is appropriate to assess the relative cost of generating electricity under differing options and from differing sources of fuel.

The Energy Information Administration has developed examples of the cost of generating electric power using the different fuels and technologies available today. These data appear in the Forecasts section of the EIA publication, "Annual Energy Outlook, 2000" under web page, Forecasts, Assumptions, Electricity, tables 36-39.

For the sake of comparability it is necessary to incorporate certain additional assumptions:

(1) life of the investment (power plant assets): we have assumed 50 years for a coal fired and nuclear plants, and 25 years for a gas/oil fired plants;
(4) rate of depreciation: for our internal calculations we have assumed straight line depreciation;
(6) annual operating rate: i.e., how many hours per year of generating electricity, we have assumed an annual 80% of capacity operating rate for all options;
(8) fuel cost: we have assumed a coal cost $1.217/MMbtus and natural gas cost $3.50/MMbtus;
(11) carbon emissions have been assumed to be 208 pounds per MMbtus for coal and about half that for natural gas, 129 pounds per MMbtus;
(14) we have calculated the cost of carbon emissions as that dollar value that would equalize the cost of generating electricity between nuclear and coal technologies;
(17) 50 % debt financing has been used in each of the options;
(18) first year annual interest costs at 9 % are included in the calculations;
(18) all options retire debt within 25 years;
(19) a 12 % return on equity profit calculation has been included for all forms of electric power generation;
(19) taxes are calculated at 38%.

Comparison of the Cost of Generating Electricity from various Types of Power Technology

Raw Data from the Energy Information Administration

TECHNOLOGY	Size-MW	Cost/kwh
Scrubbed New Coal	**400**	**$0.0392**
Integrated Coal/Gas Combined Cycle	**428**	**$0.0554**
Gas/Oil Steam	300	$0.0579
Conventional Gas/Oil Combined Cycle	250	$0.0363
Advanced Gas/Oil Combined Cycle	**400**	**$0.0365**
Conventional Combustion Turbine	160	$0.0448
Advanced Combustion Turbine	120	$0.0388
Advanced Nuclear	**600**	**$0.0605**

Assumptions added by Technology Assessment

Financing 50 % debt, 50 % equity

Debt cost 9 % rate

Return on Equity 12 %

80 % operating rate

Fuel cost, coal $1.217/MMbtus; Natural Gas $3.50/Mcf; Nuclear $0.00542/kwh

Depreciation straight line

Taxes at 38 % rate

Fixed and variable operating costs, and capital cost of construction from EIA

Much discussion has ensued over the role of carbon dioxide in global climate change (warming). Should there be a charge for carbon emissions? And if so, what would that fee be? One method for making that determination is to look at what carbon fee would render nuclear electric power generation competitive with coal fired generation. That carbon emissions fee would equate to close to $20.00 per ton of carbon

What upper limit charge could be made for carbon emissions that would render nuclear generation competitive with coal?

Nuclear $/khw	$0.0605
Scrubbed new coal $/kwh	$0.0392
difference $/kwh	$0.0213
Total Emissions lbs/kwh, Coal fired	1.890096
Emissions Cost/lb	$0.0113
Emissions Value per short ton (2000 lbs)	**$22.5523**

Adding a carbon emissions fee to the cost of generating electricity would equalize the cost of electric

power generation and ensure that all energy sources were utilized to sustain the nation's economic growth momentum and to advance the American standard of living.

If no emissions fee is adopted, but the new gas fired technology is built as currently planned, the price of natural gas could be raised to $3.29/Mcf delivered and still be competitive with coal fired generation.

What upper limit price of natural gas would be competitive with Coal without a charge for carbon emissions?			
Scrubbed new coal $/kwh	$0.0392		
Advanced Gas/Oil Combined Cycle		$0.0365	
less Fuel @$3.50/Mcf		$0.0222	
difference-$/kwh	$0.0143	$0.0143	
difference between coal and gas $/kwh	$0.0249		
heat rate 6350 Nbtu/kwh=$/btu		$0.0000039	
times 1,000,000 Btus/Mcf		$3.9156	(less transmission fees)

If on the other hand a carbon emissions fee is adopted at the $20.00 per ton level, the price of natural gas could rise to nearly $5.09 per Mcf and still be competitive with coal (and nuclear) powered electric generation.

With a charge for carbon emissions?			
Scrubbed new coal $/kwh	$0.0605		
Advanced Gas/Oil Combined Cycle		$0.0365	
less Fuel @$3.50/Mcf		$0.0222	
difference-$/kwh		$0.0143	
plus emissions-lbs/kwh		0.779272	
Emissions Cost @ $20.6201/ton		$0.0080	
Cost/kwh w/o fuel with emissions	$0.0231		
difference-$/kwh	$0.0374		
heat rate 6350 Nbtu/kwh=$/btu		$0.0000059	
times 1,000,000 Btus/Mcf		$5.8882	(less transmission fees)

In either case the cost of electric power to consumers appears destined to rise, the promises of deregulation to the contrary. This will lead to greater emphasis on energy conservation. It will also, absent competitive actions to reduce carbon emissions by other international economies, either by switching to more gas powered generation or by initiation of a carbon emissions fee, render U. S. industry less price competitive in the international marketplace.

GLOSSARY

Avoided Cost - The incremental cost an electric utility avoids incurring by purchasing an equivalent amount of power from a qualifying facility (QF) instead of generating the power itself. This is the price electric utilities pay for a QF's output.

Bulb Turbines - Turbines whose turning shaft rests horizontally rather than vertically as is the case in most hydro plants. Bulb turbines were developed in Europe during the 1920's and are specifically designed for low head conditions.

Capability - The maximum load that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given period of time without exceeding approved limits of temperature and stress. In the context of this report the terms "Capability" and "Net Summer Capability" are interchangeable.

Capacity - The full load continuous rating of a generator, prime mover, or other electric equipment under specified conditions as designated by the manufacturer. This report uses net summer capability as its statistic for measuring electric generator capacity of utilities. Therefore, all discussion of electric generator capacity in this report is based on the use of net summer capability data.

Cogeneration - The sequential production of electrical energy and useful thermal energy from the same fuel source.

Cooperative (Cooperatively-Owned Electric Utility) - A group of persons who have organized a joint venture for the purpose of supplying electric energy to a specified area. Such ventures are generally exempt from the Federal income tax laws. Most cooperatives have ben financed by the Rural Electrification Administration (REA), now called the Rural Utilities Services Administration.

Electric Power Industry - The public, private, and cooperative electric utility systems of the United States taken as a whole. This includes all electric systems serving the public: regulated investor-owned electric utility companies; Federal power projects; State, municipal, and other government-owned systems, including electric public utility districts; electric cooperatives, including Generation and Transmission entities ("G & Ts"); jointly owned electric utility facilities, and electric utility facilities owned by a lessor and leased to an electric utility. Excluded from this list are the special purpose electric facilities or systems that do not offer service to the public. The term appears to be evolving to include any privately owned generator that offers electricity for sale on the wholesale open market.

Electric Utility - An enterprise that is engaged in the generation, transmission, or distribution of electric energy primarily for use by the public and that is the major power supplier within a designated service area. Electric utilities include investor-owned, publicly-owned, cooperatively-owned, and government-owned (municipals, Federal agencies, State projects, and public power districts)systems. An entity that solely operates qualifying facilities under the Public Utility Regulatory Policies Act of 1978 (PURPA) is not considered an electric utility.

Energy Policy Act of 1992 (EPACT) - Amends PUHCA to create a new class of independent power producers called exempt wholesale generators (EWGs) that are exempt from PUHCA. EPACT is designated to encourage competition in energy markets by significantly expanding the authority of FERC to order transmission access. It also makes it easier for utilities to operate unregulated subsidiaries that sell power to other utilities and industrial customers anywhere in the U. S. and even abroad. Profits from such sales are unregulated.

Exempt Wholesale Generator - A class of independent power producer created by EPACT that is exempt from PUHCA corporate organizational restrictions. An EWG may generate electricity and sell power wholesale to utilities and other wholesale bulk power purchasers, such as rural electric cooperatives. Any entity, whether currently subject to PUHCA or not, is permitted to own EWGs without limitation. For registered holding companies, approval from the Securities and Exchange Commission (SEC) is required for the financing of EWGs as well as service sales and construction contracts involving EWGs.

Federal Energy Regulatory Commission (FERC) - An independent agency created within the Department of Energy (October 1, 1977), FERC is vested with broad regulatory authority. Virtually every facet of electric and natural gas production, transmission, and sales conducted by private investor-owned utilities, corporations or public marketing agencies was placed under commission purview through either direct or indirect jurisdiction if any aspect of their operations were conducted in interstate commerce. As successor to the former Federal Power Commission (FPC), the FERC inherited practically all of the FPC's interstate regulatory functions over the electric power and natural gas industries.

Fuel - Any substance that can be burned to produce heat; also, materials that can be fissioned in a chain reaction to produce heat.

Gigawatt (GW) - one billion watts.

Gigawatthour (GWH) - One billion watthours, or one million kilowatthours.

Government-Owned Electric Utility - Municipally-owned electric systems and federal and state public power projects. Cooperatives are not included in this grouping. The term is interchangeable with **Publicly-Owned Electric Utility.**

Grid - The layout of an electrical distribution system.

Gross Generation - The total amount of electric energy produced by the generating units at a generating station or stations, measured at generator terminals.

Hydroelectric Plant - A plant in which the turbine generators are driven by falling water.

Independent Power Producer (IPP) - A class of privately owned, no-utility generator that builds power plants mainly to supply and sell power to electric utilities.

Investor-Owned Electric Utility - A class of utility ownership that is privately owned and organized as a tax paying business, usually financed by the sale of securities in the capital markets.

Kilowatt (KW) - One thousand watts.

Kilowatthour (KWH) - One thousand watthours.

Load (Electric) - The amount of electric power delivered or required at any specific point(s) on a system. The requirement originates at the energy-consuming equipment of the customers.

Low Head Hydro - Where head water level at station intake and tail water level at station discharge is 25 ft. of less.

Megawatt (MW) - One million watts.

Megawatthour (MWH) - One million watthours.

Net Generation - Gross generation less the electric energy consumed at the generating station for station use.

Net Summer Capability - The steady hourly output which generating equipment is expected to supply to system load exclusive of auxiliary power, as demonstrated by tests at the time of summer peak demand.

Non-Coincidental Capability - The sum of two or more capabilities of individual systems that were available at the time of the peak load of the individual system. Generally, the capability of an individual system at its peak load does not occur during the same time interval as the capability of another system at its peak load. Meaningful only when considering capabilities and loads within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than one year.

Non-Coincidental Peak Load - The sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only when considering loads within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than one year.

Non-Utility Generator (NUG) - A corporation, person, agency, authority, or other legal entity or instrumentality that owns electric generating capacity and is not an electric utility. The entity generates on-site all or part of its electricity requirements, does not sell to the public, and may or may not sell electricity to electric utilities.

Operable - A generating unit is operable when it is available to provide power to the grid. For a nuclear unit, this is when it receives its full power amendment to its operating license from the Nuclear Regulatory Commission (NRC).

Peak Load - The demand at the instant of greatest load, usually determined from the readings of indicating

or graphic meters.

Percent Capacity Margin - The difference between capability and peak load divided by capability time 100.

Percent Reserve Margin - The difference between capability and peak load divided by peak load times 100.

Power - The rate at which energy is transferred. Electrical energy is usually measured in watts. The term is also used for a measurement of capacity.

Privately Owned Electric Utility - See **Investor-Owned Electric Utility**

Public Utility Holding Company Act of 1935 (PUHCA) - Gave the Securities and Exchange Commission (SEC) the authority to break up the large and powerful trusts that controlled the nation's electric and gas distribution networks and to regulate the reorganized industry to prevent their return. In response to arguments that PUCHA's regulations were impediments to the development of an efficient electricity market, the Energy Policy Act of 1992 was enacted to encourage competition in energy markets.

Public Utility Regulatory Policies Act of 1978 (PURPA) - One part of the National Energy Act, PURPA contains measures designed to encourage the conservation of energy, more efficient use of resources, and equitable rates. Principal among these were suggested retail rate reforms and new incentives for production of electricity by cogenerators and users of renewable resources. PURPA requires utilities to purchase power from qualifying facilities at the utility's avoided cost.

Publicly-Owned Electric Utility - A class of ownership found in the electric power industry that includes those utilities operated by municipalities, state, and federal power agencies.

Qualifying Facility (QF) - This is a cogenerator, small power producer, or non-utility generator that meets certain ownership, operating and efficiency criteria established by the Federal Energy Regulatory (FERC) pursuant to PURPA, and has filed with the FERC for QF status or has self- certified. QFs are guaranteed that electric utilities will purchase their output at the utility's avoided cost. For additional information, see the Code of Federal Regulation, Title 18, Part 292.

Renewable Energy Source - An energy source that is regenerative or virtually inexhaustible. Typical examples are wind, biomass, geothermal, and water power.

Run-of-the River Hydroelectric Plant - A low head plant using the flow of a stream as it occurs, and having little or no reservoir capacity for storage. (See **Hydroelectric Plant)**

Rural Electrification Administration (REA) - A credit agency of the U. S. Department of Agriculture (USDA) which assists rural electric and telephone utilities to obtain financing. REA was established by Executive Order No. 7037 of May 11, 1935, and given statutory authority by the Rural Electrification Act of 1936. In 1994 the name was changed to **Rural Utilities Service (RUS).**

Rural Utilities Service (RUS) - See **Rural Electrification Administration**

Small Power Producer (SPP) - According to PURPA a facility limited to a capacity of 80 MW and generating electricity using renewable energy as a primary source. In 1990 the capacity limit was removed for certain specific energy sources, but it was reinstated in 1995 when Congress did not act to continue the removal.

Total Net Generation Available to the Statewide Power Grid - Consists of utility net generation by plants within Louisiana plus power purchased by the utilities from non-utility generating sources within the state. It does not include self-generated power that is consumed on site by non-utility generators (NUGs) or power purchased by the utilities fro out of state generating sources.

Total Statewide Generation or Net Generation by All Sources - Consists of utility net generation by plants within Louisiana, plus the total generation of all non-utility generating sources within the state. The term *includes* self-generated power that is consumed on site by non-utility generators (NUGs).

Wheeling Service - The use of the transmission facilities of one system to transmit power and energy by agreement of, and for, another system with a corresponding usage fee, or "wheeling charge".