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Volume 1 of 3 Volumes

Lifeline Electric Rates and Alternative Approaches to the Problems of Low-Income Ratepayers

Cross-Program Summary

July 1980

Prepared for:
U.S. Department of Energy
Economic Regulatory Administration
Office of Utility Systems

Under Contract No. AC01-79RG10066

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Washington, D.C. 20461

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Cleveland, Ohio 44115
Under Contract No. AC01-79RG10066

Volume 1

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Section 1

INTRODUCTION

Under Section 114 (b) of the Public Utility Regulatory Policies Act of 1978 (PURPA), state regulatory authorities must determine, after an evidentiary hearing, whether a lifeline rate should be implemented by each electric utility under its jurisdiction which does not have such a rate schedule in effect by November 9, 1980. Similarly, each nonregulated utility covered under PURPA must determine whether to implement a lifeline rate.

The purpose of the present study is to aid the U.S. Department of Energy in developing materials to assist state regulatory authorities and nonregulated utilities in determining whether or not to implement lifeline rates. In accordance with this objective, case studies of ten implemented and ten rejected lifeline rate programs were conducted. The initiation and implementation of these programs are described in detail and their actual or anticipated impact on conservation, efficiency and equity are assessed.

1.1 Scope and Method of Analysis

The case studies were conducted to address the

following topics and to provide appropriate description and evaluation:

- Reasons for the adoption or rejection of various lifeline initiatives
- Assessment of the level of consumer need for energy assistance
- The nature of eligibility criteria and the reasons they were chosen
- Methods of revenue recovery and reasons they were chosen
- Quality of program administration and the workability of targeting
- Assessment of lifeline's impact on utility companies, consumers, and the affected regions
- Assessment of lifeline's implications for conservation, efficiency, and equity.

The subsequent descriptive and evaluative effort was subject to the inherent advantages and limitations of the case study approach. In this sense, the study provides detailed and rich descriptive material on the unique features of individual lifeline initiatives. At the same time, general trends and conclusions, derived from the twenty separate case studies, are necessarily suggestive in nature, and do not have the scientific quality of systematic and rigorous statistical analyses.

1.2 Selection of Programs

Ten implemented and ten rejected lifeline programs were selected so that in each of these groups at least one program would have the following eligibility requirements:

- all residential users
- elderly low-income residential users
- elderly residential users.

Additional considerations for program selection included the adequacy of available information, program duration and a proper balance among the various types of lifeline initiatives. An extensive survey of implemented and non-implemented lifeline programs led to the selection of twenty case studies according to these criteria. This survey did not lead to the identification of lifeline programs targeted to all low-income persons, irrespective of age, and the study was thus limited to programs with one of the above three eligibility criteria. The essential features of the programs, selected for study, are summarized in Table 1-1.

1.3 Structure of the Report

The findings of this study are reported in three volumes. The first volume provides general overview and cross program comparisons of the

- o social and economic context of lifeline
- o governmental process, and
- o impact assessment.

Volume 2 describes in detail the case studies of the initiation, implementation and assessment of ten implemented programs. Volume 3 provides a similar description of the ten non-implemented lifeline proposals.

1.4 Summary of Major Findings

In the initiation and the adoption or rejection of lifeline proposals, the following trends are apparent.

1. Lifeline proposals, formally generated within the regulatory process (the Public Utility Commission or utility company), were more likely to be adopted than legislative initiatives.

2. The implemented lifeline programs evolved as policy issues closely after the 1973 oil embargo. In contrast,

the rejected programs, initiated approximately four years later, were considered in a more complex policy environment. By this time, various alternate methods for assisting low-income people had been developed and lifeline appears to have lost some of its early appeal.

3. Proposals that were either labeled conservation rate breaks or followed intensive analysis and study were more likely to be adopted than those that emanated primarily from low-income consumer pressure alone.

With regard to lifeline's impact on the criteria of conservation, efficiency, and equity, the indications are that lifeline rates

- have not impacted negatively on conservation, even though there was no evidence of any significant positive impact
- did not substantially alter utility peaking characteristics or increase administrative costs; and thus had minimal implications for operating efficiency
- were consistent with a reasonable compromise among the conflicting equity criteria of "good faith," "notional equality" and "ability to pay."

By way of general conclusion, the present study indicates that while lifeline programs have not impacted negatively on conservation, efficiency, or equity, neither have they promoted any one of these criteria effectively. Consequently, it is recommended that the Section 114 hearings evaluate various promising nonrate policies along with lifeline proposals and thus identify the most effective delivery mechanism for energy assistance to low-income households.

TABLE 1-1

PROGRAM DESCRIPTIONS

Program (Implemented)	Date Adopted	Eligibility	Lifeline Block Size in kwh	Source of Revenue Recovery
Boston Edison Rate Freeze	1975	A	384	All customer classes
California Lifeline	1975	A	240[1]	All customer classes
Florida Power & Light Conservation Rate	1977	A	750	Residential usage in excess of 750 kwh
Iowa-Illinois Gas & Electric Small-Use Rate	1978	A	500[2]	Regular residential consumers
Maine Demonstration Program	1975	ELI	500	All customer classes
Massachusetts Electric A-65 Rate	1978	ELI	375	All customer classes
Michigan Optional Senior Citizen Rate	1978	E	300	Regular residential consumers
Narragansett Electric A-65 SSI Rate	1978	ELI	375	Regular residential consumers
Northern States Power Conservation Rate Break	1978	A	400	Regular residential consumers
Potomac Electric Power Rate Freeze	1973	A	450	All customer classes

Table 1-1 (Cont'd.)

Program (Rejected)	Date Proposed	Eligibility	Lifeline Block Size in kwh	Source of Revenue Recovery
Delaware Senate Bill 202	1977	A	800[3]	NS
Illinois House Bill 83	1977	A	500	All customer classes
Maine Legislative Document 1043	1979	E	500	General fund appropriation
Minnesota House File 1243	1977	A	500	All customer classes
New York Assembly Bill 12214	1978	A	400	General fund appropriation
New York Senate Bill 7013-A	1978	E	200	Gross receipts tax credit for utility company
Rhode Island House Bill 5770-A	1979	E/LI[4]	NS	NS
South Dakota Senate Joint Resolution 9	1978	A	500	NS
West Virginia House Bill 943	1978	A	500	All customer classes
Wisconsin Assembly Bill 1250	1977	A	NS	All customer classes

Table 1-1 (Cont'd.)

[A]All residential	[1]Basic allowance
[E]Elderly	[2]Winter rates
[ELI]Elderly Low-Income	[3]Summer rates
[NS]Not specified	[4]And others

Note: "All customer classes" includes residential, commercial and industrial classes of consumers. "Regular residential consumers" means residential customers who do not qualify for benefits under targeted lifeline rate schedules.

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Section 2

THE CONCEPTUAL BACKGROUND

The Public Utility Regulatory Policies Act (PURPA) mandates the consideration of lifeline electric rates by state regulatory authorities and certain non-regulated utilities. The Act does not, however, delimit the meaning of "lifeline rates" in any useful, operational manner beyond reference to special "rates for essential needs." Consequently, definitional issues remain and need to be tackled before the results of the twenty case studies can be meaningfully summarized.

2.1 Objectives Associated with Lifeline Rates

Lifeline is generally presented as a price mechanism for promoting a potentially compatible set of social goals, i.e.,

- alleviating the special hardships of low-income households due to escalating energy prices, and
- promoting energy conservation.

The first of these objectives is most readily associated with lifeline rates. To address this objective, the utility bills of low-income households are reduced to a

level where "essential energy needs" can be met within the household's limited budget.

In contrast, focusing on the second objective of energy conservation requires a price signal that ostensibly modifies energy use patterns, i.e., provides lower rates in the first rate block and higher rates in the tail blocks. If one makes the assumption that low-income households generally use smaller amounts of electricity and limit their monthly consumption so as not to exceed the first block, conservation rate breaks or inverted rates are compatible with alleviating the special problems of low-income individuals. However, since the basis for this assumption is somewhat tenuous, the conservation and low-income assistance objectives are not necessarily compatible.

2.2 Lifeline Forms

Selecting the mechanism for delivering lifeline benefits is generally conditioned by the primary objectives of energy conservation or low-income assistance and takes several forms:

- o flat rates, as opposed to declining blocks[1]
- o rate freezes in the lowest block[2]
- o inverted rate structures[3]

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[1]Flat rates provide a uniform price per unit of consumption (¢/kwh), independent of the quantity of consumption. Declining block rates provide increasingly lower price per unit of consumption (¢/kwh) as the quantity of consumption increases.

[2]Rate freezes refer to regulatory decisions, pursuant to rate hearings, to maintain the price per unit of consumption at existing levels in specified blocks.

[3]Inverted rates provide for increasingly higher price per unit of consumption (¢/kwh), as the quantity of consumption increases.

- service charge reduction or eliminations.

Beyond these specific modifications of the existing rate structure, the issue of targeting is paramount. In this sense lifeline rates are either

- universal--delivering "essential" utility services at lower rates for all residential customers, or
- targeted--delivering "essential" utility services at lower rates to a selected category of eligible households.

Targeted rates apply to customer groups that are least able to keep up with escalating utility prices and clearly focus on the first objective of assisting households with special needs. Generally, the target populations include low-income, elderly individuals on fixed incomes. The Massachusetts Electric and Narragansett Electric A-65 rates, the Maine Demonstration Program, and the Michigan Optional Senior Citizen Rate are examples of targeted rates.

Arguments for targeting lifeline benefits are typically based on contentions that

- limited revenue shortfalls make recovery from other customer classes less onerous and
- explicit targeting through eligibility requirements and through a certification process will ensure that the lifeline subsidy is extended only to households subject to the greatest hardships.

In contrast, universal lifeline rates tend to be adopted when energy conservation is the paramount objective or when the anticipated administrative difficulties of targeting appear to be prohibitively severe. In this way, the problems of arbitrary eligibility criteria, costly marketing and outreach efforts, certification and continual

recertification can be eliminated. Moreover, if one is willing to make the assumption that low-income households use smaller amounts of electricity, universal lifeline rates can also be envisioned as serving both energy conservation and assistance objectives, concurrently.

2.3 Associated Issues

Apart from the workability of targeting and the specific rate mechanisms of implementation, the lifeline rate concept is associated with several additional areas of uncertainty:

- definition of the meaning of "essential" utility service
- appropriate methods of revenue recovery
- compatibility with marginal cost pricing
- impact on the participating utility companies' operating efficiency
- impact on energy consumption
- compatibility with notions of equity or fairness, and
- conformance with state laws.

Some of these issues are empirical in nature and can be addressed through observation and descriptive analysis. Others, like the concerns about equity and "appropriate" revenue recovery methods are fundamentally normative in character and will continue to generate controversy as long as different individuals hold to different criteria of equity in the regulatory process.

The present collection of twenty case studies was undertaken to address the above issues through detailed description of the conception, implementation, and impact

of lifeline rates, or in the case of nonimplemented programs, the anticipated impact of these rate initiatives. While the case studies represent an ambitious descriptive effort, they are nevertheless subject to the limitations of the case study approach as well as the inherent limitations of secondary analysis. Consequently, methodological constraints, together with the heavily normative nature of the issues preclude a resolution of the controversy surrounding lifeline. The case studies and resulting generalization should, however, shed light on the important issues and provide valuable background information for the PURPA Section 114 lifeline hearings.

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Section 3

THE SOCIAL AND ECONOMIC CONTEXT

The issue of lifeline rates did not evolve in a vacuum. Rather, the early popularity of the concept can be attributed to the 1973 oil embargo and the perceived need, at that time, to take immediate and direct action to assist low-income households and to promote energy conservation measures. Nevertheless, lifeline was not uniformly popular and was seriously considered and implemented in only some of the states. The present chapter focuses on the demographic and economic characteristics of these states and draws comparisons with national averages to explore the nature of state environments that fostered the initiation and implementation of lifeline rates.

3.1 General State Trends

Table 3-1 displays some of the general social and economic characteristics of states with a significant lifeline experience.

The first variable, 1978 per capita income,[1] does

[1]Due to reasons of differential data availability,

not appear to be a distinguishing feature. Average income levels in states with implemented and non-implemented lifeline rates were evenly distributed around the national average of $7836 and indicate that lifeline is not typically associated with the poorest states and the largest low-income populations.

Since statewide income averages often conceal substantial variations, the 1978 percent urban population became an interesting variable. Along this dimension, seven of the ten states with implemented programs exceeded the national average of 73.5% urbanization and suggest that concentrations of urban poverty could be one aspect of lifeline's popularity. This hypothesis is further supported by the geographical distribution of states with lifeline programs (see Figure 3-1).

Revenue recovery for lifeline rates can be visualized as a quasi-tax, and levels of 1977 state + local income tax burdens could thus become relevant conditioning factors. The extent of state + local tax burdens, however, was evenly distributed along the national average of 12.8% and suggests that the quasi-tax issue was not a controlling factor in the consideration of lifeline.

Finally, (1977) residential electric rate trends showed that states with implemented lifeline programs tended to have somewhat higher electric rates than the national average of $.0384 per kwh.

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the dates of social and economic variables do not reflect the same point in time. For any one variable, however, time is constant for all states.

3.2 Low-Income Household Characteristics

Table 3-2 summarizes some of the salient features of the states' low-income and elderly populations.

Nine of the ten states with implemented lifeline rates had (1969) low-income population percentages that were significantly below the national average of 15%. Two states, however, with exceptionally large low-income populations (South Dakota, 21.3% and West Virginia, 24.6%) rejected lifeline proposals.

In contrast, the (1977) percentage of low-income elderly residents was typically and substantially higher in states with implemented as well as non-implemented programs than the national average of 1.4%. This strong tendency suggests that the aversion to the income redistributive aspects of revenue recovery was more easily overcome when the beneficiaries or target populations were the elderly poor as opposed to low-income households in general.

Informal estimates indicate that median-income households' recent (1977-1978) home energy expenditures amounted to approximately 10% of their annual income.[2] In each of the states we have studied, low-income households expended resources substantially in excess of this 10% level and as expected, the relative magnitude of low-income energy expenditures was strongly correlated with the popularity of lifeline.

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[2] U.S. Department of Energy, Fuel Oil Marketing Advisory Committee, "Low-Income Energy Assistance: A Profile of Need and Policy Options," Draft Working Paper, Washington, D.C., March 19, 1979, Pg. 8.

3.3 Utility Company Characteristics

As Table 3-3 indicates, utility companies in five of the ten states with implemented lifeline rates relied heavily on fuel oil for electric generation. In these states oil use substantially exceeds the (1977) national average of 17% and was generally correlated with higher fuel costs and residential rates.

3.4 Summary of Patterns

The above descriptive analysis of the underlying social and economic factors suggests that the popularity of lifeline is associated with:

- o urbanized populations
- o high percentages of low-income elderly households
- o residential electric rates above the national average.

As a contributing factor to the last two items, utility company reliance on fuel oil for electric generation seems to have been particularly important.

FIGURE 3-1

STATES WITH IMPLEMENTED AND REJECTED "LIFELINE" PROGRAMS

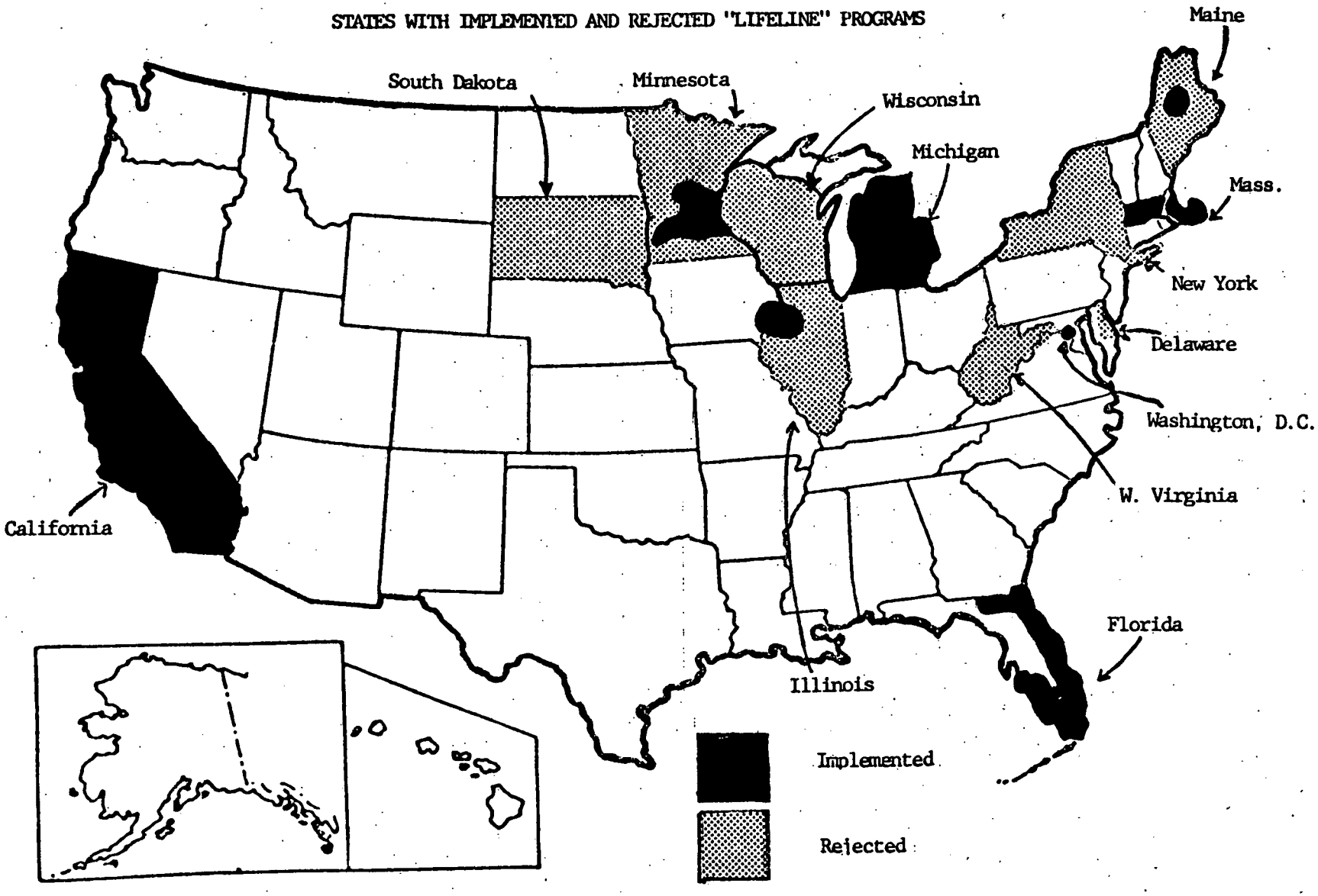

TABLE 3-1

GENERAL STATE TRENDS

States with Implemented Programs	Per Capita $ Annual Income[1] (1978)	Urban Population as Percent of Statewide Population[2] (1978)	Combined State/Local Income Tax Load as % of Income[3] (1977)	Average Residential Electric Rates (Cents per kwh)[4] (1977)
California	8927	90.9	15.8	3.97
Dist. of Col.	9924	100.0	13.6	4.27
Florida	7573	80.5	10.6	3.87
Illinois*	8903	83.0	11.8	4.12
Iowa	8002	57.2	11.6	4.01
Maine*	6292	50.8	13.3	3.90
Massachusetts	7924	84.6	15.1	5.28
Michigan	8483	73.8	12.7	4.21
Minnesota*	7910	66.4	14.2	3.70
Rhode Island*	7472	87.1	12.5	5.40

Table 3-1 (Cont'd.)

States with Non-Implemented Programs	Per Capita $ Annual Income[1] (1978)	Urban Population as Percent of Statewide Population[2] (1978)	Combined State/Local Income Tax Load as % of Income[3] (1977)	Average Residential Electric Rates (Cents per kwh)[4] (1977)
Delaware	8534	72.2	12.3	5.20
New York	8224	85.6	17.2	5.88
South Dakota	6864	44.6	11.5	3.26
West Virginia	6624	39.0	11.3	3.49
Wisconsin	7532	65.9	14.2	3.69
National Average	7836	73.5	12.8	3.84

*Also has a non-implemented program.

[1]The U.S. Department of Commerce Newsletter, Bureau of Economic Analysis (1978 State)

[2]U.S. Bureau of the Census, 1970 Census Population; Vol. 1, Characteristics of the Population, Part 1, U.S. Summary, Table 18.

[3]U. S. Bureau of the Census, Governmental Finances in 1977-78, Series GF77, No.5.

[4]State Electricity Profiles, Electricity Consumers Resource Council, (ELCON), 1979.

TABLE 3-2

LOW-INCOME HOUSEHOLD CHARACTERISTICS

States with Implemented Programs	Low-Income Families as % of Statewide Population[1] (1969)	Elderly as % of Statewide Population[2] (1975)	Low-Income Elderly as % of Statewide Population[3] (1975)	Total Home Energy Expenditures ($)[4] (1977-1978)	Total Home Energy Expenditures (as % of Income)[4] (1977-1978)
California	11.6	9.7	2.0	416	13
Dist. of Col.	12.3	10.1	2.3	628	19
Florida	18.0	16.0	3.2	567	17
Illinois*	10.7	10.3	1.8	630	18
Iowa	13.5	12.7	2.8	664	20
Maine*	11.3	11.8	2.9	367	24
Massachusetts	9.3	11.6	1.5	685	20
Michigan	10.3	9.0	1.7	657	19
Minnesota*	12.3	11.2	2.6	711	21
Rhode Island*	11.9	12.2	2.9	707	22

Table 3-2 (Cont'd.)

States with Non-Implemented Programs	Low-Income Families as % of Statewide Population[1] (1969)	Elderly as % of Statewide Population[2] (1975)	Low-Income Elderly as % of Statewide Population[3] (1975)	Total Home Energy Expenditures ($)[4] (1977-1978)	Total Home Energy Expenditures (as % of Income)[4] (1977-1978)
Delaware	11.7	8.6	1.9	591	19
New York	12.2	11.3	2.4	844	23
South Dakota	21.3	12.5	3.3	694	23
West Virginia	24.6	11.7	2.4	597	21
Wisconsin	11.0	11.2	2.0	628	18
National Average	15.0	10.5	1.4		

*Also has a non-implemented program.

[1]U.S. Bureau of the Census. County and City Data Book, 1969. (A Statistical Abstract Supplement). U.S. Government Printing Office, Washington, D.C. 20402

[2]U.S. Bureau of the Census, Current Population Reports, Illustrative Projections of State Populations by Age, Race, and Sex; issued March, 1979, Series P-25, #796

[3]1975 Drawn from Statistical Notes from the National Clearinghouse on Aging (1978)

[4]Hoffman, Wayne L. Energy Need Among Low-Income Households: State Specific Estimates Using Several Alternative Measures, Washington, D.C: The Urban Institute, 1979.

TABLE 3-3

UTILITY COMPANY CHARACTERISTICS

States with Implemented Programs	Percent of Electric Generation by Source[1] (1977)		Percent Components of Operating Expenditures[1] (1977)		Percent Electric Consumption by Customer Class[1] (1977)			Average Residential Electric Rates (Cents per kwh)[1] (1977)
	Fuel Oil	Gas	Fuel	Purchased Power	Residential	Commercial	Ind. and Misc.	
California	56	26	60	8	30	33	37	3.97
Dist. of Col.	32	0	51	-10	31	28	41	4.27
Florida	46	14	46	0.3	49	29	22	3.87
Illinois*	6	1	33	7	30	26	44	4.12
Iowa	2	6	32	10	40	23	37	4.01
Maine*	9	0	8	47	39	22	39	3.90
Massachusetts*	87	0	16	42	37	35	28	5.28
Michigan	12	3	39	15	31	20	49	4.21
Minnesota*	2	1	26	8	38	17	45	3.70
Rhode Island	99	0	3	57	37	32	31	5.40

Table 3-3 (Cont'd.)

States with Non-Implemented Programs	Percent of Electric Generation by Source[1] (1977)		Percent Components of Operating Expenditures[1] (1977)		Percent Electric Consumption by Customer Class[1] (1977)			Average Residential Electric Rates (Cents per kwh)[1] (1977)
	Fuel Oil	Gas	Fuel	Purchased Power	Residential	Commercial	Ind. and Misc.	
Delaware	68	2	74	-27	29	22	49	5.20
New York	46	0	36	7	29	31	40	5.88
South Dakota	0	0	25	7	53	29	18	3.26
West Virginia	0	0	48	14	30	17	53	3.49
Wisconsin	2	1	29	7	38	25	37	3.69
National Average	17	14	41	9	33	24	43	3.90

*Also has a non-implemented program.

[1]State Electricity Profiles, Electricity Consumers Resource Council (ELCON), 1979.

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Section 4

THE GOVERNMENTAL PROCESS

The consideration and implementation of lifeline proposals occurred within the governmental process of the various states and included a variety of individual and organizational actors. In addition to utility firm(s), the following organizations were typical participants in lifeline determinations:

- State Legislatures
- Public Utility Commissions
- Consumer Groups

This section analyzes the roles that each of these participants assumed and presents the apparent trends as they became evident from the implemented and rejected lifeline case studies.

The analysis of this governmental process is presented in four sections:

- Initiation of Lifeline--An analysis of the socio-political environment in which the lifeline issue evolved.

- Proposal Characteristics--The content and form of lifeline rate structures, as initially introduced.

- Principal Actors--The major organizations involved in the governmental process and their roles.

- Conflict and Compromises--The major areas of conflict during the consideration of the original lifeline proposals, along with the compromises reached during the process of lifeline deliberations.

In each of these sections common trends are identified and discussed.

4.1 Initiation of Lifeline

The development and introduction of lifeline electric rates occurred soon after the 1973 oil embargo. While energy prices quadrupled, low-income persons were especially hard hit by escalating utility bills. Lifeline electric rates were subsequently proposed as one means for reducing the impact of these high utility costs for low-income individuals.

A comparison of the history of implemented lifeline programs points to the following initiation trends:

- The bulk of the implemented programs evolved as policy issues during the 1974 to 1977 period, in apparent response to the embargo of 1973.

- Consumer pressure as well as analytical studies about the impact of high utility rates on low-income people appear to have been the primary bases for the early popularity of the lifeline concept.

- Initial concrete steps in introducing the majority of implemented programs were taken by the Public Utility Commissions or the utility companies. The major exceptions to this trend were the California and Maine Demonstration programs which emanated from state legislatures.

The rejected lifeline programs exhibited markedly different characteristics:

- Two of the ten rejected programs were initiated in 1977 and eight in 1978.
- Six of the ten rejected programs were legislative initiatives, while the prime actors in the remaining were consumer groups, operating through such mechanisms as referenda.

The above trends for the implemented and rejected lifeline programs, summarized in Tables 4-1 and 4-2, lead one to the following general conclusions about the initiation process.

1. Lifeline proposals, formally generated within the regulatory process (the PUC or utility company), were more likely to be adopted than legislative initiatives.
2. The implemented lifeline programs first evolved as policy issues soon after the 1973 embargo. In contrast, rejected programs, initiated approximately four years later, were considered in a more complex policy environment. By this time, various alternate methods for assisting low-income people had been developed and lifeline appears to have lost some of its early appeal.
3. Proposals that were billed as either conservation rate breaks or followed intensive analysis and study were more likely to be adopted than those that emanated primarily from consumer pressure, alone.

4.2 Proposal Characteristics

The form and content of the lifeline proposals were reviewed to identify those characteristics that may have contributed to their implementation or rejection. The fundamental areas examined were:

- Targeting
- Certification of Eligible Households
- Recovery Mechanisms.

Along these dimensions, implemented lifeline programs broke down in the following way:

- The majority of the implemented programs (6) applied to all residential consumers with low electricity consumption.
- The remaining programs were targeted to elderly or elderly low-income electricity users.
- Certification of individuals participating in these four targeted programs was vested with the utility companies in all but one of the cases (Massachusetts A-65).
- Revenues to support the implemented lifeline programs were recovered through rate surcharges.
- The recovery population was evenly split between programs with recovery from only residential customers, and programs with recovery from all customer classes.

Apart from revenue recovery mechanisms and revenue recovery populations, rejected lifeline programs had similar attributes. Specifically, the following trends were identified:

- Seven of the ten rejected programs were targeted to all low volume users of electricity.
- Three rejected programs were targeted to the low-income elderly or elderly handicapped and disabled residents in the affected service areas.
- Although several of the rejected programs employed a rate surcharge to recover revenues (four), three programs would have relied on legislative appropriations, and three others failed to specify the recovery mechanism, in detail.
- The recovery population was divided into three groups
  - -- All customer classes
  - -- Industrial and commercial customers only
  - -- All taxpayers, via the taxing authority of the state.

Based on these trends, the most noticeable differences between implemented and rejected programs are in the revenue recovery area. Three rejected programs were to be funded by state appropriations, and this may have materially contributed to their rejection. The taxing capacity of these states was probably already strained and the legislatures might have been reluctant to impose additional tax burdens.

4.3 Principal Actors

The organizations and individuals involved in the lifeline process included:

- State Legislatures
- Utility Commissioners
- Industrial/Manufacturing Concerns
- Commercial Groups
- Consumer Groups
- Utility Companies

Tables 4-3 and 4-4 illustrate the characteristic position and level of involvement that each of these groups exhibited during the consideration of the implemented and rejected lifeline programs. Several trends are evident from the tables.

For the implemented programs:

- State legislatures did not play a major role in the adoption of the implemented programs.
- With one exception (Massachusetts), the utility commissioners were in favor of the lifeline proposals ultimately implemented.
- Eight of the ten implemented programs were opposed by representatives from the industrial/manufacturing sector.

- Seven of the ten implemented lifeline programs were opposed by representatives of commercial establishments.

- With one exception (Michigan), consumer groups, active in the consideration of lifeline proposals, were supportive of the proposed programs.

- Only three utilities were in favor of lifeline proposals ultimately implemented (Iowa-Illinois, Massachusetts A-65, and Narragansett SSI). The remaining utilites were actively opposed to lifeline proposals.

For the rejected programs:

- Rejected lifeline proposals were typically considered by state legislatures.

- Seven out of the ten rejected programs were opposed by the public utility commissions.

- All of the rejected programs were opposed by representatives from the industrial/manufacturing sector.

- Five of the ten rejected programs were opposed by representatives of commercial establishments.

- All of the rejected programs were supported by consumer groups.

- The utilities that would have been impacted by the rejected lifeline proposals unanimously opposed the lifeline concept.

As indicated in Section 4.1, lifeline proposals emanating from within the regulatory process had a better chance for implementation. Competing pressures from consumer groups, industrial/manufacturing representatives, or commercial interests, were also important, but distinctly secondary to input from the PUC's and the utility firms.

4.4 Conflict and Compromises

Both implemented and rejected programs were generally the subject of conflict. Conflict was most frequent in the following areas:

- Targeting
- Implementation Plan
- Lifeline Concept

Targeting proved to be an important point of conflict for both implemented and rejected programs. With the exception of the rejected New York Assembly Bill 12214, conflict generally arose from targeting benefits on the basis of income and age criteria. The level of conflict was apparently mitigated, however, by expanding eligibility and the size of the target population.

The second area of conflict involved the alteration of the initial lifeline proposals. Half of the implemented programs and half of the rejected programs were modified in this sense. Specifically these involved:

- Reducing the scale of the programs to a demonstration level to operate for a limited time, thereby enabling the PUC and utility companies to evaluate the programs' impact.
- Adopting other non-rate options to assist low-income residential customers in meeting rising energy costs.
- Implementing program evaluation activities to determine whether lifeline was meeting the needs of target populations.

Finally, in the majority of implemented and rejected cases the philosophical merits of the lifeline concept were important issues. Specifically, much of this conflict re-

volved around the proper revenue recovery method and the associated redistribution of income through regulated utility rates. With few exceptions, the utilities argued that such income redistribution is best accomplished outside the regulatory process. Conversely, consumer groups tended to advocate some measure of income redistribution via lifeline rates. In conclusion, industrial and commercial interests tended to oppose lifeline proposals on less philosophical grounds. Their opposition appeared to be based on fears that a trend toward, what they considered, discriminatory or lifeline rates, could lead to significantly increased future utility costs.

TABLE 4-1
HISTORICAL SUMMARY
(IMPLEMENTED PROGRAMS)

	IMPORTANT ACTORS					REASONS FOR INITIATION					PRIOR RATE STRUCTURE*		
	LEGISLATURE	PUC	UTILITY COMPANY	CONSUMER GROUPS	DATE PROPOSED	CONSUMER PRESSURE	CONSERVATION	GOVT. OR UTILITY CO. STUDY/ANALYSIS	IMPENDING PURPA ENACTMENT	DECLINING BLOCK RATES	INVERTED RATES	
BOSTON EDISON		o		●	1975	●		o		X		
CALIFORNIA	●				1974		●			X		
FLORIDA POWER & LIGHT	o	●			1977		●			X		
IOWA-ILLINOIS	o		●		1977		o	●		X		
MAINE DEMONSTRATION	●			o	1974	●				X		
MASSACHUSETTS A-65			●		1978			●		X		
MICHIGAN OPTIONAL		●			1978			●			X	
NARRAGANSETT A-65 SSI			●		1977	●				X		
NORTHERN STATE POWER		●			1974		●		o	X		
PEPCO (DISTRICT OF COLUMBIA)		●			1973	●		o		X		

● OF PRIMARY IMPORTANCE

o OF SECONDARY IMPORTANCE

* from individual utility rate schedule

TABLE 4-2
HISTORICAL SUMMARY
(NON-IMPLEMENTED PROGRAMS)

	IMPORTANT ACTORS					REASONS FOR INITIATION					PRIOR RATE STRUCTURE*	
	LEGISLATURE	PUC	UTILITY COMPANY	CONSUMER GROUPS	DATE PROPOSED	CONSUMER PRESSURE	CONSERVATION	GOVT. OR UTILITY CO. STUDY/ANALYSIS	IMPENDING PURPA ENACTMENT	DECLINING BLOCK RATES	INVERTED RATES	
DELAWARE SB 202	•		o		1977	•				X		
ILLINOIS HB 83	•			o	1977	•				X		
MAINE LD 1043	•			o	1979	•				X		
MINNESOTA HF 1243	•			o	1977	o		•		X		
NEW YORK AB 12214				•	1978	•		o		X		
NEW YORK SB 7013-A				•	1978	•		o		X		
RHODE ISLAND HB 5770-A				•	1979	•				X		
SOUTH DAKOTA ACORN				•	1978	•				X		
WEST VIRGINIA HB 943				•	1978	•				X		
WISCONSIN AB 1250				•	1977	•				X		

• OF PRIMARY IMPORTANCE
o OF SECONDARY IMPORTANCE

* from individual utility rate schedule

TABLE 4-3
THE POLICY STANCE OF MAJOR ACTORS
(IMPLEMENTED PROGRAMS)

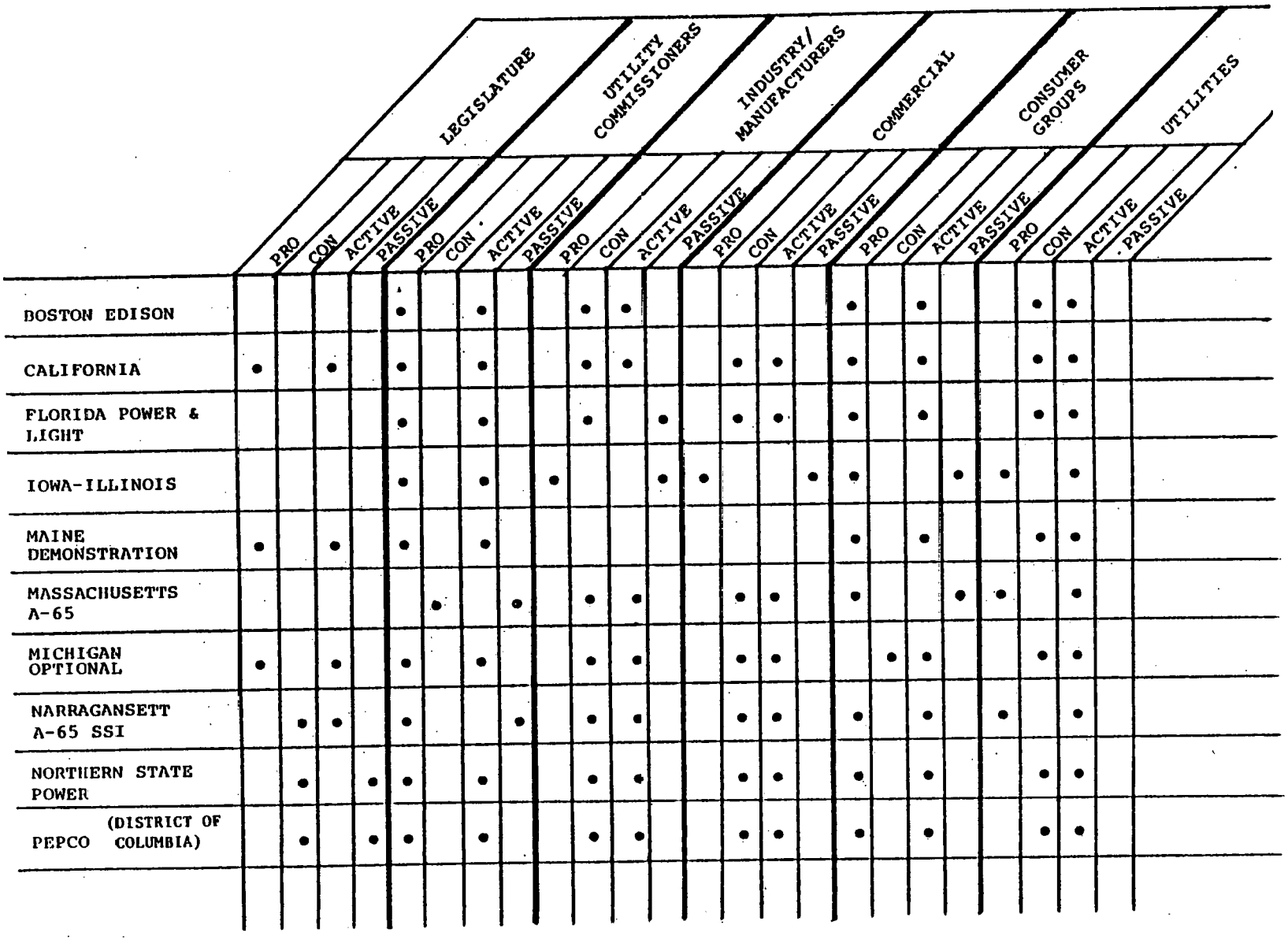


TABLE 4-4

THE POLICY STANCE OF MAJOR ACTORS
(NON-IMPLEMENTED PROGRAMS)

	LEGISLATURE				UTILITY COMMISSIONERS				INDUSTRY/ MANUFACTURERS				COMMERCIAL				CONSUMER GROUPS				UTILITIES			
	PRO	CON	ACTIVE	PASSIVE	PRO	CON	ACTIVE	PASSIVE	PRO	CON	ACTIVE	PASSIVE	PRO	CON	ACTIVE	PASSIVE	PRO	CON	ACTIVE	PASSIVE	PRO	CON	ACTIVE	PASSIVE
DELAWARE SB 202		•	•							•	•						•		•			•	•	
ILLINOIS HB 83		•	•			•		•		•	•			•	•		•		•			•	•	
MAINE LD 1043		•	•			•	•			•	•						•		•			•	•	
MINNESOTA HF 1243		•		•	•		•			•	•			•	•		•		•			•	•	
NEW YORK AB 12214		•		•		•		•		•	•						•		•			•	•	
NEW YORK SB 7013-A		•		•		•		•		•	•						•		•			•	•	
RHODE ISLAND HB 5770-A		•	•		•			•		•	•						•		•			•	•	
SOUTH DAKOTA ACORN		•	•			•		•		•	•			•	•		•		•			•	•	
WEST VIRGINIA HB 943		•	•			•	•			•	•			•	•		•		•			•	•	
WISCONSIN AB 1250	•		•			•	•			•	•			•	•		•		•			•	•	

Section 5

IMPACT ASSESSMENT

The case studies focused on the observed or anticipated impact of lifeline rates on

1. conservation of energy
2. optimally efficient use of facilities
3. equitable rates for electric consumers.

5.1 Conservation

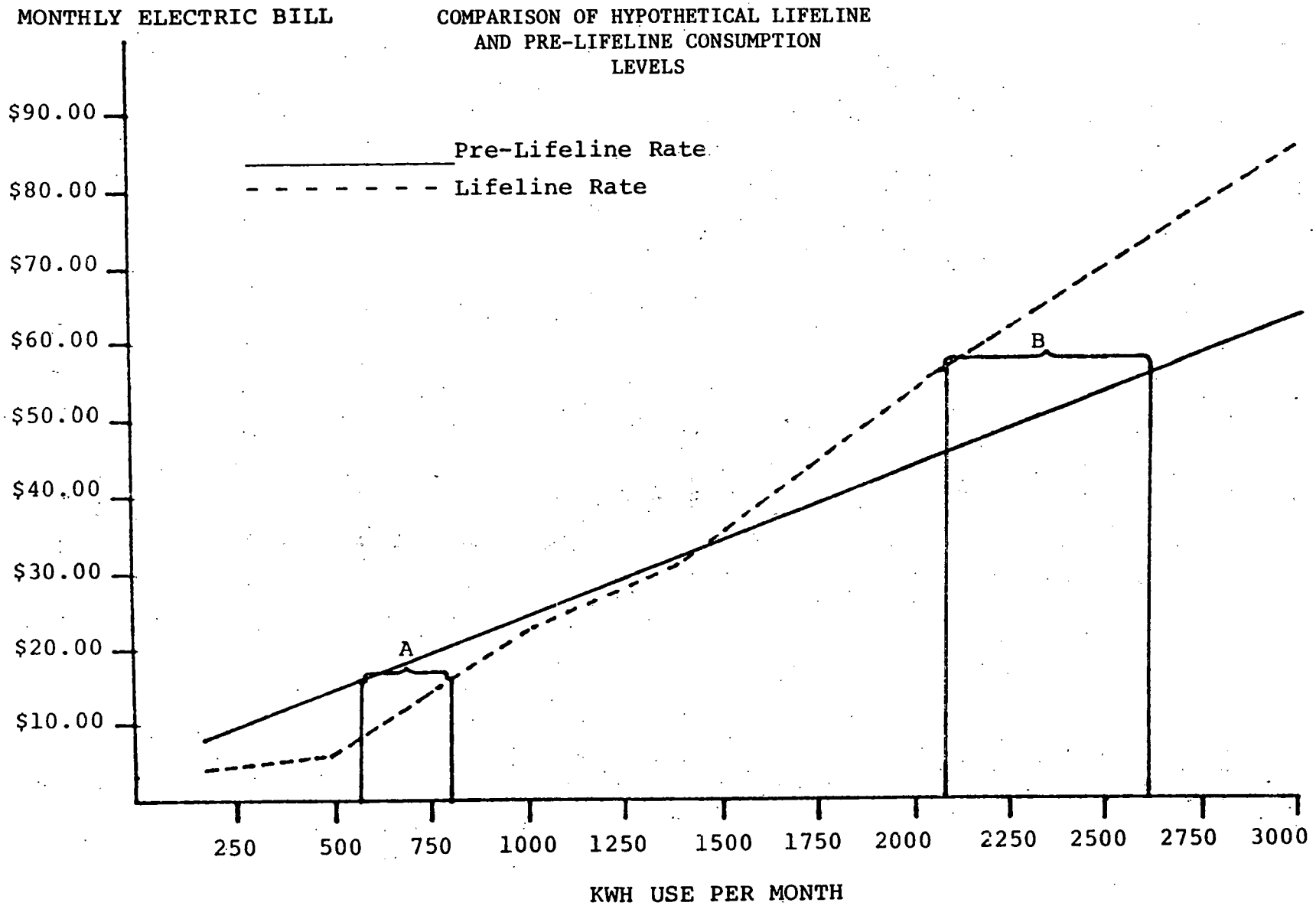
Conservation of energy is a major national goal. Consequently, if lifeline rates are to be effective regulatory tools, they should contribute to, or at least not detract from, the attainment of this important objective. Conclusive evidence on this issue is not yet available, however, and the principal actors in lifeline deliberations have generally remained divided on lifeline's conservation potential.

Proponents have argued that lifeline will effectively promote conservation through differential price signals. Specifically, they envisioned that consumers would limit their electricity usage to within the lifeline block and thus avoid the high kwh charge in subsequent blocks. Additionally, proponents also tend to assume that low-income users of electricity should be able to meet their essential utility needs within this block. Consequently, those who advocate lifeline tend to claim that this rate initiative will effectively promote conservation, as well as assist low-income households in dealing with escalating electricity bills.

In contrast, lifeline opponents do not accept the contention that low-income households typically use less energy and could meet their essential utility needs within the first block. In addition, opponents contend that lifeline rates would result in higher energy consumption levels. Under this scenario, consumers would increase their use of electricity until their electric bills under lifeline equal their electric bills prior to lifeline. Figure 5-1 illustrates this argument by reference to a hypothetical lifeline rate structure. A consumer with a monthly bill of $15.00 under the old rate schedule used approximately 500 kwh. Under lifeline it is assumed that this same consumer would increase consumption to 800 kwh per month and incur the same monthly charge of $15.00. Beyond the breakeven point of 1410 kwh, the opposite tendency is expected to predominate and high users would reduce consumption to limit their monthly electric bills to the original amount.

To address this important issue empirically, substantial efforts were expended during the conduct of the 20 case studies to locate relevant energy consumption data.

Figure 5-1


MONTHLY ELECTRIC BILL
COMPARISON OF HYPOTHETICAL LIFELINE AND PRE-LIFELINE CONSUMPTION LEVELS
Pre-Lifeline Rate
Lifeline Rate
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
A
B
250
500
750
1000
1250
1500
1750
2000
2250
2500
2750
3000
KWH USE PER MONTH

This activity was hampered however by:

- o the general absence of quantified consumption data for various income groups under several different rates
- o the absence of consumption data for non-implemented programs
- o the presence of other factors (in addition to the introduction of lifeline) that might have affected consumption patterns.

Nevertheless, limited indications that lifeline rates can promote or at least be compatible with the conservation criterion were documented in three states.

> For the Michigan Senior Citizen Optional Rate and the PEPCO Rate, residential demand stabilized after the introduction of lifeline. This trend was also observed during the 1975-76 Maine Demonstration Program.

5.2 Efficiency

The second general criterion, used in the case studies, relates to the extent that lifeline rates either promote utility company operating efficiency or not significantly undermine efficiency.

In theoretical terms, high levels of operating efficiency or the optimal use of facilities and resources is obtained through the application of marginal cost pricing methods.[1] However, numerous practical difficulties are typically encountered when one attempts to apply these principles to rate design. As a result, the concept of efficiency is generally dealt with in less theoretical terms

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[1]Pricing method that reflects the differential production and distribution costs associated with each additional unit of utility service.

and is equated with such cost containment strategies as the reduction or stabilization of peak demand and the containment of administrative expenses.

For each of the implemented and rejected lifeline proposals, attempts were made to identify the actual or anticipated impact on levels of operating efficiency, conceptualized in the above sense. Only limited information was available, however, and these pointed to the following general trends:

- Marginal cost pricing was introduced, as a theoretical issue, during the discussion of the majority of lifeline programs.
- Utility companies, however, were reluctant to move toward the implementation of marginal cost principles. Their reluctance was due, in part, to the large scale and expensive changes in accounting procedures that marginal cost pricing would entail.
- There seemed to be broad agreement that lifeline rates, given their present form and participation levels, did not noticeably alter peaking characteristics. This seemed to be a particularly accepted premise for targeted rates where eligible populations accounted for only a negligible portion of total system demand.
- Information about the additional administrative costs of lifeline pointed to these being negligible amounts in relation to overall operating expenditures.

In summary, the limited information available suggested that lifeline did not have a noticeably negative impact on the operating efficiency of the utility companies.

5.3 Equity

The issue of equity or fairness is related to individual values. Consequently, the impact of lifeline rates on the equity dimension cannot be unambiguously assessed.

Economists who oppose the use of price discrimination in public utility ratemaking would advocate that the price to marginal cost ratios be constant for all classes of service.[2] Nevertheless, several more subjective definitions of equity have also generally been applied to the issue of fair apportionment of costs in utility rate regulation.

The first of these criteria, the good faith criterion, refers to expectations that rates not undergo abrupt and large increases, since such changes would violate the promise of stable or declining rates, implicit in the past promotional practices of utility companies. This criterion is particularly appropriate to high volume customers who established their consumption patterns under pre-lifeline rates and who would be penalized by the imposition of a significant rate surcharge. Supporting the cost of lifeline rates from sources exogeneous to the customer base of the utility company (for example, from the general revenue funds) would not violate this criterion, however.

In relation to the good faith criterion, the case studies point to the following trends:

- In a strictly theoretical sense, a lifeline program which recovers revenues from non-participating ratepayers violates the good-faith criterion. However, recognizing the relatively small amounts added to non-lifeline blocks, the impact of lifeline on this criterion appears to be insignificant, in most cases.
- In two states (California and Delaware) the good-faith criterion appears to have been significantly violated as the programs required or would have required industrial and commercial users to bear large rate increases to support lifeline.

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[2]As noted in Alfred Kahn's The Economics of Regulation: Principles and Institutions, Vol. I, p. 145, 1970.

- For rejected programs, where revenues were to be recovered through general fund appropriations, the good-faith criterion would have been strictly adhered to.

The second or notional equality criterion of equity encompasses the assertion that all units of the same utility service ought to be priced uniformly. In a general sense, lifeline programs that provide rate breaks for purposes of assisting low-income households or promoting conservation will violate this criterion. In specific cases, however, lifeline measures have conformed to the criterion of notional equality. This occurred when price levels between rate blocks were reduced (Maine Demonstration and Detroit Edison programs) or when rates were flattened (Iowa-Illinois).

The third, or the ability to pay criterion of equity, is of central importance when lifeline is primarily intended to be an income redistributive assistance program to benefit low-income households. According to this criterion, rate design should deviate from purely cost based considerations in order to minimize burdens falling on low-income customers. In this regard, results from the case studies are consistent with the following general assertions:

- While targeted lifeline programs address the "ability to pay" criterion more or less adequately (depending on the amount of rate reduction), universal lifeline programs are inconsistent with the criterion since households of all income categories are eligible for the rate break.

- For the targeted programs, the requisite eligibility limitations provide a special problem, as they cause low-income households with incomes barely in excess of the eligibility limits, to be disqualified from access to lower rates.

- Since the majority of the lifeline programs, analyzed via the case studies are universal programs, the "ability to pay" criterion of fairness does not appear to represent the primary and driving motive behind these lifeline initiatives.

In summary, the various competing notions of equity or fairness cannot be fully satisfied in a simultaneous fashion. As a result, the preferable approach for sound rate policy is by way of a compromise that minimizes conflict among these competing values. The national experience with lifeline programs, as reported in the attached case studies, generally appears to represent an acceptable compromise in this sense.

5.4 Conclusion

By way of an overall summary, the lifeline case studies do not point to noticeably negative impacts on energy conservation and the efficient use of facilities. In addition, in their present forms, lifeline rates generally appear to represent a reasonable compromise among the various competing criteria of equity. In this fashion, lifeline programs seem to address the issues of conservation, efficiency, and equity, in a positive but limited sense. Consequently, the findings cannot be used to support the vigorous advocacy of expanded application of lifeline rates. Rather the case studies point to the following recommendations:

- Additional primary research on electric consumption patterns by income class for those states with particularly interesting implemented lifeline programs.

- Evaluation of lifeline in the context of alternate and potentially more effective non-rate policies for delivering energy assistance to low-income households.

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