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Final Report
December 1987

A Compendium of Utility-Sponsored Energy Efficiency Rebate Programs

Prepared by
Consumer Energy Council of America Research Foundation
Washington, D.C.
and
American Council for an Energy-Efficient Economy
Washington, D.C.

REPORT SUMMARY

SUBJECTS: Demand-side planning and information / Load management

TOPICS:
- Demand-side management
- Demand-side planning
- Marketing
- End use
- Energy efficiency
- Surveys

AUDIENCE: Corporate planning and marketing managers

A Compendium of Utility-Sponsored Energy Efficiency Rebate Programs

Do utility rebate programs—an increasingly popular means of promoting energy efficiency—help modify peak demand? This survey provides comprehensive information on the characteristics of and savings produced by such programs at 59 utilities.

BACKGROUND

Promotion of energy-efficient end uses in the residential, commercial, and industrial sectors can help match energy supply to demand while deferring construction of new generating facilities. Rebate programs are a widely used low-cost option encouraging customers to purchase energy-efficient appliances, space-conditioning systems, lighting products, and motors. The present work assesses rebate program prevalence and cost-effectiveness.

OBJECTIVES

- To gauge the scope and impact of utility-sponsored energy efficiency rebate programs.
- To facilitate the design and operation of these programs.

APPROACH

Investigators sent an eight-page questionnaire to 157 utilities. Of the 133 respondents, 59 had one or more such programs. Cross-tabulation and analysis of the responses identified as significant such variables as program characteristics, targeted end uses, efficiency levels, rebate amount, program funding levels, and energy and peak power savings.

RESULTS

This compendium contains information on 59 energy efficiency rebate programs. These programs most frequently target residential heat pumps, domestic water heaters, and central air conditioners. In the commercial and industrial sectors, utilities focus on lighting products; heating, ventilating, and air conditioning equipment; and motors.

Reported costs and load impacts suggest that rebate programs have produced an average 0.3% reduction in peak demand at an average cost of $300/kW, with a range from $80/kW to $1300/kW. Programs promoting lighting systems show the lowest cost-per-kilowatt savings, while programs targeting residential refrigerators, freezers, and water heaters report the highest cost-per-kilowatt saved.

EPRI PERSPECTIVE

Other EPRI and utility projects indicate that alternatives to straight rebates may be more-reliable, lower-cost means of producing energy-efficient purchasing decisions. The EPRI customer preference and behavior project, RP2671, should provide more information on these findings.

PROJECT

RP2884-9
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Energy Management and Utilization Division
Contractors: Consumer Energy Council of America Research Foundation; American Council for an Energy-Efficient Economy

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EM-5579
Research Project 2884-9

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ABSTRACT

Rebate programs are becoming increasingly popular among utilities across the country as a method to persuade customers to purchase more energy efficient appliances, space conditioning systems, lighting products and motors. While there is substantial experience with and interest in utility rebate programs, utilities and other organizations lack comprehensive information on other utility-sponsored energy efficient rebate programs. The authors developed this Compendium to fill that gap.

This Compendium contains information on 59 energy efficiency rebate programs, based upon a survey of 157 utilities. The information on each rebate program has been cross-tabulated and analyzed to identify such variables as program characteristics, products included, efficiency levels, rebate amounts, funding levels, energy and peak power savings, and the cost of peak demand reduction. Summary conclusions about these variables are also presented.

EPRI FOREWORD

This compendium of utility-sponsored energy efficiency rebate programs provides a valuable compilation of the prevalence, characteristics, costs, and impacts of such programs as reported by the responding utilities. Readers should understand that certain calculations in this report, such as cost per kilowatt of demand reduction, rely on program costs as reported; no delineation of cost elements was requested in the survey instrument. Also, all peak-demand reductions that appear were attributed to summertime reductions; therefore some caution must be exercised by winter-peaking utilities in applying these results and in the case of certain end-use technologies (for example, heat pumps).

The compendium reports on regional variations in certain aspects of particular programs; this study used the DOE regions (as defined in the Residential Energy Consumption Survey, published by the Energy Information Administration, September 1982) in performing the regional analyses. With these qualifications in mind, demand-side planners can apply the results of this research effort to a wide variety of efforts, from load forecasting to demand-side management program design and marketing.

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Ellen Berman
Project Director

July 1987

CONTENTS

TABLES

EXECUTIVE SUMMARY

INTRODUCTION

Rebate programs are becoming increasingly popular among utilities across the country as a method to persuade customers to purchase more energy efficient appliances, space conditioning systems, lighting products, motors and other conservation measures. While there is substantial experience with and interest in utility rebate programs, utilities and other organizations lack comprehensive information on rebate programs offered by other utilities across the country. The authors undertook this survey to fill this gap. Detailed information on 59 energy efficiency rebate programs was collected. Both ongoing and recently completed rebate programs are included. All programs have minimum efficiency requirements and/or feature inherently efficient products. Rebate programs strictly for load management equipment are excluded. Table ES-1 presents the 59 utilities which had an efficiency based rebate program for at least one appliance.

UTILITIES RESPONDING TO THE SURVEY

The 132 utilities which responded to the questionnaire serve approximately 57 percent of the total electric utility customers in the nation. Questionnaires were returned by utilities serving 77.5 percent of all customers of investor-owned utilities and by utilities serving 17.8 percent of all customers of non-investor-owned utilities.

The respondents were generally representative of the geographic areas of the country. Only one census region -- the East South Central region -- was under-represented. A safe generalization would be that 35 to 50 percent of the nation's electric utility consumers are served by utilities that have some form of an energy efficiency rebate program.

Table ES-1

UTILITIES RESPONDING TO SURVEY WITH EFFICIENCY-BASED REBATE PROGRAMS AND PRODUCTS COVERED (1)

UTILITY	RESIDENTIAL PRODUCTS (2)									C & I PRODUCTS (2)					
	Refgr	Frzr	RAC	CAC	HP	Furn	DWH	Lght	Oth	HVAC	Lght	Motor	EMS	Refgr	Oth
Arizona Public Service Co.			X	X	X				X						
Atlantic City Electric Co.			X	X	X										
Austin Resource Management Dept.			X	X	X		X		X	X	X	X			X
Bonneville Power Administration					X		X								
Central Hudson Gas and Electric Corp.	X		X					X	X						
Central Maine Power Company	X	X	X				X				X	X			
Central Power and Light Co.					X										
City Water, Light and Power			X	X	X					X					
City Public Service of San Antonio			X	X	X										
Commonwealth Electric Company (3)															
Connecticut Light and Power	X										X				
Consolidated Edison Co. of New York	X		X	X				X		X					
Delmarva Power						X									
Florida Power & Light Co.	X	X	X	X	X		X				X				X
Gainesville Regional Utilities	X				X										
Georgia Power Company					X										
Gulf Power Co.				X	X		X								
Gulf States Utilities					X										X
Idaho Power Co.							X								
Iowa Power and Light Co.					X				X						
Iowa Southern Utilities							X								
Jersey Central Power and Light Co.			X	X	X		X			X	X		X		
Lincoln Electric System					X	X	X								
Madison Gas and Electric Co.						X	X		X						
Metropolitan Edison Co.											X	X	X		
Midwest Electric Cooperative, Inc.					X										
Nevada Power Co.					X						X				
New England Electric	X										X				
New York State Electric & Gas Corp.	X		X	X											
Niagara Mohawk Power Corp.	X	X	X				X					X			
Northern Indiana Public Service Co.								X							

(cont.)

Table ES-1 (CONTINUED)

UTILITY	RESIDENTIAL APPLIANCES (2)									COMMERCIAL APPLIANCES (2)					
	Refgr	Frzr	RAC	CAC	HP	Furn	DWH	Lght	Oth	HVAC	Lght	Motor	EMS	Refgr	Oth
Northern States Power Co.	X	X	X	X	X		X			X	X	X			
Oklahoma Gas and Electric Co.			X	X	X		X		X						
Orange and Rockland Utilities, Inc.			X	X	X			X							
Otter Tail Power Co.	X		X	X	X				X						
Pacific Gas and Electric Co.	X								X	X	X	X	X	X	
Pacific Power and Light Co.							X								X
Pennsylvania Electric Co.											X				
Pennsylvania Power and Light Co.							X		X						
Portland General Electric Co.					X		X								
Potomac Electric Power Co.				X	X										
Potomac Edison Co.									X						
Public Service Co. of Oklahoma				X	X										
Public Service Electric & Gas			X	X	X	X	X		X						
Sacramento Municipal Utility Dist.				X	X						X				
Salt River Project				X	X	X				X					
Seattle City Light							X								
Sierra Pacific Power Co.	X	X					X								
Snohomish County Public Utility Dist.										X	X				X
Southern California Edison Co.	X		X	X	X		X		X	X	X	X			X
Tampa Electric Co.					X										
Tennessee Valley Authority			X	X	X										
Texas Utilities Electric Co.			X	X	X		X			X	X				X
United Illuminating Co.			X								X				
Verdigris Valley Electric Coop.					X		X								
West Texas Utilities Co.			X	X	X		X			X					X
Wisconsin Electric Power Co.					X		X								
Wisconsin Power and Light Co.	X						X								
Wisconsin Public Service Corp.						X	X			X					X

(1) Note that data reflected in the analysis may not conform precisely to information in the summary table because of (1) coding choices about predominant program characteristics; (2) rounding of values; and (3) crosstabulations of characteristics in which missing values may change totals and subtotals.

(2) Product codes: REFGR - refrigerator; Frzr - freezers; RAC - room air conditioners; CAC - central air conditioners; HP - heat pumps; Furn - furnaces; DWH - domestic water heaters; Lght - lighting; HVAC - heating, ventilating and air conditioning systems; EMS - energy management systems; Oth - other residential or other commercial products.

(3) Commonwealth Electric Co. specified any conservation measures recommended by a RCS audit.

Table ES-2

BASIC CHARACTERISTICS OF SURVEY RESPONDENTS AND PROGRAMS

Characteristic	Number of Utilities
Response	
With Rebates	59
Without Rebates	73
Scale of Program (1)	
Full	40
Pilot	19
Area (Scope) (1)	
Limited	15
All Service Territory	42
Type of Program (1)	
Residential Only	35
Residential and C & I	20
Commercial Only	4
Recipient of Rebate (1)	
Purchaser	43
Dealer	3
Purchaser and Dealer	11
Fuel Types (1)	
Electrical Products	56
Gas Products	6

(1) Totals may not add to 59 utilities due to lack of responses or multiple responses from some utilities. See also notes on pages ES-3, 1-7 and 1-9.

PROGRAM TYPES

As Table ES-2 illustrates, residential rebate programs predominate. Ninety three percent of the utilities with energy efficiency rebate programs include residential appliances or space conditioning equipment. Of these 55 utilities, 35 have rebate programs for residential consumers only, while 20 have programs for both residential and commercial-industrial (C & I) customers. In contrast, only four of the utilities have rebate progams for commercial-industrial customers only.

The programs are overwhelmingly oriented toward purchaser rebates. Rebates in 43 of the 59 programs are offered to purchasers only. A total of 54 of the programs provide purchaser rebates, while 14 provide dealer rebates.

EVOLUTION OF PROGRAMS

Most rebate programs are of recent origin. The most frequent year given for the start of a program was 1986 for both residential and C & I programs. While there were nearly as many pilot programs started in 1985 as 1986, more full-scale programs were started in 1986. The residential programs tended to be initiated somewhat earlier than the C & I programs.

There is a clear tendency for programs which are currently larger in their coverage to have been initiated earlier. In the same manner, pilot programs tend to be much more recent in origin. Seventy-seven percent of the residential pilot programs were initiated in 1985 or later whereas only 36 percent of the full scale programs were.

PROGRAM PARTICIPATION

Participation in program design and implementation by organizations other than the utility is limited. Approximately 49 percent of responding utilities state that no organization outside the utility is involved in program design. Regarding other organizations, government agencies, equipment manufacturers and dealers are most likely to participate.

PROGRAM START-UP

The vast majority of programs (93 percent) were proposed by the utility, while public utility commissions (PUC's) were involved in proposing 14 percent of the programs. In the Mid-Atlantic, Mountain and Pacific states, PUCs were more likely to have proposed programs. They were less likely to have done so in the South Central States.

PRODUCTS INCLUDED

Overall, residential rebate programs include an average of 2.5 products. Full-scale programs and full territory programs tend to cover only slightly more appliances than pilot and limited area programs. Thus, program expansion generally appears to be in the size of the area covered and in the budget, but not necessarily in the number of products. However, at least 20 utilities have added products or expanded the target audience since their programs were first begun, with expansion from residential into the C & I sectors particularly evident.

Six of the responding utilities offer rebates on some type of gas-fueled product, mostly for efficient furnaces and boilers. All of the utilities offering rebates on gas products are combined gas and electric companies; three of the six also offer rebates to those purchasing efficient electrical products.

The most frequently included product is the residential heat pump, with 59 percent of the programs providing rebates (see Table ES-3). All of these programs include some minimum efficiency requirement for the heat pump. Domestic water heaters and central air conditioners (CACs) are the next most frequently included products. Among the C & I programs, lighting products are included by over 60 percent of the utilities. This is followed by HVAC equipment and motors.

New England utilities are less likely than utilities overall to include central air conditioners and heat pumps, but more likely to include residential refrigerators and freezers and commercial and industrial lighting products. Utilities in the Mid-Atlantic region are more likely to include room air conditioners and energy management systems (EMS), but less likely to include heat pumps. Central air conditioners and heat pumps are more likely to be included in the South Central Region, but refrigerators are less likely to be included in this region.

MINIMUM EFFICIENCY REQUIREMENTS

All rebate programs now require at least an 8.0 seasonal energy efficiency ratio (SEER) for central air conditioners. The most frequently required minimum SEER and the median for CACs is 9.3. The median minimum energy efficiency ratio (EER) value for room air conditioners is 8.7, but the most frequent value and the highest qualifying value is a 9.0 EER. For heat pumps, the median minimum SEER value is

Table ES-3

PRODUCTS INCLUDED BY UTILITY CHARACTERISTICS
(Percentage of All Programs Including Specific Products)

	Total Sample	Ownership		Region							
		IOU	NonIOU	N.E.	MIDAT	SAT	SCENT	ENC	WNC	MTN	PAC
n=	59	46	13	5	11	8	9	7	5	6	8
Residential											
Refrigerator	27	30	15	60	36	25	0	14	40	33	25
Freezer	9	11	1	20	9	13	0	0	20	17	0
Room AC	36	39	23	40	73	13	56	14	40	16	13
Central AC	39	35	54	0	55	38	78	14	40	33	25
Heat Pump	59	54	77	20	36	63	100	43	80	83	50
Furnace	14	11	23	0	9	13	11	43	20	17	0
Water Heater	39	44	23	20	36	25	44	57	60	33	38
Lighting	5	7	0	0	18	0	14	0	0	0	0
Other	17	17	15	20	27	13	22	0	0	0	38
C & I											
HVAC	19	15	31	0	18	0	22	29	20	17	38
Lighting	25	28	15	60	36	13	22	0	20	17	38
Motor	14	15	8	20	27	0	11	0	20	0	25
EMS (1)	5	6	0	0	18	0	0	0	0	0	53
Refrigerator	2	2	0	0	0	0	0	0	0	0	13
Other	14	15	8	0	9	13	22	14	0	0	38

(1) Energy management system.

8.5, and the most frequent value is 9.0. The highest value is 10.0. (Note that both SEERs and EERs for central and room air conditioners and for heat pumps are expressed in terms of BTU per hour of cooling output per watt of power input.)

REBATE AMOUNTS

About half the programs use equipment size to set rebate amount and half use efficiencies to set rebate amounts. However, one third of the utilities use neither efficiency nor size, and 45 percent use both. Whether or not the rebate amount varies with size and efficiency depends in part on the particular product.

Among the most important factors used in setting rebate amounts, the avoided capacity cost is cited most frequently. Approximately 54 percent of the utilities said this was the first or second most important factor. Offering an amount considered sufficient to affect purchase decisions was given by 46 percent of the utilities as the first or second most important factor used in setting rebate amounts. Extra first cost and avoided energy costs were the next most frequently cited factors. Just over two-thirds of the respondents claim that their rebate program does not penalize non-participants (i.e., it satisfies the "no losers" test).

Rebate amounts vary widely both in the amount offered and in the basis for determining the rebate amount (see Table ES-4). For heat pumps, the most popular appliance, the most frequently offered rebate is a fixed amount per heat pump. In some cases, different rebates are paid for different categories of equipment (e.g., the rebate amount increases with efficiency) or different categories of purchaser. Minimum rebates per heat pump vary from $50 to $421, with a median value of $110. The maximum amounts vary from $50 to $915, with a median value of $300.

Central air conditioners exhibit patterns of rebate amounts that are similar to those for heat pumps. The absolute rebate amounts for room air conditioners are smaller than the rebates for central air conditioners or heat pumps, consistent with the lower capacity, lower cost and lower energy consumption of room air conditioners.

As Table ES-4 illustrates, other residential rebates (i.e., for refrigerators and conventional domestic water heaters) are almost exclusively paid on a per appliance basis. A significant number of utilities offer rebates on unconventional water

Table ES-4

REBATE AMOUNTS AND UNITS OF MEASURE
(In Dollars)

Appliance/ Unit of Measure	Number of Utilities	Minimum $			Maximum $		
		Low	High	Median	Low	High	Median
Heat Pump							
$ Per Appliance	20	50	421	110	50	915	300
$ Per Ton	11	12	110	50	12	210	95
Central Air Conditioner							
$ Per Appliance	13	30	421	63	100	915	328
$ Per Ton	8	12	72	48	12	245	80
Room Air Conditioner							
$ Per Appliance	10	3	50	25	3	150	50
$ Per Ton	10	12	95	36	12	185	72
Refrigerators							
$ Per Appliance	14	3	100	30	3	125	50
Domestic Water Heater							
$ Per Appliance	15	5	100	25	35	186	100
Solar Water Heater							
$ Per Appliance	7	50	500	150	50	500	300
Heat Pump Water Heater							
$ Per Appliance	8	50	250	100	50	300	200
Heat Recovery Water Heater							
$ Per Appliance	3	100	177	100	50	177	100
Freezer							
$ Per Appliance	3	3	10	10	3	100	10
Fluorescent Tubes							
$ Per Tube	9	0.25	1.25	0.60	0.50	2.50	1.50
Fluorescent Ballast							
$ Per Ballast	6	0.60	4.00	2.50	1.50	12.00	4.00
Motors							
$ Per Horse Power	6	2.00	25.00	5.00	2.00	25.00	7.00

heaters -- solar, heat pump, and/or heat recovery type water heaters. These offers are concentrated in the South and the Pacific regions.

C & I programs are somewhat more complex in how their rebate amounts are structured. Several programs provide flexible rebate amounts in the range of 30 to 50 percent of the installed cost of the conservation measures. In some cases, rebates are based on paying $100 to $200 per peak KW saved.

Other C & I programs specify rebate per product or per ton for air conditioning equipment. Energy efficient fluorescent tubes are given rebates in the range of $0.25 to $2.50. Ballasts are given rebates in the range of $0.60 to $12. A small number of programs provide specified rebates for screw-in fluorescent lamps (in the $4 to $5 range), metal halide lamps (in the $25 to $75 range) and optical reflectors. Energy efficient motors are generally awarded rebates based on capacity in the range of $2 to $25 per heat pump.

PROGRAM OBJECTIVES

The most frequently stated purpose of the program is to promote energy efficiency, with 80 percent naming it as the top purpose (see Table ES-5). Approximately two-thirds of the respondents state that peak load reduction is a purpose of the program. Improving community relations, establishing a market for efficient appliances, leveling load and responding to public utility commission requirements were given as purposes by a significant minority (27 to 41) percent of the respondents.

PROGRAM EVALUATION

The two predominant methods of evaluating the program are quantitative evaluation of cost effectiveness (66 percent) and quantitative evaluation of energy savings (70 percent). Moreover, 62 percent of the respondents claim they use at least one of these methods (64 percent use both). Thus, the main methods of program evaluation are consistent with the primary objectives given by the utilities. A significant minority of utilities use surveys of participants and dealers for program evaluation. Seventy percent of the respondents not evaluating savings or cost-effectiveness use such surveys.

Only 32 percent of the utilities could estimate the percentage of appliances sold locally that could qualify for rebates. Many of these utilities base their

Table ES-5

PROGRAM OBJECTIVES AND EVALUATION METHODS

Program Objectives	Percent Responding Yes
Reduce Peak Load	66
Reduce Base Load	15
Level Load	31
Increase Market Share	32
Promote Energy Efficiency	80
Improve Community Relations	41
Further Local Economic Development	2
Satisfy Regulatory Commission	27
Determine Program Feasibility	36
Evaluation Methods	
Questions on Application Form	20
Survey of Participants	48
Survey of All Customers	19
Survey of Dealers	41
Quantitative Evaluation of Energy Savings	66
Quantitative Evaluation of Cost-Effectiveness	70
Other	7

estimates on surveys of local dealers and contractors. Likewise, only 32 percent of the utilities were able to estimate the additional number of purchases of energy efficient models as a result of their program. Many of these utilities simply estimate the average energy savings due to the rebates or the number of efficient models that would be purchased if the incentive was not available. Only a few utilities state that they are conducting experiments to determine the incremental number of purchases of more efficient products, actual energy savings, and the cost per unit of energy and peak demand savings. Therefore, the majority of utilities may not be estimating the savings, cost effectiveness and other quantitative impacts of their rebate programs with great precision.

QUALITATIVE RESULTS

In general, respondents are satisfied with their programs. Almost 60 percent of the respondents reported no problems with their rebate program. About two-thirds of the respondents who could answer said that they had met their energy savings target for residential sector programs. Only about half said that they had met their energy savings target for C & I sector programs. This may reflect in part the more recent initiation of many C & I programs.

Positive aspects or results indicated by most utilities include improved public relations, helping consumers make energy-conscious decisions, stimulating the market for efficient products and improved customer satisfaction. Nearly half of the utilities also indicated that their program is easy to implement.

The most frequently cited problem, overall, was the cumbersomeness of the application process. This was followed by the rebate amount being too low and there being too few qualifying models. However, each of the problem areas was mentioned by a small percentage (less than 15 percent) of all respondents to the survey.

Reflecting these problems to some degree, the most frequently stated plans for change in the rebate programs were to improve dealer cooperation. This could help in making more qualifying models available and increasing program participation. The overwhelming majority of programs will continue to cover the appliances now included in the program. The appliances most likely to be dropped are residential freezers (60 percent of the programs) and residential refrigerators (almost a third of the programs).

There is also a strong inclination to raise efficiency levels, particularly for residential cooling products. Between a third and a half of the room air conditioner, central air conditioner and heat pump programs plan to raise their minimum efficiency levels. About a fifth of the respondents plan to raise minimum efficiency levels for other residential appliances.

FUNDING SOURCES AND LEVELS

The funding source for the rebate programs is about evenly split between "included in the rate base" and "operating expense." Utilities that include their rebate programs in the rate base are able to earn a profit on this expenditure just as they do with their supply-side programs. The average annual budget for the 59 rebate progams is $3 million. However, the median budget is much lower, only $800,000. This is due to the large number of small programs and small number of very large programs. Those utilities which run combined residential and C & I programs have much larger average budgets -- over $6 million. Administrative costs (including promotion) account for over one quarter of the budget (27 percent on average).

ENERGY AND PEAK POWER SAVINGS

For 22 utilities who were able to provide this information, utilities with residential programs were reporting peak demand savings on the average of 9.7 MW per year (see Table ES-6). On average, the C & I programs reported reducing peak demand by 13.8 MW per year. Considering total programs, the average peak demand reduction reported is 21.0 MW per year. The medians are much smaller than the means, however, and are in the range of 5 to 7 MW per year. The utilities reporting peak demand savings generally have older programs where evaluations have been completed. Although time of peak was not specified, it is assumed that all or nearly all values are summer peak load reductions.

Analyses of electricity savings were less common than analyses of peak demand savings. The 11 residential programs reporting electricity savings averaged 17.8 million kWh per year, but the median savings was only 1.4 million kWh per year. The four utilities reporting annual electricity savings for their C & I programs reported an average savings of 165.5 million kWh per year.

The survey also indicated for some utilities the fraction of total peak demand and annual electricity sales being saved via the rebate program. The peak demand

Table ES-6

MAGNITUDE AND COST OF PEAK DEMAND REDUCTION

Annual Reduction in Peak Demand (MW/Year)	n	Low	High	Average	Median
Residential (1)	19	0.1	56.2	9.7	5.9
C & I (1)	10	0.8	52.1	13.8	4.6
Residential & C & I	2	5.4	140.0	72.7	N/A
All Programs	22	0.1	140.0	21.0	6.7
Cost Per Peak Demand Reduction (In Dollars/kW)					
Residential	21	90	1285	372	275
C & I	10	100	375	196	195
Residential & C & I	2	84	125	105	N/A
All Programs	33	84	1285	300	200

(1) Utilities with both residential and C & I programs are included separately if they reported separate information.

reduction ranged from 0.01 percent per year to 1.38 percent per year, with an average reduction of 0.34 percent per year. The electricity savings ranged from 0.02 percent per year to 0.85 percent per year, with an average value of 0.21 percent per year. The relative magnitude of the peak demand savings is greater than the annual electricity savings because of the emphasis on cooling technologies and peak demand reduction.

COST OF ENERGY SAVED

The cost per unit of peak demand reduction varies widely among utilities and products. For utilities as a whole, the lowest estimated value was $84 per kW and the highest value was $1,285 per kW. The overall average was $300 per kW saved and the median value was $200 per kW saved. Programs covering both the residential and C & I sectors (two programs) had the lowest average value -- $105 per kW saved. Rebate programs strictly dealing with the C & I sectors (ten programs) had an average cost of $196 per kW saved. Programs dealing only with residential products (21 programs) had the highest costs. In this case, the average value was $372 per kW saved and the median was $275 per kW saved. (Some utilities are represented more than once in this data if it was possible to make separate estimates for different sectors or products.)

Based on the limited data regarding cost of saved peak demand, it is possible to draw some general conclusions regarding specific product areas. First, C & I lighting rebate programs appear to be most cost effective from the perspective of cost per kW of peak demand savings. Second, rebate programs for residential air conditioners and heat pumps, as well as HVAC equipment for the C & I sectors, are the next most cost effective, with costs often below $300 per kW saved. Third, it appears that rebates for residential refrigerators, freezers and water heaters exhibit the highest cost per kW of peak demand reduction. This is logical since these products present a relatively steady load (i.e., they save energy more effectively than they save peak demand).

Section 1

BACKGROUND AND METHODOLOGY

INTRODUCTION

Rebate programs are becoming increasingly popular among utilities across the country as a method to persuade customers to purchase more energy efficient appliances, space conditioning systems, lighting products, motors and other conservation measures.

A review of rebate programs for residential appliances and space conditioning equipment completed in June, 1983 identified 21 utilities with such programs (1). A survey of over 300 utilities conducted in 1984 found 57 utilities with such programs: 41 investor-owned utilities, 9 municipal utilities and 7 rural electric cooperatives that offered rebates for the purchase of energy efficient air conditioners, heat pumps and other residential conservation technologies (2). The survey herein of 157 utilities considered most likely to have rebate programs found 59 utilities offering rebates on energy efficient equipment as of late 1986.

Utilities first began rebate incentive programs between 1979 and 1981 primarily to stimulate the purchase of more efficient air conditioners and heat pumps by residential customers. In recent years, rebate programs for commercial-industrial (C & I) customers have proliferated. Surveys by Energy User News identified only nine commercial-sector programs in 1983, but found 29 such programs in 1987 (3).

There are several reasons for the growing interest in rebate programs. First, as this survey shows, the programs offer utilities an opportunity to reduce peak load cost effectively and levelize overall demand. Second, promotion of energy efficient refrigerators, lighting products, motors and other products can reduce base load electricity demand and thereby avoid or postpone some of the high capital investment required for new base load generating capacity. Thus, rebates are an important tool for demand-side management on the part of utilities.

Third, rebates increase awareness of and reduce the initial cost for energy efficient appliances, space conditioning equipment and other conservation products. Even though energy efficient appliances and retrofit projects are often very cost-effective investments on their own, consumers sometimes pass up these opportunities because of lack of knowledge or the perceived high initial cost. Rebates and their associated advertising programs offer a way to overcome the information and first cost barriers and thereby accelerate the adoption of energy efficient equipment.

Results presented in this report show that rebates can benefit utilities, consumers and society as a whole. Utilities reduce energy demand at costs below that required to obtain new energy supplies. The incentive offered by rebates helps consumers overcome the first cost barrier to investments that are otherwise economically sound. Society benefits as the economy becomes more efficient and moves closer towards least-cost energy services.

While there is substantial experience with and interest in utility rebate programs, utilities and other organizations lack comprehensive information on rebate programs offered by utilities across the country. The Consumer Energy Council of America (CECA) Research Foundation and the American Council for an Energy-Efficient Economy (ACEEE) undertook this survey to fill this gap. Detailed information on 59 energy-efficiency rebate programs was collected and used to develop this Compendium. Both ongoing and recently completed rebate programs are included. All programs have minimum efficiency requirements and/or feature inherently efficient products. Rebate programs strictly for load management equipment, e.g., thermal storage systems, are excluded.

This Compendium of utility-sponsored rebate programs is intended to: 1) increase knowledge concerning utility rebate programs to facilitate improvements in their design and operation, and 2) encourage the development of additional energy efficiency rebate programs by utilities.

Appendix A of the Compendium contains profiles on the 59 utilities we have identified with energy efficiency rebate programs. Information on each program includes (where available):

- Name, address and phone number of utility;
- Key contact person;
- Equipment covered;

- Minimum energy efficiency requirement levels;
- Target market;
- Rebate levels;
- Program objectives;
- Program design;
- Peak demand and energy savings; and
- Cost and cost effectiveness of the program.

Analysis of the data as a whole is presented in Sections 2 to 5. Section 2 covers basic program characteristics; Section 3 covers products, efficiencies and rebate amounts; Section 4 covers program objectives; and Section 5 covers quantitative aspects of the rebate programs. Summary data as well as particular examples are presented. Section 6 discusses critical issues on rebate programs. A listing of all utilities contacted for the survey is included in Appendix B.

METHODOLOGY

CECA and ACEEE regularly receive requests for information about designing and implementing utility rebate programs. The lack of comprehensive information on these programs provided the impetus for this Compendium.

Development of the Compendium included the following steps:

- Literature search;
- Development of the survey list;
- Development of the questionnaire;
- Selection of energy efficiency rebate programs;
- Preparation of program summaries;
- Analysis of program data.

Details of each step are described below:

Literature Search

The project began with a search for available information on utility energy efficiency rebate programs. We found that most information on such programs was several years old and did not describe the most recent developments in program design, implementation and results in a comprehensive manner.

Development of Survey List

Starting with previously cited reviews and surveys, as well as lists of energy efficiency rebate programs developed by Lawrence Berkeley Laboratory (4), we

developed a list of utilities which were known to have ongoing or recently completed appliance rebate programs.

Additional utilities were selected for the survey from membership lists of the American Public Power Association and the Edison Electric Institute, utilities identified by the Association of Home Appliance Manufacturers, and from other sources suggesting a rebate program might be underway. Our objective was to collect information on as many utility energy efficiency rebate programs as possible. Thus, the sample was heavily weighted toward utilities believed to have rebate programs.

Development of the Questionnaire

An initial questionnaire was developed using a previous rebate program review developed by ACEEE and other information on rebate programs. This initial questionnaire was pre-tested in July, 1986 with 12 utilities having experience with rebate programs.

Following the pre-test results, the questionnaire was refined and mailed to a total of 157 utilities nationwide in August, 1986. A series of follow-up letters was sent to those utilities who had not responded by the initial deadline. These follow-up letters sought to ensure that the questionnaire reached the right person in each utility and to maximize the response rate. The survey instrument is provided in Appendix C.

Selection of Energy Efficiency Rebate Programs

Of the 157 utilities included in the survey, 132, or 84 percent, responded by January, 1987, the final cut-off date. Of these, 66 reported that they had never sponsored a rebate program. Sixty-six reported that they had a rebate program in process, or had completed a program within the last 18 months. Of the 66 utilities responding affirmatively, 59 described rebate programs which were designed to encourage the purchase of energy efficient equipment.

The remaining seven utilities with rebate programs were excluded from the Compendium primarily because they do not include energy efficiency as a condition in their program. Some utilities provide rebates on load management equipment or heat pumps without any minimum efficiency requirement. A few utilities are promoting fuel switching without concern for energy efficiency. In addition, two

municipal utilities in Tennessee reported on rebate programs designed and funded by the Tennessee Valley Authority (TVA). These programs are included in the Compendium as TVA programs. This Compendium contains information only on the 59 utilities offering rebates for efficient appliances and other equipment.

Preparation of Program Profiles

Based on the questionnaire results and follow-up inquiries with the utilities, a summary was prepared of each energy efficiency rebate program. The summary profiles were mailed to each utility for verification. The profiles were revised based upon any additional information provided by the utilities.

Analysis of Program Data

The summarized and verified information on each rebate program was then coded and computerized for cross-tabulations and analysis. The survey instrument generated approximately 180 variables on each program for analysis (see Appendix D). Summary tables were prepared using this computer-coded data.

All data points were tabulated to test for correlations between various types of information, such as the type of appliance and the rebate amount. The resulting cross-tabulations were summarized, and those considered most significant are discussed in the Compendium. Tables 1-1 and 1-2 present basic cross-tabulations of key program characteristics.

Table 1-1

UTILITIES RESPONDING TO SURVEY WITH EFFICIENCY-BASED REBATE PROGRAMS AND PRODUCTS COVERED (1)

UTILITY	RESIDENTIAL PRODUCTS (2)									C & I PRODUCTS (2)					
	Refgr	Frzr	RAC	CAC	HP	Furn	DWH	Lght	Oth	HVAC	Lght	Motor	EMS	Refgr	Oth
Arizona Public Service Co.			X	X	X				X						
Atlantic City Electric Co.			X	X	X										
Austin Resource Management Dept.			X	X	X		X		X	X	X	X			X
Bonneville Power Administration					X		X								
Central Hudson Gas and Electric Corp.	X		X					X	X						
Central Maine Power Company	X	X	X				X				X	X			
Central Power and Light Co.					X										
City Water, Light and Power			X	X	X					X					
City Public Service of San Antonio			X	X	X										
Commonwealth Electric Company (3)															
Connecticut Light and Power	X										X				
Consolidated Edison Co. of New York	X		X	X				X		X					
Delmarva Power						X									
Florida Power & Light Co.	X	X	X	X	X		X				X				X
Gainesville Regional Utilities	X				X										
Georgia Power Company					X										
Gulf Power Co.				X	X		X								
Gulf States Utilities					X										X
Idaho Power Co.							X								
Iowa Power and Light Co.					X				X						
Iowa Southern Utilities							X								
Jersey Central Power and Light Co.			X	X	X		X			X	X		X		
Lincoln Electric System					X	X	X								
Madison Gas and Electric Co.						X	X		X						
Metropolitan Edison Co.											X	X	X		
Midwest Electric Cooperative, Inc.					X										
Nevada Power Co.					X						X				
New England Electric	X										X				
New York State Electric & Gas Corp.	X		X	X											
Niagara Mohawk Power Corp.	X	X	X				X					X			
Northern Indiana Public Service Co.								X							

(cont.)

Table 1-1 (CONTINUED)

UTILITY	RESIDENTIAL APPLIANCES (2)									COMMERCIAL APPLIANCES (2)					
	Refgr	Frzr	RAC	CAC	HP	Furn	DWH	Lght	Oth	HVAC	Lght	Motor	EMS	Refgr	Oth
Northern States Power Co.	X	X	X	X	X		X			X	X	X			
Oklahoma Gas and Electric Co.			X	X	X		X		X						
Orange and Rockland Utilities, Inc.			X	X	X			X							
Otter Tail Power Co.	X		X	X	X				X						
Pacific Gas and Electric Co.	X								X	X	X	X	X	X	
Pacific Power and Light Co.							X								X
Pennsylvania Electric Co.											X				
Pennsylvania Power and Light Co.							X		X						
Portland General Electric Co.					X		X								
Potomac Electric Power Co.				X	X										
Potomac Edison Co.									X						
Public Service Co. of Oklahoma				X	X										
Public Service Electric & Gas			X	X	X	X	X		X						
Sacramento Municipal Utility Dist.				X	X						X				
Salt River Project				X	X	X				X					
Seattle City Light							X								
Sierra Pacific Power Co.	X	X					X								
Snohomish County Public Utility Dist.										X	X				X
Southern California Edison Co.	X		X	X	X		X		X	X	X	X			X
Tampa Electric Co.					X										
Tennessee Valley Authority			X	X	X										
Texas Utilities Electric Co.			X	X	X		X			X	X				X
United Illuminating Co.			X								X				
Verdigris Valley Electric Coop.					X		X								
West Texas Utilities Co.			X	X	X		X			X					X
Wisconsin Electric Power Co.					X		X								
Wisconsin Power and Light Co.	X						X								
Wisconsin Public Service Corp.						X	X			X					X

(1) Note that data reflected in the analysis may not conform precisely to information in the summary table because of (1) coding choices about predominant program characteristics; (2) rounding of values; and (3) crosstabulations of characteristics in which missing values may change totals and subtotals.

(2) Product codes: REFGR - refrigerator; Frzr - freezers; RAC - room air conditioners; CAC - central air conditioners; HP - heat pumps; Furn - furnaces; DWH - domestic water heaters; Lght - lighting; HVAC - heating, ventilating and air conditioning systems; EMS - energy management systems; Oth - other residential or other commercial products.

(3) Commonwealth Electric Co. specified any conservation measures recommended by a RCS audit.

Table 1-2

OPERATING CHARACTERISTICS OF REBATE PROGRAMS (1)

UTILITY	PROGRAM TYPE		PROGRAM SCALE		PROGRAM AREA		START DATE	
	Res. Only	Res./C&I or C&I Only	Pilot	Full	Limited	All Serv.	C&I	Res.
Arizona Public Service Co.	X			X		X	N/A	1985
Atlantic City Electric Co.	X			X		X	N/A	1983
Austin Resource Management Dept.		X		X		X	1984	1982
Bonneville Power Administration	X		X		X		N/A	1984
Central Hudson Gas and Electric Corp.	X		X		X		N/A	1986
Central Maine Power Co.		X	X			X	1986	1984
Central Power and Light Co.	X			X		X	N/A	1986
City Water, Light and Power		X		X		X	1982	1982
City Public Service of San Antonio	X			X		X	N/A	1983
Commonwealth Electric Company	X			X		X	N/A	N/A
Connecticut Light and Power		X	X			X	1986	1985
Consolidated Edison Co. of New York		X	X		X		1985	1985
Delmarva Power	X			X		X	N/A	1986
Florida Power & Light Co.		X		X		X	1984	1982
Gainesville Regional Utilities	X			X		X	N/A	1983
Georgia Power Company	X			X		X	N/A	N/A
Gulf Power Co.	X			X		X	N/A	1981
Gulf States Utilities		X		X		X	1985	1984
Idaho Power Co.	X		X			X	N/A	1982
Iowa Power and Light Co.	X			X		X	N/A	1982
Iowa Southern Utilities	X			X		X	N/A	1986
Jersey Central Power and Light Co.		X		X		X	1983	1982
Lincoln Electric System	X			X		X	N/A	1982
Madison Gas and Electric Co.	X			X		X	N/A	1985
Metropolitan Edison Co.		X		X		X	1984	N/A
Midwest Electric Cooperative, Inc.	X			X		X	N/A	1986
Nevada Power Co.		X		X		X	1986	1983
New England Electric		X	X		X		1986	1986
New York State Electric & Gas Corp.	X		X		X		N/A	1985
Niagara Mohawk Power Corp.		X	X		X		1986	1986

(cont.)

Table 1-2 (CONTINUED)

UTILITY	PROGRAM TYPE		PROGRAM SCALE		PROGRAM AREA		START DATE	
	Res. Only	Res./C&I or C&I Only	Pilot	Full	Limited	All Serv.	C&I	Res.
Northern Indiana Public Service Co.	X		X		X		N/A	1986
Northern States Power Co.		X		X		X	1985	1982
Oklahoma Gas and Electric Co.	X			X		X	N/A	1982
Orange and Rockland Utilities, Inc.	X			X		X	N/A	1983
Otter Tail Power Co.	X			X		X	N/A	1987
Pacific Gas and Electric Co.		X		X		X	1983	1982
Pacific Power and Light Co.		X	X		X		1986	1986
Pennsylvania Electric Co.		X		X		X	1984	N/A
Pennsylvania Power and Light Co.	X			X		X	N/A	1986
Portland General Electric Co.	X			X		X	N/A	1980
Potomac Electric Power Co.	X		X		X		N/A	1985
Potomac Edison Co.	X		X		X		N/A	1984
Public Service Co. of Oklahoma	X			X		X	N/A	1984
Public Service Electric & Gas	X			X		X	N/A	1983
Sacramento Municipal Utility Dist.		X		X		X	1984	1982
Salt River Project		X		X		X	1985	1985
Seattle City Light	X			X		X	N/A	1983
Sierra Pacific Power Co.	X		X		X		N/A	1987
Snohomish County Public Utility Dist.		X	X			X	N/A	N/A
Southern California Edison Co.		X		X		X	1982	1983
Tampa Electric Co.	X			X		X	N/A	1981
Tennessee Valley Authority	X		X		X		N/A	1986
Texas Utilities Electric Co.		X		X		X	1981	1981
United Illuminating Co.		X	X		X		N/A	1986
Verdigris Valley Electric Coop.	X			X		X	N/A	1985
West Texas Utilities Co.		X		X		X	1986	1983
Wisconsin Electric Power Co.	X		X			X	N/A	1985
Wisconsin Power and Light Co.	X		X		X		N/A	1985
Wisconsin Public Service Corp.		X		X		X	1986	1986

(1) Note that data reflected in the analysis may not conform precisely to information in the summary table because of (1) coding choices about predominant program characteristics; (2) rounding of values; and (3) crosstabulations of characteristics in which missing values may change totals and subtotals.

Section 2

BASIC CHARACTERISTICS OF UTILITY REBATE PROGRAMS

UTILITIES RESPONDING TO THE SURVEY

Although the analysis is based on a reputational sample, the coverage of the nation's electric utilities was very broad. As Table 2-1 shows, the 133 utilities which responded to the questionnaire serve approximately 57 percent of the total electric utility customers in the nation.

The responding utilities consist of both investor-owned utilities (IOUs) and non-investor-owned utilities. However, we sent surveys to (and received responses from) a much greater proportion of IOUs, due to the evidence suggesting that rebate programs occur to a greater extent among IOUs (5). As Table 2-1 shows, questionnaires were returned by utilities serving 77.5 percent of all customers of investor-owned utilities (57.2 million out of 73.8 million); they were returned by utilities serving 16.8 percent of all customers of non-investor-owned utilities (6.5 million out of 38.7 million).

The respondents were also generally representative of the geographic areas of the country. Only one census region -- the East South Central region -- was underrepresented. (For purposes of the analysis, the East and West South Central regions were combined.)

About half of the utilities that responded to the survey do not have rebate programs. Among the IOUs, the utilities without rebate programs were smaller than those which have programs (an average of 384,000 customers compared to 767,000). Among non-IOUs, the opposite is the case. However, in both cases, survey respondents (with and without programs) are larger in size than the average utility in the nation.

OVERALL PREVALENCE OF REBATE PROGRAMS

Observations on utilities without rebates should be interpreted cautiously, because the sample used was heavily weighted towards utilities known to have rebate pro-

Table 2-1

DATA ON UTILITIES WITH AND WITHOUT REBATE PROGRAMS

	Responding Utilities			Customers Served by Responding Utilities (Millions)			All Utilities	
	With Rebate	Without Rebate	Total	With Rebate	Without Rebate	Total	Utilities	Customers (Millions)
Ownership								
IOUs	46	57	103	35.3	21.9	57.2	237	73.8
Non-IOUs	13	17	30	2.1	4.4	6.5	3220	38.7
Total	59	74	133	37.4	26.3	63.7	3457	112.5
Customers Per Utility								
IOUs				0.767	0.384	0.555		0.311
Non-IOUs				0.162	0.259	0.217		0.012
Total				0.634	0.355	0.479		0.033

grams. In particular, any estimate of the proportion of utilities without rebate programs on a national basis may be higher than indicated by responses to the survey. It is very likely that among the utilities not included in our sample, a higher proportion do not have rebate programs. With that caution, we observe that 59 percent of customers served by responding utilities are served by utilities with rebate programs. This would be too high as a national estimate of the prevalence of rebate programs. If, however, none of the non-responding utilities offer rebates, then only 33 percent of the nation would be served. This is likely to be too low an estimate. It is likely that in the range of 35 to 50 percent of the nation's electric utility consumers are served by utilities that have some form of an energy efficiency rebate program.

PROGRAM SCALE

Two-thirds of the responding utilities with rebate programs have full-scale programs (38 out of 57), rather than pilot programs (see Table 2-2). Three quarters of the programs identified cover the entire service territory (42 out of 57).

Not surprisingly, there is a strong relationship between the scale of the program and the extent of coverage. While only 26 percent of pilot programs cover the entire service territory, 97 percent of the full-scale programs do. Also, pilot programs are relatively new (77 percent were begun in 1985 or 1986).

PROGRAM TYPES

Residential rebate programs predominate (see Table 2-3). A total of 93 percent of the programs include residential appliances or space conditioning equipment. Of these 55 utilities, 35 have rebate programs for residential consumers only, while 20 have residential and C & I programs. In contrast, only four of the utilities have rebate programs for C & I customers only.

Another important characteristic of the programs is whether or not they include cooling equipment. Approximately three-quarters of the programs include at least one major cooling product. This emphasis is evenly distributed between the residential and C & I programs. Specific products for which rebates are offered will be discussed in the next chapter.

The most frequent commercial product included is lighting, with just under two-thirds of the C & I progams (15 out of 24) including this product.

Table 2-2

SCALE AND GEOGRAPHIC COVERAGE OF PROGRAM
(Number of Respondents)

	Geographic Area		
	Limited	All Service Territory	Total (1)
Scale of Program			
Pilot Program	14	5	19
Full Scale Program	1	37	38
Total	15	42	57

(1) Totals may not add to 59 utilities due to lack of responses from some utilities. See also notes on pages ES-3, 1-7 and 1-9.

Table 2-3

SECTORS AND GENERAL TYPE OF APPLIANCES COVERED
IN ENERGY-EFFICIENT REBATE PROGRAMS

Program Sectors	Number of Utilities
Residential Only	35
Residential and C & I	20
C & I Only	4
Total	59
Types of Equipment	
Cooling Equipment	
Yes	43
No	16
Commercial Lighting	
Yes	15
No	44

REBATE RECIPIENTS

The programs are overwhelmingly oriented to purchaser rebates (see Table 2-4). Rebates in 43 of the 59 programs are offered to purchasers only. In another 11 programs both purchasers and dealers are offered rebates. Only three programs offer rebates only to dealers.

PROGRAM START-UP

The vast majority of programs (93 percent) were proposed by the utility (see Table 2-4), while public utility commissions were involved in proposing 14 percent of the programs. The non-investor-owned utilities are not regulated by public utility commissions, so this distinction does not apply in this case. However, looking at only the IOUs, we still find that only a small number (17 percent) of programs were proposed by public utility commissions.

The most frequent year given for the start of a program was 1986 for both residential and commercial programs (see Table 2-5). While there were nearly as many pilot programs started in 1985 as 1986, more full-scale programs were started in 1986. The residential programs tended to be initiated somewhat earlier than the commercial programs.

PARTICIPATION IN PROGRAM DESIGN

Participation in program design and implementation by organizations other than the utility is limited (see Table 2-4). Government agencies (25 percent of programs), equipment manufacturers (22 percent) and dealers or dealer groups (20 percent) are the most likely to participate in the program. It is reported that consulting firms participate in 12 percent of the programs, while consumer groups participate in only two percent of the programs. Approximately 49 percent of the responding utilities state that no organization outside the utility is involved in program design or implementation.

Programs which include cooling equipment and the C & I sector are more likely to have participation of government agencies and manufacturers. On the other hand, equipment dealers, manufacturers and consultants are less likely to participate in programs that cover the entire service territory. Consultants are also less likely to participate in full scale programs. The latter observations suggest that industry groups participate in order to get programs started and/or that local associations are more likely to become involved in programs limited to specific areas.

Table 2-4

REBATE PROGRAM RECIPIENT,
PARTICIPATING ORGANIZATIONS AND ORIGIN

Recipient of Rebate	Number of Utilities
Purchaser	43
Dealer	3
Both Purchaser and Dealer	11
Neither	2
Organizations Participating in Program Design/Implementation	**Percent Responding Yes (1)**
Government	25
Equipment Manufacturers	22
Dealers	20
Consumer Group	2
Consulting Firms	12
Other	10
Utility Only	49

Program Origin	Percent Responding Yes (2)		
	Total	IOU	Non-IOU
Utility	93	94	92
Regulatory Commission	14	17	0
Consumer Group	2	2	0

(1) Numbers do not add to 100 percent because respondents checked more than one category.

(2) There are 46 IOUs and 13 non-IOUs in the sample.

Table 2-5

SCALE AND AREA OF PROGRAMS BY START DATE
(Percent of Utilities)

	Scale		Area		
	Pilot	Full	Limited	Full Service Territory	Total
Residential Start					
1980	0	3	0	3	2
1981	6	8	7	8	7
1982	6	19	0	18	15
1983	0	28	0	26	19
1984	11	6	7	8	7
1985	44	11	43	13	22
1986	33	19	43	18	24
1987	0	6	0	5	4
n=	18	36	14	38	54
Commercial Start					
1981	0	7	0	7	5
1982	0	14	0	14	10
1983	0	0	0	0	0
1984	0	36	17	21	24
1985	29	21	22	21	24
1986	71	21	40	36	38
1987	0	0	0	0	0
n=	7	14	6	14	21

With respect to the initiation of programs, we observe that PUCs were more likely to have proposed smaller scale and pilot programs. They were less likely to propose programs that included purchaser rebates. In the Mid-Atlantic, Mountain and Pacific states, PUCs were more likely to have proposed programs. They were less likely to have done so in the South Central States. In general, rebate programs are more common in states such as California, Florida, New Jersey, New York and Wisconsin where the regulatory climate has favored energy conservation. These five states are responsible for nearly one third of the rebate programs identified in this survey.

EVOLUTION OF THE PROGRAMS

There is a clear tendency for programs which are currently larger in their coverage to have been initiated earlier. Thus, as shown in Table 2-5, 63 percent of the residential programs that cover the full service territory were started in 1984 or earlier whereas only 14 percent of the limited territory programs were started in 1984 or earlier. Similarly, 42 percent of the full territory, C & I programs were started in or before 1984 compared to only 17 percent of the limited service territory programs.

In the same manner, pilot programs tend to be much more recent in origin (see Table 2-5). Seventy-seven percent of the residential pilot programs were initiated in 1985 or later whereas only 36 percent of the full scale programs were. All of the C & I pilot programs were started in 1985 or later, whereas only 42 percent of the C & I programs classified as full scale were.

These patterns of program initiation may be interpreted as an evolutionary process in which programs are started as pilots or in a limited area and are then expanded. Other evidence reviewed below on the products included and program budgets suggests a similar trend.

SUMMARY

This chapter has reviewed basic characteristics of utility rebate programs. We note that the survey has been returned by utilities that serve about 57 percent of the customers in the nation. Based on the responses, we estimate that more than one-third, but probably less than a half, of the electric utility customers in the country are served by utilities that have some form of energy efficiency rebate program in place.

Full scale programs that cover entire service territories predominate, as do residential programs, those which include cooling equipment and those which offer rebates to purchasers (rather than dealers).

We have also identified three major characteristics of programs which will be in evidence throughout the analysis. First, although rebates for purchasers predominate, there is a great deal of diversity in the programs. For example, full scale, residential, purchaser rebate programs which are the most frequent type of program only account for 41 percent of the responses. When more detailed characteristics are reviewed below, this diversity will become even more apparent.

Second, we observe indications of an evolutionary process: 1) programs which were started earlier are now larger than average; 2) pilot programs which are more likely to have been suggested by public utility commissions are smaller; and 3) consultants participate more in the design and implementation of pilot rather than full scale programs.

Third, there are geographic differences between the programs. Programs of utilities in Pacific, Mountain and Mid-Atlantic states are more likely to have been initiated by PUCs. Other geographic differences will be explored in subsequent chapters.

Section 3

PRODUCTS, EFFICIENCIES AND REBATE AMOUNT

PRODUCTS INCLUDED IN REBATE PROGRAMS

Overall, the residential rebate programs include an average of 2.6 products, with a standard deviation of 1.6 (see Table 3-1). On average, the C & I programs include two product areas, with a standard deviation of 1.2. Also, there may be a number of products included under a particular area (e.g., lighting) in the commercial and industrial programs. In total, the programs cover an average of just over three products, with a standard deviation of 2.3. Thus, utilities tend to include a wide range of energy efficient products in their rebate programs.

Full-scale programs and full territory programs tend to cover only slightly more appliances than pilot and limited area programs. Thus, program expansion generally appears to be in the size of the area covered and the budget, but not necessarily in the number of products. However, at least 20 utilities have added products or expanded the target audience since their programs were first begun. Most of these cases are larger, full-scale programs. Also, expansion from residential into the C & I sectors is particularly evident.

Six of the responding utilities offer rebates on some type of gas-fueled product. Most of these offers apply to efficient furnaces and boilers. All of the utilities offering rebates on gas products are combined gas and electric companies; three of the six also offer rebates to those purchasing efficient electrical products.

The most frequently included product is the residential heat pump, with 59 percent of the programs providing rebates for more efficient heat pumps (see Table 3-2). All of these programs include some minimum heat pump efficiency.

Table 3-1

NUMBER OF PRODUCTS INCLUDED IN REBATE PROGRAM
(By Sector, Scale and Area)

	Mean	SD (1)	n (2)
Sector (3)			
Residential	2.56	1.56	55
C & I	2.0	1.21	23
All Programs	3.22	2.32	58
Scale (3)			
Pilot	2.89	2.07	19
Full	3.30	2.47	40
Area (3)			
Limited	2.80	2.04	15
Full Territory	3.19	2.39	42

(1) SD is the standard deviation.
(2) n is the number of utilities represented in each category.
(3) Totals may not add to 59 utilities due to lack of responses from some utilities. See also notes on pages ES-3, 1-7 and 1-9.

Table 3-2

PRODUCTS INCLUDED BY UTILITY CHARACTERISTICS
(Percentage of All Programs Including Specific Products)

	Total Sample	Ownership		Region							
		IOU	NonIOU	N.E.	MIDAT	SAT	SCENT	ENC	WNC	MTN	PAC
n=	59	46	13	5	11	8	9	7	5	6	8
Residential											
Refrigerator	27	30	15	60	36	25	0	14	40	33	25
Freezer	9	11	1	20	9	13	0	0	20	17	0
Room AC	36	39	23	40	73	13	56	14	40	16	13
Central AC	39	35	54	0	55	38	78	14	40	33	25
Heat Pump	59	54	77	20	36	63	100	43	80	83	50
Furnace	14	11	23	0	9	13	11	43	20	17	0
Water Heater	39	44	23	20	36	25	44	57	60	33	38
Lighting	5	7	0	0	18	0	14	0	0	0	0
Other	17	17	15	20	27	13	22	0	0	0	38
C & I											
HVAC	19	15	31	0	18	0	22	29	20	17	38
Lighting	25	28	15	60	36	13	22	0	20	17	38
Motor	14	15	8	20	27	0	11	0	20	0	25
EMS (1)	5	6	0	0	18	0	0	0	0	0	53
Refrigerator	2	2	0	0	0	0	0	0	0	0	13
Other	14	15	8	0	9	13	22	14	0	0	38

(1) Energy management system.

Domestic water heaters and central air conditioners (CACs) are the next most frequently included programs (39 percent each). In some cases, qualifying water heaters are of special types (e.g., solar or heat pump water heaters); in other cases they must be relatively efficient conventional water heaters. Water heaters and central air conditioners are followed by room air conditioners (36 percent) and domestic refrigerators (27 percent) in terms of popularity. Table 3-2 depicts the diversity of the appliances covered in the programs. In a few instances, utilities include building envelope modifications such as insulation or window film.

Among the C & I programs, lighting products are most frequently included (25 percent of all programs). This is followed by HVAC equipment (19 percent of all programs) and motors (14 percent of all programs).

There are no statistically significant differences between IOU and non-IOU programs in terms of appliances covered. There are, however, a number of significant differences in the inclusion of products by region of the country.

New England utilities are less likely than utilities overall to include central air conditioners and heat pumps, but more likely to include residential refrigerators and freezers and commercial and industrial lighting. We can interpret this as reflecting: 1) the climate of a region where the peak demand due to cooling is not as severe as in other parts of the country; and 2) the need for greater base load savings in New England because of relatively low reserve margins there (6).

Utilities in the Mid-Atlantic region are more likely to include room air conditioners and energy management systems (EMS), but less likely to include heat pumps. Central air conditioners and heat pumps are more likely to be included in the South Central Region, but refrigerators are less likely to be included in this region. We can interpret this as reflecting a climate in which there is a heavy cooling load and peak demand is a major concern. The Pacific Region is more likely to include other residential and C & I equipment. Again, the smaller relative importance of cooling load in much of this region may affect the choice of products.

Several of the other characteristics of the programs exhibit correlations with the products covered. Full scale and full territory programs are less likely to include refrigerators and residential lighting products than pilot programs and/or

programs offered in a limited area. Full scale programs, however, are more likely to include heat pumps. Programs which offer dealer rebates are more likely to include central air conditioners, heat pumps and commercial refrigerators.

The year of the start of the program exhibits a noteworthy trend with respect to the products included. More recently started programs are less likely to include heat pumps and commercial lighting. However, these products may have been added to ongoing programs in recent years.

MINIMUM EFFICIENCY REQUIREMENTS

Table 3-3 shows the minimum efficiency level required to receive a rebate for the major residential cooling products -- central air conditioners, room air conditioners and heat pumps. All rebate programs for central air conditioners now require at least an 8.0 seasonal energy efficiency ratio (SEER). The most frequently required SEER and the median for central air conditioners is 9.3. The highest minimum value is an SEER of 10.0. For comparison, the average SEER of central air conditioners produced in 1985 was 8.8 (7). In some cases, the minimum efficiency requirement varies for different categories of air conditioners. For example, Texas Utilities Company has different minimums for single and three phase systems and for different size systems. The values in Table 3-3 are the lowest used by a particular utility. (Note that the seasonal energy efficiency ratio and the energy efficiency ratio (EER) for central and room air conditioners and for heat pumps are both expressed in terms of BTU/hr of cooling output per watt of power input.)

The lowest minimum EER value required for room air conditioners is 7.2. The median minimum qualifying value is 8.7, but the most frequent value and the highest qualifying value is a 9.0 EER. For comparison, the average room air conditioner produced in 1985 had an EER of 7.7 (8).

For heat pumps, the lowest minimum SEER is 7.5. The median value is 8.5, and the most frequent value is 9.0. The highest value is 10.0. Only six utilities reported a minimum required coefficient of performance (COP) for the heating efficiency of heat pumps. These values ranged from 1.8 to 2.8. Thus, most utilities with heat pump rebate programs base qualification on the cooling efficiency only.

Table 3-3

MINIMUM EFFICIENCY REQUIREMENTS
FOR AIR CONDITIONERS AND HEAT PUMPS
(By Number of Utilities)

	Appliance		
	CAC	RAC	HP
SEER or EER Range			
7.1 - 7.5	0	2	2
7.6 - 8.0	2	2	8
8.1 - 8.5	3	5	6
8.6 - 9.0	11	10	10
9.1 - 9.5	1	0	3
9.6 - 10.0	6	0	2
Median SEER or EER	9.3	8.7	8.5

Based on the data available for central air conditioners, utilities are requiring purchasers to select relatively efficient models in order to receive a rebate. Based on the shipment data available for 1985 (9), it is estimated that about 25 percent of the CAC models shipped nationwide in 1986 exceed the typical minimum SEER of 9.3 for CAC rebate programs. About 10 percent of the models produced exceed the highest minimum requirement (a 10.0 SEER).

The minimum efficiency requirements are more difficult to present for products other than cooling equipment. In some cases, qualification is based on purchase of particular types of products, such as heat pump water heaters, compact fluorescent light bulbs, and high intensity discharge lamps. For products such as residential refrigerators, freezers and water heaters, the Energy Guide label rating is often used as the basis for determining qualification. The Energy Guide label shows the annual operating cost using a national average electricity price. To qualify for a rebate, a maximum label rating is specified in different categories of product type and size.

Many utilities with older rebate programs have increased the minimum efficiency requirements for cooling products over time as efficiency has risen in the marketplace. For example, the Austin, Texas municipal utility started with a minimum SEER of 8.4 for central air conditioners in 1982. The minimum was increased to 9.0 in 1984, and was then raised to 10.0 effective in 1986. Such modifications ensure that a utility continues to stimulate greater levels of energy efficiency in new models, rather than paying purchasers for what they would have bought anyway. Another review of utility incentive programs also found that minimum efficiency levels for air conditioners and heat pumps generally rose between 1983 and 1986 (10).

Regarding the relationship between minimum efficiency requirements and other program characteristics, non-IOUs tend to have lower minimum requirements for central air conditioners than IOUs. Full scale and full territory programs tend to have lower minimum SEER requirements for central air conditioners, but higher than average efficiency requirements for heat pumps.

Regarding regional differences, Mid-Atlantic utilities have higher than average CAC requirements, while Pacific utilities have significantly lower requirements. In addition, South Atlantic utilities have significantly lower than average room air conditioner efficiency requirements and East North Central utilities have lower than average heat pump efficiency requirements.

REBATE AMOUNTS

Table 3-4 shows the percentage of utilities that vary their rebate payments to some extent based on either equipment efficiency or equipment size. About half the programs use equipment size to set the rebate amount and half use efficiencies to set rebate amounts. However, one third of the utilities use neither efficiency nor size and 45 percent use both. About 22 percent of the utilities use either efficiency or size, but not both.

Varying the rebate amount in relation to equipment size and efficiency is more common in rebate programs for residential air conditioners and heat pumps. Of the responding utilities with rebates for residential CACs and/or heat pumps, 66 percent vary the rebate according to size and 66 percent vary the rebate according to efficiency. A number of utilities offer rebates in terms of dollars per ton of air conditioning capacity. Some utilities use two or three efficiency tiers for changing the rebate amount; others use a more graduated sliding scale. Equipment manufacturers strongly prefer the sliding scale or multi-tier approach (11).

Among the factors used in setting rebate amounts, avoided capacity cost is most frequently cited by the 59 utilities (see Table 3-5). Approximately 54 percent of the utilities said this was the first or second most important factor. Paying an amount considered sufficient to affect purchase decisions was given by 46 percent of the utilities as the first or second most important factor used in setting rebate amounts. Extra first cost (27 percent) and avoided energy costs (20 percent) were the next most frequently cited factors.

Just over two-thirds of the respondents claim that their rebate program does not penalize non-participants (i.e., it satisfies the "no losers" test). Older programs are more likely to set rebates by equipment size, to apply a no losers test and to have avoided capacity as a consideration in rebate amounts. Full scale programs are more likely to take efficiency into consideration in setting amounts and to apply a no losers test.

Regarding the relationship between the basis for setting rebate amounts and other program characteristics, use of avoided capacity costs is more common in programs

Table 3-4

CRITERIA USED IN SETTING REBATE AMOUNTS
(Percent of Respondents)

	Equipment Efficiency Considered		
	No	Yes	Total
Equipment Size Considered			
No	33	12	45
Yes	10	45	55
Total	43	57	100

Table 3-5

KEY FACTURS IN SETTING AMOUNTS FOR REBATES
(Percent of Utilities)

1st or 2nd Most Important Factor in Setting Rebate Amount	Percent of Utilities
Avoided Capacity Cost	54
Avoided Energy Cost	20
Extra First Cost for Qualifying Equipment	27
Amount Necessary to Affect Consumers' Purchasing Decisions	46

that include cooling equipment. This is logical given that more efficient cooling equipment leads to reductions in peak demand. Also, use of equipment efficiency as a basis for setting rebates and use of the no losers test is more likely in full scale as opposed to pilot programs.

RESIDENTIAL PROGRAMS

Rebate amounts vary widely both in the amount offered and in the basis for determining the rebate amount. Table 3-6 presents the rebate amount for heat pumps and air conditioners, the most popular products and the products for which respondents gave the most complete data. Four different approaches to establishing rebates are observed.

The most frequently offered rebate is a fixed amount per heat pump. In some cases, different rebates are paid for different categories of equipment (e.g., single phase or three phase) or different categories of purchaser (e.g., new vs. replacement market). Minimum rebates per heat pump vary from $50 to $421, with a median value of $110. For heat pumps, the maximum amounts vary from $50 to $915, with a median value of $300.

The second most frequently used rebate unit is dollars per ton of capacity. For heat pumps, the minimum rebate per ton varies from $12 to $110, with a median of $50. The maximum rebate per ton varies from $12 to $210, with a median of $95. Given that residential heat pumps are typically three tons in capacity, the median rebate amounts are quite similar for the "per appliance" and "per ton" approaches.

Two other approaches to heat pump and CAC rebates are followed by a few utilities. One approach pays for each unit of SEER above a specified minimum. The other approach pays per KW saved, according to an efficiency improvement in the system relative to some baseline efficiency. Of the 33 utilities that provided data on rebate amounts for heat pumps, three used either of these other two approaches. The two utilities paying rebates per KW saved are both located in Oklahoma.

Central air conditioners exhibit patterns of rebate amounts that are similar to those for heat pumps. The minimums, maximums and medians are similar to those of heat pumps.

Table 3-6

RANGES FOR MINIMUM AND MAXIMUM REBATES
FOR MAJOR COOLING APPLIANCES
(In Dollars)

Unit of Rebate	Number of Utilities	Minimum $			Maximum $		
		Low	High	Median	Low	High	Median
Rebates Per Ton							
Heat Pump	11	12	110	50	12	210	95
Central AC	8	12	72	48	12	245	80
Room AC	10	12	95	36	12	185	72
Rebates Per Appliance							
Heat Pump	20	50	421	110	50	915	300
Central AC	13	30	421	63	100	915	328
Room AC	10	3	50	25	3	150	50

For room air conditioners, rebates per appliance are about as common as rebates per ton. The absolute rebate amounts are smaller than the rebates for central air conditioners or heat pumps, consistent with the lower capacity, cost and energy consumption of room air conditioners. The minimum rebate per appliance ranges from $3 to $50 with a median of $25. The maximum rebate per appliance ranges from $3 to $150, with a median of $50. The minimum rebate per ton varies from $12 to $95, with a median of $36. The maximum rebate per ton varies from $12 to $185, with a median of $72. Given the fact that window units are typically 0.9 tons (10,800 Btu/hr) in capacity, the rebates per ton are roughly equivalent to the rebates per appliance. Moreover, they are in line with the rebates offered for the larger cooling systems.

Other residential rebates are almost exclusively paid on a per appliance basis (see Table 3-7). For refrigerators, the minimum rebate varies from $3 to $100, with a median of $30. The maximum rebate varies from $3 to $125, with a median of $50. In five of the 14 refrigerator programs, the rebate amount varies with product size and/or efficiency.

For conventional domestic water heaters, minimum rebates vary from $5 to $100, with a median of $25. Maximum rebates vary from $35 to $186, with a median of $100. The rebate amount varies according to product size and/or efficiency in eight of the 15 programs.

Table 3-7 shows that a significant number of utilities offer rebates on unconventional water heaters -- solar, heat pump and/or heat recovery type water heaters. These offers are concentrated in the South and the Pacific regions.

The minimum for solar water heaters ranges from $50 to $500 with a median of $150. The maximum has the same range, but a median of $300. For heat pump water heaters, the minimum ranges from $50 to $250 with a median of $100. The maximum ranges from $50 to $300 with a median of $200. For heat recovery water heaters, the rebates range from $100 to $177 with a median of $100 for both minimums and maximums.

Considering the amount of money paid to purchasers vs. sellers over the range of residential rebate programs, it is clear that rebate amounts are much less for sellers than for purchasers. For example, the exceptionally low refrigerator and freezer rebate case ($3 per qualifying model) is a dealer program operated by Florida Power and Light Company. Also, sellers receive a small fraction of the

Table 3-7

RANGES OF MINIMUM AND MAXIMUM REBATES
FOR OTHER THAN MAJOR COOLING APPLIANCES
(Rebate Per Appliance, In Dollars)

Appliance	Number of Utilities	Minimum $			Maximum $		
		Low	High	Median	Low	High	Median
Refrigerator	14	3(1)	100	30	3 (1)	125	50
Domestic Water Heater	15	5	100	25	35	186	100
Solar Water Heater	7	50	500	150	50	500	300
Heat Pump Water Heater	8	50	250	100	50	300	200
Heat Recovery Water Heater	3	100	177	100	50	177	100
Freezer	3	3	10	10	3	100	10

(1) The $3 rebate for refrigerators and freezers is a dealer program.

total rebate in cases where utilities pay both the purchaser and seller. This is apparently based on the theory that retailers can receive a lower rebate per unit because they sell many units.

C & I PROGRAMS

C & I programs are somewhat more complex in the products they include and how their rebate amounts are structured. Some larger programs, such as Pacific Gas and Electric Company's and Southern California Edison Company's include dozens of conservation measures in all end-use areas. Several programs provide flexible rebate amounts in the range of 30 to 50 percent of the installed cost of the conservation measures. In some cases, rebates are based on paying $100 to $200 per peak KW saved. This approach requires estimates of the energy and/or peak power savings from particular retrofits.

Other C & I programs specify the rebate amount per product or per unit of capacity. Table 3-8 shows the range and average rebate amount for a number of measures commonly included in C & I rebate programs. Energy efficient fluorescent tubes are given rebates in the range of $0.25 to $2.50. Ballasts are given rebates in the range of $0.60 to $12. A small number of programs provide specified rebates for screw-in fluorescent lamps (in the $4 to $5 range), metal halide lamps (in the $25 to $75 range), and optical reflectors (in the $10 to $27 range).

Energy efficient motors are generally awarded rebates based on capacity in the range of $2 to $25/HP. In one case, the rebate amount also depends on the motor efficiency. HVAC systems for C & I customers are awarded rebates on a tonnage basis in all but one case where a fixed rebate is used.

INNOVATIVE PROGRAMS

Some utility rebate programs involve different products or schemes compared to those previously described. These innovative programs may be of interest to utilities that are beginning or expanding their rebate incentives.

A few utilities require customers to install a number of conservation measures in order to qualify for a rebate. Gulf Power Company requires both an efficient air conditioner or heat pump and an alternative water heater (e.g., heat pump, solar, or heat recovery unit). Pennsylvania Power and Light offers a $1,000 incentive to customers or builders if an electrically-heated home meets certain thermal integ-

Table 3-8

REBATES FOR ENERGY-EFFICIENT COMMERCIAL APPLIANCES
(In Dollars)

Appliance	Number of Utilities	Minimum $			Maximum $		
		Low	High	Median	Low	High	Median
Fluorescent Tubes	9	0.25	1.25	0.60	0.50	2.50	1.50
Ballasts	6	0.60	4.00	2.50	1.50	12.00	4.00
Halide Fixtures	2	25	30	NA	30	75	NA
Screw-In Fluorescents	2	4	5	NA	4	5	NA
Optical Reflectors	3	10	12	11	10	27	12
Motors ($/HP)	6	2	25	5	2	25	7
HVAC ($/ton)	3	10	72	32	10	189	72
$/Appliance	1	500	500				

rity standards, includes efficient appliances, and storage space and water heating equipment is installed. Comprehensive requirements of this sort can maximize the amount of energy savings per participant.

Other utilities include a wide range of conservation measures, thereby providing customers with a high degree of flexibility in how they achieve energy savings. Many of these programs offer a fixed amount per kW conserved. Oklahoma Gas and Electric Company, for example, pays residential customers $200 per peak kW saved via air conditioning, water heating, or weatherization measures. Jersey Central Power and Light, Metropolitan Edison Company and Southern California Edison Company offer their C & I customers $100 per kW of load reduction from lighting conservation measures. Southern California Edison also offers businesses $100 per kW of load reduction in product manufacturing and pumping systems. With this type of rebate offer, utilities attempt to pay directly for electricity savings. However, it is necessary to estimate the amount of energy savings and in some cases estimate what customers would purchase in the absence of the rebate offer.

Pacific Gas and Electric Company (PG&E) has conducted some innovative rebate programs in recent years. PG&E began a second refrigerator removal program in 1979 whereby consumers receive $25 for donating an operable refrigerator to a charity and the charity receives $25 if they destroy the refrigerator. This program reduces the use of unnecessary second refrigerators. PG&E also provides a $50 rebate to residential customers who replace an old electric range or dryer with a a pilotless gas range or dryer.

SUMMARY

This chapter has reviewed the products included in energy efficiency rebate programs and the rebate amounts. The average number of product areas per utility is three, with a standard deviation of 2.3. The most frequent residential products are heat pumps, water heaters and air conditioners. The most frequent C & I product areas are lighting and HVAC equipment.

Minimum efficiencies, units of measure for the rebate, and rebate amounts vary widely among utilities. Rebates per appliance are the most frequent form for the residential and C & I programs. Rebates per unit of capacity (size) are the next most frequent, and are used primarily with HVAC equipment and motors. A few

utilities award rebates based on the estimated peak power savings. This is more prevalent in the C & I programs.

Further evidence was presented concerning evolutionary developments in rebate programs. About one third of the responding utilities have increased the number of product areas or target audience since they first offered rebates. Expansion in the C & I sectors is particularly evident. Also, many utilities with older programs have increased their minimum efficiency requirements over time, and older full-scale programs are more likely to set rebate amounts according to equipment efficiency.

Logical geographic differences exist among the programs. The inclusion of cooling equipment is less likely in cooler climates than in hotter climates. In contrast, inclusion of refrigerators and commercial lighting products is more likely in cooler climates.

At this point, another conclusion can be added. The underlying pattern of restricting rebates to relatively efficient products, in many cases increasing rebates with product efficiency, the geographic pattern of appliances included, and the attention paid to avoided capacity cost when setting up programs suggests that utilities are seriously committed to stimulating energy and peak power savings through their rebate programs.

Section 4

PROGRAM OBJECTIVES AND QUALITATIVE RESULTS

PROGRAM OBJECTIVES

Table 4-1 indicates what the utilities hope to accomplish with their rebate programs. The most frequently stated purpose of the program is to promote energy efficiency, with 80 percent naming it as one of their objectives. Approximately two-thirds of the respondents state that peak load reduction is a purpose of the program, and nearly 60 percent of the utilities that ranked the objective indicated that reducing peak load is one of their top two objectives. The emphasis on peak load reduction and promoting energy efficiency is consistent with the results from another recent survey of utility incentive programs (12).

Improving community relations (41 percent), establishing a market for efficient appliances (32 percent), leveling load (31 percent), and satisfying public utility commission requirements (27 percent) were given as purposes by a significant minority of the respondents. Only a few respondents cite reducing base load and economic development (two percent) as purposes of the program. Non-IOU programs are more likely to identify local economic development as a goal and less likely to cite satisfying a regulatory commission.

The more recently the program was initiated, the less likely the respondent was to give either peak or base load reduction as a goal and the more likely the respondent was to give increasing market share, promotion of energy efficiency, or determination of feasibility as a purpose. These patterns are consistent with the overall theme we have depicted of programs going through an evolutionary process.

New England and South Central utilities were more likely to identify peak load reduction as a purpose and less likely to give market creation as a purpose. East and West North Central utilities exhibit the reverse pattern, with less emphasis on reducing peak load and more on increasing market share. New England utilities were more likely to give base load reduction as a goal, while Mid-Atlantic utilities were less likely to give base load reduction as a goal.

Table 4-1

PROGRAM OBJECTIVES
(By Percent of Utilities)

Program Objectives	Percent Acknowledging as an Objective	Percent Acknowledging As One of Top Two Objectives
Reduce Peak Load	66	59
Reduce Base Load	15	6
Level Load	31	22
Increase Market Share	32	20
Promote Energy Efficiency	80	31
Improve Community Relations	41	10
Further Local Economic Development	2	0
Satisfy Regulatory Commission	27	10
Determine Program Feasibility	36	20

PROGRAM EVALUATION

Table 4-2 shows the types of program evaluation that the utilities claim were conducted or are planned. The two predominant methods of evaluating the program are quantitative evaluation of cost effectiveness (66 percent) and quantitative evaluation of energy savings (70 percent). Moreover, 82 percent of the respondents claim they use at least one of these methods (64 percent use both). Thus, the primary methods of program evaluation are consistent with the primary objectives given by the utilities.

Those who do not use quantitative methods of program evaluation are particularly likely to rely on surveys. Seventy percent of the respondents not evaluating savings or cost effectiveness use such surveys. In the aggregate, a significant minority of utilities use surveys of participants (48 percent) and dealers (41 percent) for program evaluation.

Responses regarding particular program impacts call into question the extent to which utilities are conducting quantitative evaluations and the nature of these evaluations. Only 32 percent of the utilities could estimate the percentage of appliances sold locally that could qualify for rebates. Many of these utilities base their estimates on surveys of local dealers and contractors.

Likewise, only 32 percent of the utilities were able to estimate the additional number of purchases of energy efficient models as a result of their programs. Many of these utilities simply estimate the average energy savings due to the rebates or the number of efficient models that would be purchased if the incentives were not offered. Only a few utilities state that they are conducting experiments to determine the incremental number of purchases of more efficient products, actual energy savings, and the cost per unit of energy and peak demand savings. For these reasons, the majority of utilities may not be estimating the savings, cost effectiveness and other quantitative impacts of their rebate programs with great precision.

Regarding the relationship between region and type of evaluation, New England's utilities were more likely to rely on questionnaires and quantitative estimates of savings and cost effectiveness. This is consistent with their stated purposes of saving energy. South Atlantic utilities were less likely to rely on questionnaires. In contrast, East and West North Central utilities were less likely to estimate energy savings.

Table 4-2

TYPES OF PROGRAM EVALUATION
(By Percent of Utilities)

Evaluation Method	Percent Responding Yes
Questions on Application Form	20
Survey of Participants	48
Survey of All Customers	19
Survey of Dealers	41
Quantitative Evaluation of Energy Savings	66
Quantitative Evaluation of Cost Effectiveness	70
Other	7

QUALITATIVE MEASURES OF SUCCESS, PROBLEMS AND PLANS

Fifty-six to 69 percent of the utilities state that they are very satisfied with their rebate programs (see Table 4-3). Only five utilities are not satisfied with their rebate programs. The level of satisfaction appears to be consistent among residential, C & I and multi-sector programs.

Almost 60 percent of the respondents reported no problems with their rebate program. This is in response to questions regarding any problems identified in either customer or dealer surveys. There were somewhat more problems identified through surveys of dealers than through surveys of consumers.

About two-thirds of the respondents who could answer said that they had met their energy savings target for residential sector programs. Only about half said that they had met their energy savings target for C & I sector programs. This may reflect in part the more recent initiation of many C & I programs.

Table 4-4 includes the percentage of utilities citing particular aspects of their program as being most successful. The particular aspects most frequently perceived as successful are improved public relations (63 percent), influencing consumer behavior (63 percent), stimulating the market for efficient products (61 percent) and improved customer satisfaction (59 percent). Also, nearly half of the utilities indicated that their program is easy to implement. These results suggest that utilities are about equally pleased with their rebate programs because of the energy savings and the improved customer relations.

Table 4-4 also includes the percentage of utilities that observe particular problems with their rebate programs based on customer and dealer evaluations. The most frequently cited problem, overall, was the cumbersomeness of the application process. This was followed by the rebate amount being too low and there being too few qualifying models. However, each of the problem areas was mentioned by a small percentage (less than 15 percent) of all respondents to the survey.

Reflecting these problems to some degree, the most frequently stated plans for change in the program (see Table 4-5) were to improve dealer cooperation (48 percent). This could help in making more qualifying models available and increasing program participation. Just over a third say they plan to improve public relations, while just under a third say they need to stimulate more customer

Table 4-3

OVERALL SATISFACTION WITH ENERGY EFFICIENCY REBATE PROGRAMS
(By Sector, By Number of Utilities)

Program Sector	Number of Utilities	Percent in Category
Residential Programs		
Very Satisfied	24	63
Fairly Satisfied	11	29
Not Satisfied	3	8
C & I Programs		
Very Satisfied	5	56
Fairly Satisfied	3	33
Not Satisfied	1	11
Residential and C & I Programs		
Very Satisfied	9	69
Fairly Satisfied	4	31
Not Satisfied	1	11

Note: Utilities with different levels of satisfaction for different parts of their overall rebate program are included more than once.

Table 4-4

ASPECTS MOST SUCCESSFUL
AND PROBLEMS IDENTIFIED

Aspects Most Successful	Percent Responding Yes
Easy to Implement	49
Helped Consumers Make Energy-Conscious Decisions	63
Improved Customer Satisfaction	59
Good Public Relations	63
Stimulated Market for Efficient Appliances	61
Other	9

Problems Identified	Percent Responding Yes: Dealer Evaluation	Percent Responding Yes: Consumer Evaluation
Inhibits Quick Sale	3	NA
Application Too Cumbersome	12	10
Labels Confusing	3	5
Dealers Confused	9	NA
Customers Not Interested	2	NA
Rebate Too Low	9	7
Target Audience Too Narrow	5	NA
Too Few Qualifying Models	14	2
Interferes With Marketing Strategies	9	NA
Other Problems	14	7
Dealers Not Helpful	NA	7
Dealers Uninformed	NA	9
Efficiency Not Important	NA	7

Table 4-5

PLANS FOR CHANGING REBATE PROGRAMS

Suggested Changes	Percent of Respondents
Reduce Administrative Costs	17
Improve Public Relations	36
Change Application Process	24
Improve Efficiency Labels	5
Improve Dealer Cooperation	48
Improve Cost Effectiveness	25
Improve Customer Interest	31
Change Rebate Amount	20
Simplify Program	9
Change Other	15

interest. Improvements in cost-effectiveness, changes in the application process, and changes in the rebate amounts were cited next most frequently.

The overwhelming majority of programs will continue to cover the appliances now included in the program (see Table 4-6). The appliances most likely to be dropped are residential freezers (60 percent of their programs) and residential refrigerators (almost a third of their programs).

There is also a strong inclination to raise efficiency levels, particularly for residential cooling products. Between a third and a half of the room air conditioner, central air conditioner, and heat pump programs plan to raise their minimum efficiency levels. About a fifth of the respondents plan to raise efficiency levels for other residential appliances. This is consistent with the evolution in program design discussed previously. Only a few utilities, however, are planning to change their rebate amounts.

Generally, there is more satisfaction with and fewer problems encountered in the larger scale, more comprehensive combined residential and C & I programs. Our explanation for this, given the overall pattern of results, would be that managers of these programs tend more to work out problems at partial scale before going to full scale. In line with the general theme we have struck regarding development of the programs, we note that fewer improvements are planned in the full scale programs.

The respondents in different regions cited different successful aspects and problems, although there does not appear to be a clear pattern to these responses. One related finding is that New England utilities were much more likely to be planning program improvements, reflecting the fact that there is greater emphasis on energy savings in this region, and that New England utilities generally have begun their programs more recently than utilities in other regions.

EXPERIMENTATION IN REBATE PROGRAMS

In light of our observations on the development of rebate programs, the experiences of some utilities in experimenting with their rebate programs is of interest. In the early 1980's, rebate programs were usually designed and implemented without prior experimentation. More recently, some utilities have been experimenting with different program designs in order to increase the energy savings and cost effectiveness of their programs. Controlled experiments are also being used to

Table 4-6

PLANS FOR PROGRAM CHANGE BY PRODUCT TYPE
(Number of Utilities)

Sector	Total Number of Utilities With Appliance	Plans for Program Change		
		Discontinue	Raise Efficiency	Change Rebate Amount
Residential				
Refrigerator	16	5	3	0
Freezer	5	2	1	0
Room AC	21	2	8	0
Central AC	23	0	10	0
Heat Pump	35	3	11	2
Furnace	8	0	1	0
Water Heater	23	3	5	1
Lighting	3	0	0	0
Other	10	1	2	1
C & I				
HVAC	10	2	1	2
Lighting	15	0	2	3
Motor	8	1	0	2
Energy Management System	3	0	0	1
Refrigerator	1	0	0	1
Other	8	0	2	2

determine the incremental impact on purchase behavior and energy consumption that results from a particular rebate offer. Such experiments usually involve pilot rebate programs, with the intention of proceeding to a full scale program based on the results of the pilots.

The Bonneville Power Administration (BPA) launched an experimental rebate program for solar and heat pump water heaters in 1984. The pilot program is implemented by 11 municipal utilities and public utility districts served by BPA. Each utility offers either a high or low rebate, and conducts either a high or low level of promotion. Thus, four different combinations of rebate level and promotion are being tried. The three-year marketing test will conclude in 1987.

The New York State Electric and Gas Corporation (NYSE&G) experimented with different rebates for residential refrigerators, room air conditioners and central air conditioners in 1985-86. For air conditioners, high, medium and low rebates each were offered in different regions of the NYSE&G service territory. For refrigerators, one region received promotion only while the other two regions received promotion and either a high or low rebate. In 1985, Wisconsin Power and Light conducted a similar experiment involving varying refrigerator rebates across the districts.

Another utility in New York, the Niagara Mohawk Power Corporation (NMPC), is experimenting with high and low rebate offers on a variety of efficient residential products. The rebate levels are based on a sliding scale, and each of the two offers was presented to a sampling of NMPC's residential customers. Product purchase and other data is being collected from both treatment groups as well as a control group.

None of these rebate program experiments had been concluded and evaluated as of early 1987. However, they should help the sponsoring utilities as well as utilities in general better understand the relationship between rebate amount, program promotion and purchaser behavior.

SUMMARY

This chapter has examined the objectives, evaluation techniques and qualitative outcomes of the utility rebate programs.

Over four-fifths of the programs have the goal of promoting energy efficiency or reducing peak load and four-fifths use quantitative measures of cost effectiveness or savings to evaluate the program. However, most utilities are unable to estimate the percentage of appliances sold locally that could qualify for rebates or the additional number of purchases of efficient models resulting from their programs. In addition, only a few utilities are engaging in experiments to test different rebate amounts or program designs.

The majority of respondents are very satisfied with their programs and plan to continue them. About two-thirds feel they have met their energy savings targets in the residential sector and half feel they have met their savings targets in the C & I sector. The utilities indicate particular success with the public relations aspects, help in getting consumers to make energy-conscious decisions, stimulation of the market for efficient appliances, and improved customer satisfaction.

While problems are not widely indicated, the most frequently cited problems are the cumbersomeness of the application process, the small amount of the rebate, and the lack of qualifying appliance models. The changes most likely to be planned are terminating the programs for freezers and refrigerators, and raising the minimum efficiency levels for air conditioner and heat pump rebates.

Several geographic trends are observable. New England utilities are more likely to give peak and base load reductions as a goal. Mid-Atlantic utilities are less likely to give base load reduction as a goal, while South Central utilities are more likely to give peak load reduction as a goal. The North Central utilities place less emphasis on reducing peak load and more emphasis on increasing market share as a program objective. These goals are consistent with the earlier observations on the products included.

The evolution of the programs is observable in the fact that more recent programs are less likely to give peak or base load reduction as a goal and more likely to give market creation or determination of feasibility as a goal. Older programs cite fewer problems and express more satisfaction, suggesting that the "bugs" are worked out over time.

Section 5

QUANTITATIVE ASPECTS AND OUTCOMES

FUNDING SOURCES AND LEVELS

The average annual budget for the 38 rebate programs for which utilities provided data is $3.0 million (see Table 5-1). The budgets are for the most recent year for which data are available (usually 1986). The median budget, $800,000, is much lower than the average budget. This is due to the large number of small programs and small number of very large programs. While residential and C & I budgets tend to be about the same size, those utilities which run combined residential and commercial programs have much larger average budgets -- over $6 million. Similarily, pilot programs and programs which cover part of the service territory had smaller budgets (about $1 million), compared to $4 million on average for full scale programs. Newer programs also tended to have smaller budgets. This appears to reflect the evolutionary process through which programs progress.

Administrative costs (including promotion) account for about one quarter of the overall budget (27 percent on average). The standard deviation is 21 percent. Thus, about one third of the rebate programs consume half or more of their budgets in administrative costs. On the other hand, one third consume less than seven percent of their budgets in administration. As expected, the administrative cost fraction is higher in pilot programs than in full scale programs.

The funding source for the rebate programs is about evenly split between "included in the rate base" and "operating expense." This even split is maintained when the other key characteristics (e.g., ownership, region, etc.) of the programs are controlled for, i.e., there are no significant correlations between funding source and other major characteristics. Utilities that include their rebate program in the rate base are able to earn a profit on this expenditure just as they do with their supply side programs.

Table 5-1

PROGRAM BUDGETS
(Millions of Dollars)

Program Type	Average	Median
Residential	1.3	0.8
C & I Only	0.5	0.3
Combined Res/C&I	6.0	1.2
Total	3.0	0.8
Scale		
Pilot	0.9	0.4
Full	4.0	1.0
Area		
Limited	1.1	0.6
Total Area	3.2	0.9

	Residential Start		C & I Start	
Year	Average	Median	Average	Median
80	0.6	0.6	NA	NA
81	4.6	3.7	11.0	11.0
82	5.9	2.5	23.5	23.5
83	6.6	2.5	NA	NA
84	0.9	0.5	6.2	0.6
85	0.9	0.7	1.3	0.6
86	0.5	0.3	0.9	0.8
87	0.1	0.1	NA	NA

ENERGY AND PEAK POWER SAVINGS

Table 5-2 shows the range, average and median peak demand savings for 21 utilities which were able to provide this information. Although time of peak was not specified, it is assumed that all or nearly all values are summer peak savings. On average, the residential programs are reducing peak demand by 9.7 MW per year. On average, the C & I programs are reducing peak demand by 13.8 MW per year. Considering all programs conducted by individual utilities, the average peak demand reduction reported is 21 MW per year. The medians are much smaller than the means, however, and are in the range of 5 to 7 MW per year. The utilities reporting peak demand savings generally have older programs where evaluations have been completed.

Less information was provided on reductions in annual electricity consumption. This is not surprising, since reductions in peak demand are a much more prominent goal of the programs. The 11 residential programs reporting electricity savings averaged 17.8 million kWh per year, but the median was only 1.4 million kWh per year. The four utilities reporting annual electricity savings for their C & I programs reported an average savings of 165.5 million kWh per year.

It was possible to calculate the percentage reduction in peak power demand and/or annual electricity use due to the rebate programs for some utilities. This was done by dividing the annual reduction in peak power demand and the annual electricity savings resulting from the rebate program by the total peak power demand and electricity sales for the utility (as reported by the utility). Data on percentage peak demand reduction was calculated for 21 utilities. The peak demand reduction ranged from 0.01 percent per year to 1.38 percent per year, with an average reduction of 0.34 percent per year. Data on percentage electricity savings was calculated for 11 utilities. The electricity savings ranged from 0.02 percent per year to 0.85 percent per year, with an average value of 0.21 percent per year. The relative magnitude of the peak demand savings is greater than the annual electricity savings because of the emphasis on cooling technologies and peak demand reduction.

THE COST OF PEAK DEMAND SAVINGS

Given the information provided on peak demand savings and program budget, we were able to determine the program cost per KW of peak demand reduced. In some instances, separate cost of saved peak demand values were calculated for different components of a utility's rebate program. It should be recognized that these calculations were made by us, rather than by the utilities.

Table 5-2

ANNUAL PEAK DEMAND REDUCTION (MW)

Type of Program	N	Low	High	Average	Median
Residential (1)	19	0.1	56.2	9.7	5.9
C & I (1)	10	0.8	52.1	13.8	4.8
Residential and C & I	2	5.4	140.0	72.7	NA
All Programs	22	0.1	140.0	21.0	6.7

(1) Utilities with both residential and C & I programs are included separately if they reported separate information.

The cost per unit of peak demand reduction varies widely among utilities and products (see Table 5-3). The lowest estimated value was $84 per kW, and the highest value was $1,285 per kW. The overall average was $300 per kW saved, and the median value was $200 per kW saved. Programs covering both the residential and C & I sectors (two utilities responded without disaggregating their programs) had the lowest average value -- $105 per kW saved. Rebate programs strictly dealing with the C & I sectors (10 utilities responding) had an average cost of $196 per kW saved. Programs dealing only with residential products (21 utilities responding) had higher costs. In this case, the average value was $372 per kW saved and the median was $275 per kW saved. Some utilities are represented more than once in this data if it was possible to make separate estimates for different sectors or products.

The high degree of variation in these values is due to differences in rebate amounts and program scale between utilities and products, and the different methods used to estimate peak demand savings. In general, energy efficient products for the C & I sector appear to be more cost effective (i.e., they cost less per unit of peak demand savings) than conservation measures in the residential sector.

Based on the limited data regarding cost of saved peak demand, it is possible to draw some general conclusions regarding specific product areas. First, C & I lighting rebate programs appear to be most cost effective from the perspective of cost per kW of peak demand savings. Second, rebate programs for residential air conditioners and heat pumps as well as HVAC equipment for C & I sectors are the next most cost effective, with costs often below $300 per kW saved. Third, it appears that rebates for residential refrigerators, freezers and water heaters exhibit the highest cost per kW of peak demand reduction. This is logical since these products present a relatively steady load (i.e., they save energy more effectively than they save peak demand).

Table 5-4 presents the annual budgets, peak demand savings, and fraction of peak demand saved for six of the largest utility rebate programs now underway. Of the utilities offering comprehensive rebate programs with an annual budget in excess of $1 million per year, these are the six utilities achieving the largest savings in terms of fraction of peak demand saved. For the six utilities listed in the table, the average annual budget is $16.2 million and the average peak demand savings is 62 MW per year. Comparing the savings estimates to actual peak demand for each of

Table 5-3

COST PER KW OF PEAK DEMAND REDUCED
(In Dollars)

Type of Program	Number of Utilities	Low $	High $	Median $	Mean $
Residential Only	21	90	1285	275	372
Residential & C & I	2	84	125	NA	105
C & I Only	10	100	375	195	196
All Programs	33	84	1285	200	300

Table 5-4

CHARACTERISTICS OF SELECTED MAJOR UTILITY REBATE PROGRAMS (1)

Utility	Products (2)	Annual Budget (million $)	Peak Demand Savings (MW/yr)	Fraction of Peak Saved (%/yr)
Austin, TX Electric Dept.	Res: AC, HP C&I: LT, HVAC, MO	5.9	19.3	1.38
Florida P&L	Res: AC, HP, WH C&I: LT	23.7	59.3	0.57
Northern States Power Co.	Res: RF, FR, AC, HP, WH C&I: LT, HVAC, MO	3.8	18.8	0.35
Pacific Gas and Electric Co.	Res: RF C&I: HVAC, LT, MO, EMS	24.9	56.2	0.40
Southern Cal. Edison Co.	Res: RF, AC, HP, WH C&I: HVAC, LT, MO	22.0	81.1	0.55
Texas Utilities Company	Res: AC, HP, WH C&I: HVAC, LT	17.0	140.0	0.88
Average		16.2	62.0	0.69

1. The annual budget and peak demand savings figures apply to both the residential and commercial-industrial programs in the most recent year for which data are available. The fraction of peak demand saved by the rebate program is presented in terms of the percentage of total summer peak demand.

2. Product codes: RF - refrigerator, FR - freezer, AC - air conditioners, HP - heat pumps, WH - water heaters, HVAC - commercial heating, ventilating, and air conditioning systems, LT - lighting, MO - motors, EMS - energy management systems.

the utilities, these six programs are cutting peak demand by 0.35 to 1.38 percent per year, with an average reduction of 0.69 percent per year.

Of the six large programs illustrated in Table 5-4, the Austin, Texas Resource Management Department is achieving the largest percentage peak demand reduction. The program offers large incentives, is well-promoted and is part of a broader city-wide conservation effort, both dealers and purchasers are eligible for rebates and have responded to the program, and economic growth and equipment sales have been relatively high in Austin. The experiences of the six utilities listed in Table 5-4 confirm that rebate programs can have a significant impact on electricity use.

SUMMARY

This chapter has reviewed the budgets, energy and peak power savings, and cost of saved peak power for the rebate programs. The average budget is $3 million per year. Combined residential and C & I programs have larger than average budgets ($6 million), as do full scale programs.

The average reduction in peak demand is 21 MW per utility reporting this information. For utilities that could provide data, the rebate was estimated to reduce total system-wide peak demand by 0.34 percent per year on the average and total electricity use by 0.21 percent per year on the average.

The average cost per kW of peak demand reduction is $372 for the residential programs, $195 for the C & I programs, and $300 overall. The overall median value is $200 per kW of peak demand reduction. Administrative costs account for just over a quarter of total rebate program costs on the average, although there is considerable variation in this value.

Section 6

CRITICAL ISSUES AND RECOMMENDATIONS FOR FURTHER STUDY

INTRODUCTION

The primary objectives of this Compendium are to describe energy efficiency rebate programs and indicate what results these programs are having. The Compendium is based on data and perceptions provided by utilities that have undertaken rebate programs. We have not attempted to critically examine the information provided by the utilities nor thoroughly assess the successes or shortcomings in rebate program design, implementation and evaluation.

Conducting the survey and preparing the Compendium, however, has provided us with numerous insights concerning rebate programs as a whole. In this section, we discuss some of the more problematic aspects of energy efficiency rebate programs. Also, we suggest how rebate programs might be improved through actions utilities could undertake as well as through broader research and program support. In contrast to previous sections, this concluding section presents the subjective views of the investigators. Our views may not be consistent with those of the utilities who responded to the survey.

CRITICAL ISSUES RELATED TO REBATE PROGRAMS

A review of government and utility energy conservation programs published in 1986 concluded that very little research has been conducted concerning alternative forms of program design and delivery (13). Our survey of rebate programs confirmed this finding. Most utilities implement rebate programs without testing different rebate amounts, marketing strategies, etc. In many cases, a pilot program is used to test a predetermined program design and delivery strategy. Over time, problems are addressed and the scale of the program is increased. With this learn-as-you-go approach, it is difficult for utilities to assess how certain program characteristics influence customer response.

As described in Section 4, a few utilities have begun to experiment with different program designs. These utilities are varying the rebate amount and/or the mix of

rebate and promotional expenditures among different treatment groups. Other design features that could be tested in rebate program experiments include:

- varying the minimum efficiency requirements;
- designating different rebate recipients (e.g., consumers, dealers, or both parties); and
- adopting different advertising and marketing strategies.

By experimenting with these program features, utilities should be able to maximize energy savings and program cost effectiveness. Preliminary analysis of Wisconsin Power and Light's refrigerator rebate program experiment, for example, indicated that certain program characteristics are desirable in order to minimize the number of "free-riders" and increase cost effectiveness for the utility (14).

Quantitative rebate program evaluation is another area where there appears to be limited experience. Only a few rigorous evaluations of energy savings and cost effectiveness were identified and obtained in conjunction with this survey. Furthermore, as discussed in Section 4, most utilities were not able to estimate the additional number of purchases of energy-efficient products as a result of their programs. Many utilities that could provide this information made crude estimates. Knowing the additional number of energy-efficient purchases or retrofits is essential for addressing the issue of free-riders and determining the amount of savings induced by the rebate program.

One utility that did conduct a rigorous evaluation, Northern States Power (NSP), collected sales data from appliance distributors before and after appliance rebates began (15). This enabled the utility to estimate the actual change in energy consumption of new models when rebates were offered. The NSP evaluation produced some surprising results, including the finding that only 40 percent of eligible appliance purchasers actually applied for a rebate. NSP also was able to identify key factors affecting program success and improve its rebate program following the evaluation.

Equipment performance is another critical factor that affects energy savings, customer satisfaction and, ultimately, program feasibility. Most utilities base their energy savings estimates on the standard efficiency ratings of appliances and other products. However, actual field performance may be different from what the

efficiency ratings would suggest due to variations in operating conditions, consumer behavior, or other factors. Field monitoring is needed to ascertain actual energy savings as well as product durability and user satisfaction. This will help utilities to determine the true savings and cost effectiveness of their programs and to avoid measures which have negative side effects (e.g., poor overall performance and user dissatisfaction).

RECOMMENDATIONS

One obvious recommendation following from the discussion above is that utilities engage in program experimentation, field monitoring, and rigorous program evaluation to a greater extent. The four rebate experiments mentioned previously (and others possibly underway) should be followed closely. They could serve as models for experiments by other utilities. Also, the results from these experiments could be of value to utilities throughout the country.

Regarding evaluation techniques, collecting sales data from (or for) a treatment group and a control group is one way utilities can accurately evaluate energy savings and address the issue of free-riders. In some cases, it may be possible to obtain sales data from equipment dealers or distributors. Sales data are a direct indicator of purchasers' behavior and are preferable to surveys of customers' attitudes for assessing program impacts.

Besides the need for additional research and evaluation by individual utilities, a number of broader activities are called for. For instance, the development of program design guidelines, based in part on recommendations from utilities with substantial rebate program experience, could help utilities develop more effective programs in a timely manner. Also, completion of various rebate program experiments should facilitate issuing credible program design guidelines. In addition, the national minimum efficiency standards for residential appliances and space conditioning equipment adopted in 1987 should be reflected in design guidelines for residential-sector rebate programs (16).

A review of previous rebate program evaluations along with recommendations for future evaluations would be an important resource for utilities. This study could examine and critique various methodologies for program evaluation, present examples of sound evaluations that utilities have found most useful, and recommend appropriate procedures for evaluating different impacts related to rebate programs.

In-depth studies of rebate program design and evaluation, along with publication of guidelines in these areas, are logical follow-up efforts to this Compendium. With greater attention to rebate program experimentation, design, and evaluation, an already popular demand-side management tool can be made even more successful.

Section 7

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Appendix A

UTILITY PROFILES

ARIZONA PUBLIC SERVICE COMPANY

1.	Name of utility:	Arizona Public Service Company
2.	Address:	Post Office Box 53999 Phoenix, AZ 85072
3.	Contact person:	Jim Spencer
4.	Phone:	602/250-2389
5.	Products included:	Central AC, room AC, heat pumps, window film and screens
6.	Duration:	In progress since 2/85
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, builders, and landlords
10.	Rebate amounts:	Central and room AC - $30-65/ton; heat pumps - $60-130/ton; window film and screens - 50% of installed cost
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	Central and room AC - 9.0 SEER or EER rating; heat pumps - 9.0 SEER or EER rating; window film and screens - shading coefficient of 0.50 or less
13.	Basis for setting rebate amounts:	Benefit from avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	$2.5 million

ARIZONA PUBLIC SERVICE COMPANY

19.	Objectives:	1) Reduce peak load; 2) improve customer relations; 3) promote energy efficient appliances; 4) satisfy regulatory commission
20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	14%
24.	Annual peak demand reduction:	13.8 MW
	Fraction of total peak demand:	0.43%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$190/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Tighter control over dealer and contractor participation
28.	Aspects most successful:	Helped consumers make energy conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A

ARIZONA PUBLIC SERVICE COMPANY

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise the minimum efficiency level and change the rebate amount
32.	Other comments:	Rebate incentives are also offered for load management devices

ATLANTIC CITY ELECTRIC COMPANY

1.	Name of utility:	Atlantic City Electric Company
2.	Address:	1199 Black Horse Pike Pleasantville, NJ 08232
3.	Contact person:	Joseph Skroski
4.	Phone:	609/645-4517
5.	Products included:	Residential room and central air conditioners and heat pumps
6.	Duration:	Air conditioners - in progress since 1983; heat pumps - in progress since 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Consumers, builders, landlords, small businesses, appliance dealers
10.	Rebate amounts:	Central AC and heat pumps (existing homes/businesses) - $51-68/ton to purchaser, $9-12/ton to dealer; room AC - $40/ton to purchaser, $10/ton to dealer; heat pumps (new homes/ businesses) - $60-80/ton to builder/ developer
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	Central AC - 9.5 SEER rating; heat pump - 9.0 SEER rating; room AC - 9.0 EER rating
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost and benefit from avoided energy cost; 2) amount necessary to affect purchasers; 3) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Regulatory commission
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes

ATLANTIC CITY ELECTRIC COMPANY

17.	Source of funds:	Included in rate base
18.	Annual budget:	$447,000
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) satisfy regulatory commission; 4) determine program feasibility
20.	Types of program evaluation:	Questions on application form, survey of participants, survey of dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Comparison of estimates of number of products sold and average efficiencies with and without rebates
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	None
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances

ATLANTIC CITY ELECTRIC COMPANY

29.	Problems identified in a dealer evaluation:	None
30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	None

AUSTIN, TEXAS RESOURCE MANAGEMENT DEPARTMENT

1.	Name of utility:	Austin, Texas Resource Management Department
2.	Address:	Fountain Park Plaza Building I - 3000 S. IH-35 Austin, TX 78704
3.	Contact person:	Jonathan Luden or Phil Barrett
4.	Phone:	512/441-9240, ext. 6159
5.	Products included:	Residential program - central AC, heat pumps, room AC; heat pump, heat recovery and solar water heaters; insulation, window film, and other weatherization measures Commercial program - energy-efficient fluorescent lamps, screw-in fluorescent lamps, efficient lamp ballasts, optical reflectors, occupancy sensors, other lighting retrofits, window treatments, roofing retrofits, HVAC retrofits, energy-efficient motors
6.	Duration:	Residential central and room AC - in progress since 1982; other residential - in progress since 1984; commercial HVAC and lighting - in progress since 1984, commercial motors and building envelope measures - in progress since 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes for residential program
9.	Who is eligible for a rebate payment:	All parties purchasing qualifying equipment, also dealers for residential program
10.	Rebate amounts:	Residential central AC and heat pumps - $30-245 per ton; room AC - $94-185 per ton; heat pump or heat recovery water heater - $100; solar water heater - $150-350; residential weatherization measures - depends on point ratings; dealer payment - $20; commercial HVAC - $32-189 per ton; energy-efficient fluorescent lamps - $0.75-1.75/lamp; screw-in fluores-

		cent lamps - $5; ballasts - $2.50 -12.00 per ballast; optical reflectors - $11-22; occupancy sensors - $8-16; other lighting system retrofits - $200/KW; reduced window treatments - $0.50-1.00/sq. ft.; roofing retrofits - $0.05-0.15/ sq. ft.; motors - $2/HP per percentage increase in efficiency
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes. Sliding scale in some cases
12.	Minimum efficiency requirements:	Residential central AC - 9.0 SEER rating for package units, 10.0 SEER rating for split systems; heat pumps - 9.6 SEER rating; room AC - 8.7 EER rating; commercial AC - 8.3 EER rating; chiller replacement - maximum of 0.8 KW/ton; window treatment - maximum shading coefficient of 0.5
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity costs; 2) benefit from avoided energy costs; extra first cost for qualifying equipment; 3) amount necessary to affect purchaser
14.	Non-utility organizations participating in program design and implementation:	Government agencies, manufacturers, retailers
15.	Who proposed the rebate program:	Utility and city
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Utility rate base; approval for municipal bonds has been obtained, but some legal obstacles remain
18.	Annual budget:	Residential program - $4.3 million; commercial program - $1.6 million in 1985/86
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient equipment; 3) levelize load; 4) further local economic development

AUSTIN, TEXAS RESOURCE MANAGEMENT DEPARTMENT

20.	Types of program valuation:	Surveys of participants and dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	80-90% for residential HVAC; 30-40% for C&I HVAC; 50-60% for C&I lighting program
	Basis for estimate:	Surveys of dealers and distributors
	Does the utility estimate incremental impacts:	Not until now, making an attempt to examine this in current evaluation
23.	Fraction of cost for administration:	Residential program - 9%; commercial program - 18%
24.	Annual peak demand reduction:	Residential program - 14 MW; commercial program - 5.3 MW
	Fraction of total peak demand:	1.38%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	Residential program - $310/KW; Commercial program - $210/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Better marketing and promotion for both programs, better vendor cooperation for commercial program
28.	Aspects most successful:	Helped consumers make energy conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Residential program - not enough qualifying models; commercial program - dealers need to become more involved

AUSTIN, TEXAS RESOURCE MANAGEMENT DEPARTMENT

30.	Problems identified in a consumer evaluation:	Dealers not helpful
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Residential program - raise the minimum efficiency level and change the target audience; Commercial program - add other products such as EMS systems, other lighting controls, and thermal storage
32.	Other comments:	A consultant was conducting a comprehensive program evaluation in late 1986. Minimum efficiency levels and rebate payment amounts have been increased since the programs began. The utility also offers low-interest loans for residential weatherization and mechanical system efficiency improvements.

BONNEVILLE POWER ADMINISTRATION

1.	Name of utility:	Bonneville Power Administration
2.	Address:	Post Office Box 3621 Portland, OR 97208
3.	Contact person:	Angie Quinata
4.	Phone:	503/230-5240
5.	Products included:	Heat pump and solar water heaters
6.	Duration:	10/84 - 9/87
7.	How extensive:	Pilot program offered by 11 local utilities in the Northwest; two opted not to continue program in last year
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers with electric water heating (existing homes and new construction)
10.	Rebate amounts:	$200-500; in last year $300-500
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Energy factor rating of 2.2 for heat pump water heaters
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) benefit from avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	Government agencies, appliance manufacturers, retailers' organizations, consultants
15.	Who proposed the rebate program:	BPA
16.	Was no-losers test applied in program design:	N/A
17.	Source of funds:	BPA conservation program (capital expense)
18.	Annual budget:	Approximately $2.0 million

BONNEVILLE POWER ADMINISTRATION

19.	Objectives:	1) Increase market share; 2) improve customer relations; 3) determine program feasibility; 4) test various levels of incentive and promotion
20.	Types of program evaluation:	Questions on application form, survey of dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	Less than 10% of potential market, qualifying installations in 1985 were considerably below projections
	Basis for this estimate:	Sales data
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Comparing sales in areas of the region without this program
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	Administrative costs, cost effectiveness, customer interest, rebate amount
28.	Aspects most successful:	Easy to implement, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Utilities do not provide dealers with sales leads, lack of dealers in some areas

BONNEVILLE POWER ADMINISTRATION

30.	Problems identified in a consumer evaluation:	Application process too cumbersome, rebate amount too low
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Promotional materials modified, streamline application and delivery process
32.	Other comments:	This is an experimental program involving either high or low rebates and high or low promotion, for a total of four different treatment categories. Eleven power distributors in the Northwest are participating in the pilot program with each utility assigned a specific treatment. During the first year, solar systems accounted for about 60% of the total installations. BPA is also funding performance monitoring in selected households.

CENTRAL HUDSON GAS AND ELECTRIC COMPANY

1.	Name of utility:	Central Hudson Gas and Electric Company
2.	Address:	284 South Avenue Poughkeepsie, NY 12601
3.	Contact person:	Frank Congedo
4.	Phone:	914/486-5655
5.	Products included:	Residential refrigerators, room AC, screw-in fluorescent bulbs, and low-flow showerheads
6.	Duration:	4 months during 1986
7.	How extensive:	Pilot program
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers and landlords
10.	Rebate amounts:	Refrigerators - $35; room AC - $30; screw-in fluorescent bulbs - $4; low-flow showerheads - $4
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Refrigerators - depends on the label rating (maximum 950 KWh/yr for a 16-18 cubic foot top freezer model); room AC - 7.9-9.0 EER rating depending on size
13.	Basis for setting rebate amounts:	Amount deemed sufficient to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	Consultants
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in rate base
18.	Annual budget:	$200,000
19.	Objectives:	Determine program feasibility

CENTRAL HUDSON GAS AND ELECTRIC COMPANY

20.	Types of program evaluation:	Questions on the application, survey of dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Following pilot program
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Self-report on application
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	Marketing and public relations, dealer cooperation, customer interest
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Unknown until the evaluation is completed in late 1986

CENTRAL MAINE POWER COMPANY

1.	Name of utility:	Central Maine Power Company
2.	Address:	Edison Drive Augusta, ME 04336
3.	Contact person:	Tina Jacques or Barton Stevens
4.	Phone:	207/623-3521 ext. 2637 or 2638
5.	Products included:	Residential refrigerators, freezers, RAC, and water heaters; C&I lighting and motors
6.	Duration:	Residential - pilot program 3/84 - 9/86; C&I program - one year pilot begun in early 1986
7.	How extensive:	Pilot programs in all service area
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Consumers, dealers, builders, commercial businesses, landlords, institutions
10.	Rebate amounts:	To purchaser: refrigerators - $25; freezers - $10; RAC - $5-40; resistance water heaters - $20-35; heat pump water heaters - $50; efficient motors - $6-15 per HP; efficient fluorescent lamps and ballasts - $0.60-1.50; other lighting conservation devices - based on analysis of electricity savings
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes in some cases
12.	Minimum efficiency requirements:	RAC - 7.2 EER; refrigerators, freezers, and water heaters based on label ratings; C&I rebates based on specific measures
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) avoided capacity cost; 3) avoided energy cost; 4) extra first cost for qualifying equipment

CENTRAL MAINE POWER COMPANY

14.	Non-utility organizations participating in program design and implementation:	State agencies, retailers' organizations
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in rate base
18.	Annual budget:	1985 residential program - $356,000; 1986 residential program - $200,000; 1986 C&I program - N/A
19.	Objectives:	1) Determine program feasibility; 2) reduce peak load; 3) promote energy efficient appliances; 4) reduce base load
20.	Types of program evaluation:	Questions on application form, dealer survey, quantitative evaluation of energy savings and cost effectiveness planned
21.	Frequency of program evaluation:	After pilot program is completed, residential program evaluation underway in late 1986
22.	What fraction of sales qualifies for rebates:	20-30%
	Basis for this estimate:	Comparison to all models listed in industry association directories
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	65%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A

CENTRAL MAINE POWER COMPANY

26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Application process, efficiency labels, dealer cooperation, rebates too low on some products, too many redundant subsidies
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Residential program - no

CENTRAL POWER AND LIGHT COMPANY

1.	Name of utility:	Central Power and Light Company
2.	Address:	Post Office Box 2121 Corpus Christi, TX 78403
3.	Contact person:	Dick Earnest
4.	Phone:	512/881-5687
5.	Products included:	Residential heat pumps
6.	Duration:	In progress since 9/86
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Residential consumers and home builders; HVAC dealers
10.	Rebate amounts:	Existing homes - $300-400 to owner, $50-100 to contractor/installer; new homes - $200-400 to builder or owner, $50-100 to installer
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	9.0 SEER rating
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) extra first cost for qualifying equipment; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	N/A
19.	Objectives:	1) Reduce peak load; 2) increase market share; 3) levelize load
20.	Types of program evaluation:	N/A

CENTRAL POWER AND LIGHT COMPANY

21.	Frequency of program evaluation:	Regularly after program becomes established
22.	What fraction of sales qualify for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	N/A
32.	Other comments:	Higher rebates are paid for homes that meet certain thermal performance standards. Also, the utility provides maximum size limits and limits on the amount of auxiliary resistance heating for all heat pumps on a case-by-case basis.

CITY PUBLIC SERVICE OF SAN ANTONIO

1.	Name of utility:	City Public Service of San Antonio
2.	Address:	Post Office Box 1771 San Antonio, TX 78296
3.	Contact person:	Vern Lange
4.	Phone:	512/227-3211, ext. 2558
5.	Products included:	Residential CAC, RAC, heat pumps; commercial qualify if unit is less than 5 tons
6.	Duration:	In progress since 9/83
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Any purchaser and seller of qualifying equipment
10.	Rebate amounts:	CAC and heat pump - $100-150; RAC and heat pump - $75; dealer payment - $20
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes for CAC and heat pumps
12.	Minimum efficiency requirements:	CAC - 9.0 SEER; heat pump - 8.5 SEER; RAC - 9.0 EER
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) extra first cost for qualifying equipment; 3) avoided capacity cost; 4) avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense
18.	Annual budget:	$3.2 million

CITY PUBLIC SERVICE OF SAN ANTONIO

19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) levelize load; 4) improve consumer relations
20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	First evaluation scheduled for end of 1986
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	6%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Dealer cooperation, cost-effectiveness, rebate amount
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A

CITY PUBLIC SERVICE OF SAN ANTONIO

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Rebate amount and minimum efficiency requirements might be changed

CITY WATER, LIGHT AND POWER

1.	Name of utility:	City Water, Light and Power
2.	Address:	Municipal Building Springfield, IL 62757
3.	Contact persons:	Rae Williams or Chris Robertson
4.	Phone:	217/789-2070
5.	Products included:	Residential room AC, central AC, heat pumps; commercial HVAC
6.	Duration:	In progress since 1982
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes for heat pumps
9.	Who is eligible for a rebate payment:	Any residential or commercial customer; HVAC dealers and contractors for heat pumps
10.	Rebate amounts:	Room AC - $30-50 to customer; central AC - $50-100 to customer; heat pumps - $100-250 to customer and $50-100 to dealer
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes
12.	Minimum efficiency requirements:	Room AC - 8.5 EER; central AC - 9.0 SEER; heat pumps - 8.0 SEER
13.	Basis for setting rebate amounts:	N/A
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$215,000

CITY WATER, LIGHT AND POWER

19.	Objectives:	1) Levelize load; 2) reduce peak summer load; 3) increase market share; 4) promote energy efficient appliances; 5) improve customer relations
20.	Types of program evaluation:	Questions on application, surveys of customers and dealers, quantitative evaluations of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Self-report on rebate application
23.	Fraction of cost for administration:	21%
24.	Annual peak demand reduction:	Room and central AC - 189 kW
	Fraction of total peak demand:	0.06%
	Annual kWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	No
25.	Cost per unit of peak demand reduction:	Room and central AC - $130 per kW
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	More marketing and promotion, better dealer cooperation, greater customer interest, higher rebate amounts, better understanding of the relationship to the long-term goals of the utility
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for energy-efficient appliances

CITY WATER, LIGHT AND POWER

29.	Problems identified in a dealer evaluation:	Some dealers hostile to the heat pump program, customers not interested in heat pumps
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	There will be major changes in 1987, including switching to sliding scale rebates for AC and heat pumps. The rebate amount for room and central AC will generally increase, and rebates will be provided to dealers for all of the products. Rebates to both consumers and dealers will depend on product size and efficiency. The basis for the new rebate amounts is a cost per unit of peak reduction of $120 per KW for air conditioners and the same cost per KW reduction plus one year's worth of anticipated winter revenue for heat pumps. Dealers will be eligible for rebates equal to 25% of customer air conditioner rebates and 50% of customer heat pump rebates. Changes in program promotion and administration will also be made to improve program effectiveness.
32.	Other comments:	The utility also provides rebates of up to $100 for home insulation and other weatherization measures.

COMMONWEALTH ELECTRIC COMPANY

1.	Name of utility:	Commonwealth Electric Company
2.	Address:	2421 Cranberry Highway Wareham, MA 02571
3.	Contact person:	Mort Zajac
4.	Phone:	617/291-0950 ext. 3313
5.	Products included:	Any energy conservation measure recommended as part of a RCS audit
6.	Duration:	N/A
7.	How extensive:	Full scale to all electric heating customers
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	15% of installed cost up to $150
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Five year payback criteria
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) avoided energy cost; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	N/A
19.	Objectives:	1) Reduce peak load; 2) improve customer relations
20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Evaluation is planned

22.	What fraction of sales qualifies for rebates:	Less than 10 percent
	Basis for this estimate:	Saturation of heating customers
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual kWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Low participation
27.	Aspects in need of improvement:	Customer interest
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Link to other programs providing financial assistance

CONNECTICUT LIGHT AND POWER COMPANY

1.	Name of utility:	Connecticut Light and Power Company
2.	Address:	Post Office Box 270 Hartford, CT 06141
3.	Contact person:	Karen Hodge (residential) and Kathy Thayer (commercial)
4.	Phone:	Hodge - 203/665-5762, Thayer - 203/665-3553
5.	Products included:	Residential refrigerators, C&I lighting
6.	Duration:	Refrigerators - 3 months in 1985; lighting - in progress since 3/86
7.	How extensive:	Refrigerators - pilot; lighting - full scale in CT
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Refrigerators - consumers, builders, landlords; lighting - businesses and institutions
10.	Rebate amounts:	Refrigerators - $35 with possibility of an additional bonus of up to $65 (not dependent on efficiency); lighting - $4 per screw-in fluorescents, $0.50 per energy-efficient fluorescent lamp, $2.50-5.00 per energy-efficient ballast, $50-75 per high pressure sodium or metal halide fixture replacing an incandescent. $5 for replacing an incandescent with a fluorescent fixture, and $4 and $25 respectively for replacing incandescent with a screw-in flourescent and a screw-in metal halide or sodium vapor.
11.	Does the rebate vary according to:	Equipment size - refrigerator rebates only for models between 14.5 and 20.4 cubic feet; efficiency - no except for metal halide or sodium vapor fixtures
12.	Minimum efficiency requirements:	Refrigerators - 5% most efficient models; lighting - specific products

CONNECTICUT LIGHT AND POWER COMPANY

13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) extra first cost for qualifying equipment; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	Advertising agency
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense
18.	Annual budget:	Refrigerators - $40,000; lighting - $1.5 million in 1987
19.	Objectives:	Refrigerators - 1) determine program feasibility; 2) promote energy-efficient appliances; lighting - 1) reduce peak load; 2) improve community relations; 3) promote energy-efficient equipment
20.	Types of program evaluation:	Refrigerators - questions on the application form, quantitative evaluation of energy savings and cost effectiveness; lighting - survey of dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	After refrigerator pilot program, annually for lighting
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes for refrigerators
	If so, how:	Comparison of sales between control group and pilot
23.	Fraction of cost for administration:	Refrigerators - 63%; lighting - 63%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A

CONNECTICUT LIGHT AND POWER COMPANY

	Annual KWh reduction:	Lighting N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Refrigerators - fairly satisfied; lighting - fairly satisfied
27.	Aspects in need of improvement:	Refrigerators - cost effectiveness, evaluation methodology; lighting - marketing and public relations, application process, dealer cooperation, cost effectiveness, customer interest
28.	Aspects most successful:	Refrigerators - good public relations; lighting - helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Lighting - application too cumbersome, program interferes with marketing strategy, lack of awareness
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Refrigerators - no; lighting - yes
	If so, what changes will be made:	In 1987, incentives will also be offered to lighting equipment suppliers, conversion from fluorescent to high pressure sodium and metal halide lamps will be included, rebates will be offered to new construction market, and more promotion will be done.
32.	Other comments:	The refrigerator pilot program was an experiment to see how much impact rebates could have on shifting purchasers to highly efficient models (top 5% of the

models offered). The utility collected sales data from a control area as well as the treatment area both prior to and during the rebate offer period. The results did show a difference between pilot and control shifts but not enough to justify the expense of the program compared to other utility options. Also, the majority of rebate recipients said they would have purchased the energy-efficient model even without the rebate.

CONSOLIDATED EDISON COMPANY OF NEW YORK

1.	Name of utility:	Consolidated Edison Company of New York
2.	Address:	4 Irving Place New York, NY 10003
3.	Contact person:	Peter Schulhof
4.	Phone:	212/460-6539
5.	Products included:	Residential refrigerators, room AC, central AC, fluorescent light bulbs; commercial AC
6.	Duration:	Refrigerators - 6/85-12/86; residential AC - 5/85-12/86; light bulbs - 2/86-12/86; commercial HVAC - 5/85-12/86
7.	How extensive:	All are pilot programs offered in a limited area
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential program - consumers and landlords; commercial program - small businesses
10.	Rebate amounts:	Refrigerators - $25-50; room and central AC - $72/ton; light bulbs - 40% of list price; commercial AC - $72/ton
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - no
12.	Minimum efficiency requirements:	Room AC - 9.0 EER rating; central AC - 10.0 SEER rating; light bulbs - fluorescent type; refrigerators - designated models
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) amount necessary to affect purchasers; 3) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Consulting firm
15.	Who proposed the rebate program:	Utility

CONSOLIDATED EDISON COMPANY OF NEW YORK

16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expenses
18.	Annual budget:	None because of pilot program
19.	Objectives:	Determine program feasibility
20.	Types of program evaluation:	N/A
21.	Frequency of program evaluation:	Following pilot programs, in progress
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual kWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A

CONSOLIDATED EDISON COMPANY OF NEW YORK

31.	Does the utility plan to continue the program:	N/A
	If so, what changes will be made:	N/A

DELMARVA POWER COMPANY

1.	Name of utility:	Delmarva Power Company
2.	Address:	800 King Street Post Office Box 231 Wilmington, DE 19899
3.	Contact person:	Janis Russell
4.	Phone:	302/429-3869
5.	Products included:	Residential gas furnaces boilers
6.	Duration:	9/86 - 8/87
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers with existing gas service from Delmarva Power who convert to gas for heating
10.	Rebate amounts:	$200
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	80% AFUE rating
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) amount reasonable compared to interest subsidy in financing program
14.	Non-utility organizations participating in program design and implementation:	Bank handling rebate checks
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base, funds from supplier
18.	Annual budget:	$60,000 (1986)
19.	Objectives:	1) Increase market share; 2) promote energy efficient appliances; 3) improve customer relations;

		4) determine program feasibility; 5) improve utilization of existing gas facilities
20.	Types of program evaluation:	N/A
21.	Frequency of program evaluation:	At end of program
22.	What fraction of sales qualifies for rebates:	60-70%
	Basis for this estimate:	Research
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Generally well-received by consumers and contractors
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	N/A

FLORIDA POWER & LIGHT COMPANY

1.	Name of utility:	Florida Power & Light Company
2.	Address:	Post Office Box 029100 Miami, FL 33102
3.	Contact person:	David Derthick
4.	Phone:	305/227-4320
5.	Products included:	Residential refrigerators, freezers, room AC, central AC, heat pumps, and water heaters; commercial lighting; ceiling insulation; window treatment (solar screen, solar film, awnings and shutters)
6.	Duration:	Residential program since 1982; commercial program since 1984. Dealer rebates for refrigerators, freezers and room AC were concluded in 12/85.
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Central AC and heat pumps - consumers and dealers; refrigerators, freezers, and room AC - salespersons; water heaters and commercial lighting - purchasers; window treatment - purchasers; ceiling insulation - purchasers
10.	Rebate amounts:	CAC - $38-303 to purchaser, $25 to dealer; heat pumps - $63-400 to purchaser, $50 to dealer; solar water heater - $164-400; heat pump water heater - $78-186; heat recovery water heater - $177; refrigerators, freezers, and room AC - about $3 in merchandise award credits to dealers per qualifying sale; commercial lighting - $1.00-1.50 per lamp; window treatment - up to $150; ceiling insulation - up to $300
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes; square footage and exposure - yes

FLORIDA POWER & LIGHT COMPANY

12.	Minimum efficiency requirements:	CAC - 10.0 SEER; heat pump - 9.0 SEER; room AC - 7.5 EER; refrigerators and freezers - modified California minimum standards
13.	Basis for setting rebate amounts:	Avoided capacity cost, amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	CAC and heat pumps - manufacturers; refrigerators, freezers, and RAC - retailers' organizations, governmental agencies, consumer groups; commercial lighting - retailers' organizations
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes for some programs
17.	Source of funds:	Operating cost
18.	Annual budget:	CAC and heat pumps - $15.3 million in 1985; refrigerators, freezers, and RAC - $1.2 million in 1985; water heaters - $6.6 million in 1985; commercial lighting - $600,000 in 1985
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) improve customer relations; 4) satisfy regulatory commission
20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A

FLORIDA POWER & LIGHT COMPANY

24.	Annual peak demand reduction:	CAC and heat pumps - 38.5 MW; refrigerators, freezers and RAC - 9.7 MW; water heaters - 8.0 MW; commercial lighting - 3.1 MW
	Fraction of total peak demand:	0.57%
	Annual KWh reduction:	CAC and heat pumps - 94.5 kWh; refrigerators, freezers and RAC - 30.8 million KWh; water heaters - 44.7 million kWh; commercial lighting - 18.6 Kwh
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	CAC and heat pumps - very satisfied; refrigerators, freezers, and RAC - very satisfied; water heaters - fairly satisfied; commercial lighting - very satisfied; ceiling insulation and window treatment - satisfied
27.	Aspects in need of improvement:	Complexity, dealer cooperation in general; marketing and customer interest for water heaters only
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Dealer program for refrigerators, freezers, and RAC - application too cumbersome, dealers confused, program interferes with marketing strategy
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	CAC and heat pumps - yes through 1987; refrigerators, freezers, and RA (dealer program) - no; water heaters - yes; commercial lighting - yes; ceiling - yes; window - yes

32. Other comments:

The appliance incentives for dealers were halted in part because of the perceived success of the program in shifting the market to more efficient models. By 1985, relatively few non-qualifying models were being manufactured and the utility decided to stop the program rather than raise the minimum efficiency requirements.

FP&L also provides rebates for ceiling insulation ($3.4 million in 1985), window film ($2.0 million in 1985), and low-cost retrofit measures ($2.7 million in 1985).

GAINESVILLE REGIONAL UTILITIES

1.	Name of utility:	Gainesville Regional Utilities
2.	Address:	Post Office Box 490 Gainesville, FL 32602
3.	Contact person:	Mary Anne Westphal
4.	Phone:	904/374-2833
5.	Products included:	Residential refrigerators and heat pumps
6.	Duration:	Heat pumps - in progress since 1983; refrigerators - in progress since 1984
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers, landlords, community groups
10.	Rebate amounts:	Refrigerator - $40; heat pump - $200-240
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes for heat pumps
12.	Minimum efficiency requirements:	Heat pumps - 8.2 SEER; requirements: refrigerators based on label ratings
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) amount necessary to affect purchasers; 3) avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in the rate base and as operating expense
18.	Annual budget:	$17,500
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) satisfy regulatory commission

GAINESVILLE REGIONAL UTILITIES

20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	First in progress
22.	What fraction of sales qualifies for rebates:	20-40%
	Basis for this estimate:	Estimate
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	40%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Refrigerator program - fairly satisfied; heat pump program - not satisfied
27.	Aspects in need of improvement:	Refrigerator - dealer cooperation, complexity; heat pumps - application process, efficiency labels, dealer cooperation, customer interest, rebate amount, restrictiveness
28.	Aspects most successful:	Easy to implement, good public relations
29.	Problems identified in a dealer evaluation:	Refrigerator program evaluation - inhibits quick sale of products, energy efficiency labels confusing, dealers confused, not enough qualifying models, program interferes with marketing strageties

GAINESVILLE REGIONAL UTILITIES

30.	Problems identified in a consumer evaluation:	Refrigerator program - qualifying models not readily available, efficiency labels too confusing, dealers not helpful or informed
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Refrigerator - raise the minimum efficiency level; heat pump - raise the minimum efficiency level, increase the rebate amount and expand the target audience
32.	Other comments:	Preliminary results show that the refrigerator rebate program is cost effective. The utility also offers rebates for window film, solar window screens, awnings, shutters, caulking, and weatherstripping.

GEORGIA POWER COMPANY

1.	Name of utility:	Georgia Power Company
2.	Address:	Post Office Box 4545 Atlanta, GA 30302
3.	Contact person:	Jim Smith or Gary Johnson
4.	Phone:	404/526-7399 or 526-6774
5.	Products included:	Residential heat pumps
6.	Duration:	N/A
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - only if builder; seller - yes
9.	Who is eligible for a rebate payment:	Dealers and builders
10.	Rebate amounts:	Dealers - $50-350 for new construction, $150-350 for existing homes; builders - $50-150
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	8.0 SEER, 1.8 COP ratings. In new construction, homes must also meet insulation standards
13.	Basis for setting rebate amounts:	1) Benefit from added revenue; 2) benefit from avoided capacity; 3) amount deemed sufficient to affect purchasers
14.	Non-utility organizations participated in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	$1.3 million
19.	Objectives:	1) Increase market share; 2) levelize load; 3) promote energy efficient appliances; 4) reduce peak load

GEORGIA POWER COMPANY

20.	Types of program evaluation:	Quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	N/A
22.	What fraction of sales qualifies for rebates:	60-70%
	Basis for this estimate:	Sales reports from dealers
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Sales forecasts without program
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	None
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances, increased electricity sales
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	None

32. Other comments:

This program leads to greater KWh sales by stimulating the sale of heat pumps.

GULF POWER COMPANY

1.	Name of utility:	Gulf Power Company
2.	Address:	Post Office Box 1151 Pensacola, FL 32520
3.	Contact person:	Charles Davis
4.	Phone:	904/434-8560
5.	Products included:	Residential central AC; heat pump, solar, heat recovery water heaters, or some other form of alternate source water heating
6.	Duration:	In progress since 4/81
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	Single family - $300; multi-family- $150
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Customer must install a CAC with minimum SEER of 8.5 or heat pump with minimum SEER of 7.5 and a solar, heat pump, heat recovery water heater, or some other form of alternate source water heating
13.	Basis for setting rebate amounts:	1) Extra first cost for qualifying equipment; 2) amount necessary to affect purchase decisions; 3) avoided capacity cost; 4) avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes

GULF POWER COMPANY

17.	Source of funds:	Conservation cost recovery clause (similar to fuel cost recovery mechanisms)
18.	Annual budget:	$166,000 in 1985
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) increase market share of efficient water heating systems
20.	Types of program evaluation:	Survey of participants, quantitative evaluations of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Quarterly
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	1%
24.	Annual peak demand reduction:	.165 MW
	Fraction of total peak demand:	.01%
	Annual KWh reduction:	1.38 million kWh (all installations)
	Fraction of total kWh use:	0.02%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$100/kW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Marketing and public relations, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	None

GULF POWER COMPANY

30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Increase the minimum efficiency level for qualification

GULF STATES UTILITIES

1.	Name of utility:	Gulf States Utilities
2.	Address:	Post Office Box 2951 Beaumont, TX 77704
3.	Contact person:	Mike Morgan
4.	Phone:	409/838-6631 ext. 4576
5.	Products included:	Residential central and window heat pumps and heat pump water heaters; commercial heat pumps and heat pump water heaters
6.	Duration:	Residential heat pumps - in progress since 1/84; commercial heat pumps - in progress since 1/85. Rebate payments temporarily suspended in 1987.
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Residential consumers, home builders, businesses, appliance dealers
10.	Rebate amounts:	Residential heat pump program - customer - $125-200, builder - $100, dealer - $100; heat pump water heaters - purchaser and dealer - $100; commercial program - customer - $25-40/ton, dealer - $20/ton; heat pump water heaters - customer - $125-400, dealer - $50-100
11.	Does the rebate vary according to:	Equipment size - residential program - no, commercial program - yes; efficiency - no
12.	Minimum efficiency requirements:	Central heat pump - 8.5 SEER rating; window heat pump - 8.0 SEER rating
13.	Basis for setting rebate amounts:	1) Value of additional revenue received in first year; 2) amount necessary to affect purchasers; 3) arbitrary amount; 4) benefit from avoided capacity cost

GULF STATES UTILITIES

14.	Non-utility organizations participating in program design and implementation:	Manufacturers' or retailers' organizations, consumer groups
15.	Who proposed the rebate program:	Consumer group
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	Residential program - $300,000; commercial program - $150,000
19.	Objectives:	1) Increase market share and build winter load; 2) promote energy efficient equipment; 3) reduce peak load
20.	Types of program evaluation:	Survey of participants and dealers quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Twice per year
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes for the residential program
	If so, how:	Based on estimates of what would have happened in the marketplace if rebates were not offered
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	Residential program - 0.5 MW; commercial program - 0.8 MW
	Fraction of total peak demand:	0.02%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A

GULF STATES UTILITIES

25.	Cost per unit of peak demand reduction:	Residential program - $600/KW; commercial program - $200/KW
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Cost effectiveness, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions
29.	Problems identified in a dealer evaluation:	Rebate amount too low
30.	Problems identified in a consumer evaluation:	Application process too cumbersome, dealers uninformed on energy efficiency, energy efficiency not important
31.	Does the utility plan to continue the program:	Yes, if funds are available (utility is experiencing a financial crisis)
	If so, what changes will be made:	The minimum efficiency level may be increased and the rebate may be changed
32.	Other comments:	Rebates are paid to customers replacing a fossil fuel heating system or to builders installing heat pumps in new construction. In cases where a heat pump replaces electric resistance heat, only the dealer is eligible for a rebate.

IDAHO POWER COMPANY

1.	Name of utility:	Idaho Power Company
2.	Address:	Post Office Box 70 Boise, ID 83707
3.	Contact person:	John Wennstrom
4.	Phone:	208/383-2521
5.	Products included:	Residential solar and heat pump water heaters
6.	Duration:	1982-1985
7.	How extensive:	Pilot program in all service territory
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	20% of installed cost
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - no
12.	Minimum efficiency requirements:	Any solar or heat pump water heater sized to meet at least 50% of water heating load
13.	Basis for setting rebate amounts:	Benefit from avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	Regulatory commission
15.	Who proposed the rebate program:	Regulatory commission
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	About $40,000 per year on average
19.	Objectives:	1) Determine program feasibility; 2) conduct research on the performance of alternative water heaters
20.	Types of program evaluation:	Questions on application form, survey of applicants, quantitative evaluation of energy savings and cost effectiveness

IDAHO POWER COMPANY

21.	Frequency of program evaluation:	Three studies completed
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Field monitoring of the performance of qualifying systems
23.	Fraction of cost for administration:	74%
24.	Annual peak demand reduction:	Negligible
	Fraction of total peak demand:	Negligible
	Annual KWh reduction:	132,000 kWh
	Fraction of total KWh use:	Negligible
	Was the savings target reached:	No
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Reduce administrative costs, increase dealer cooperation, improve cost effectiveness, increase customer interest
28.	Aspects most successful:	Helped consumers make energy conscious decisions, good public relations
29.	Problems identified in a dealer evaluation:	Rebate program inhibits quick sale, application too cumbersome, program interferes with marketing strategy
30.	Problems identified in a consumer evaluation:	Poor economic feasibility, poor equipment reliability
31.	Does the utility plan to continue the program:	No, program was discontinued

IDAHO POWER COMPANY

32. Other comments:	Only 52 solar or heat pump water heaters were installed in three years, considerably less than the target of 120 installations. Solar water heaters were much more popular than heat pumps in spite of greater cost effectiveness for the latter. The fixed percentage rebate was believed to raise retail costs and serve as a disincentive to lower cost heat pump water heaters.

IOWA POWER AND LIGHT COMPANY

1.	Name of utility:	Iowa Power and Light Company
2.	Address:	Post Office Box 657 Des Moines, IA 50309
3.	Contact person:	A. K. Fulton
4.	Phone:	515/281-2202
5.	Products included:	Residential heat pumps, portable electric heaters
6.	Duration:	Heat pumps - 1982-86; portable heaters - 1982-85
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, small businesses
10.	Rebate amounts:	Heat pumps - $300; portable heater - $5
11.	Does the rebate vary according to:	Equipment size - no; efficiency - 9 SEER minimum on heat pumps
12.	Minimum efficiency requirements:	Heat pumps - 9.0 SEER
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) amount necessary to affect purchasers; 3) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Advertising agency
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	$90,000
19.	Objectives:	1) Levelize load; 2) increase market share; 3) promote energy efficient equipment

IOWA POWER AND LIGHT COMPANY

20.	Types of program evaluation:	Survey of participants
21.	Frequency of program evaluation:	First evaluation underway
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, stimulated market for efficient heat pumps
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	None given

IOWA SOUTHERN UTILITIES

1.	Name of utility:	Iowa Southern Utilities
2.	Address:	300 Sheridan Avenue Centerville, IA 52544
3.	Contact person:	Dean Ekstrom
4.	Phone:	515/437-4400
5.	Products included:	Residential electric water heaters
6.	Duration:	In progress since 10/86
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers, builders, landlords
10.	Rebate amounts:	$25-100
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - no
12.	Minimum efficiency requirements:	Depends on label rating
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) benefit from avoided energy costs
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	N/A
19.	Objectives:	1) Levelize load; 2) promote efficient appliances; 3) determine program feasibility; 4) increase market share
20.	Types of program evaluation:	Questions on application form, survey of applicants, survey of dealers

IOWA SOUTHERN UTILITIES

21.	Frequency of program evaluation:	First evaluation in late 1987
22.	What fraction of sales qualifies for rebates:	0-10%
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	Dealer cooperation
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	N/A

JERSEY CENTRAL POWER AND LIGHT COMPANY

1.	Name of utility:	Jersey Central Power and Light Company
2.	Address:	310 Madison Avenue Morristown, NJ 07960
3.	Contact person:	Leigh Kline
4.	Phone:	201/455-8337
5.	Products included:	Residential room AC, central AC, heat pumps, and water heaters; commercial and industrial HVAC, lighting, and EMS equipment
6.	Duration:	All currently in progress; residential began in 1983; commercial lighting began in 1983, HVAC in 1984, EMS program began in 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential programs - consumers and builders; commercial programs - purchasers
10.	Rebate amounts:	Residential and commercial AC and heat pumps - $48-120 per ton of capacity; room AC - $36-84 per ton of capacity; solar water heaters $500; heat pump water heaters - $250; C&I lighting - $100 per KW saved; commercial EMS equipment - up to $10,000
11.	Does the rebate vary according to:	Equipment size - yes in most cases; efficiency - yes for AC and lighting
12.	Minimum efficiency requirements:	Residential central AC - 9.5 SEER heat pump - 8.5 SEER, room AC - 9.0 EER; C&I lighting - 34 watt and 60 watt fluorescents, compact fluorescents, metal halide and high pressure sodium lamps, energy efficient ballasts
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) extra first cost for qualifying equipment; 3) amount necessary to affect purchasers

JERSEY CENTRAL POWER AND LIGHT COMPANY

14.	Non-utility organizations participating in program design and implementation:	Government agencies, retailers, consulting firms
15.	Who proposed the rebate program:	Utility and regulatory commission
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in rate base
18.	Annual budget:	Residential programs - $2.0 million in 1986 (less than in 1985); commercial programs - $1.6 million in 1986 (greater than in 1985)
19.	Objectives:	1) Reduce peak load; 2)satisfy regulatory commission; 3) promote energy efficient appliances and improve customer relations
20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Periodically
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Gross savings are reduced by an arbitrary amount in order to estimate program impacts only
23.	Fraction of cost for administration:	Residential - 15%; commercial AC and lighting - 27%
24.	Annual peak demand reduction:	Residential - 5.5 MW in 1985; commercial AC and lighting - 2.5 MW in 1985
	Fraction of total peak demand:	0.24% in 1985
	Annual kWh reduction:	Residential - 7.1 million KWh in 1985; commercial AC and lighting - 6.7 million KWh in 1985
	Fraction of total KWh use:	0.10% in 1985

JERSEY CENTRAL POWER AND LIGHT COMPANY

	Was the savings target reached:	Yes for residential AC and commercial lighting; no for commercial AC
25.	Cost per unit of peak demand reduction:	Residential - $550/KW; commercial - $205/KW
26.	Overall satisfaction:	Residential AC, commercial lighting, and solar water heaters - very satisfied; commercial AC - fairly satisfied
27.	Aspects in need of improvement:	Residential AC - application process, cost effectiveness, rebate amount; residential water heaters - admininstrative costs, application process, dealer cooperation; commercial AC - administrative costs, customer interest, and the rebate amount; commercial EMS - administrative costs, marketing, and program complexity; commercial lighting - administrative costs and dealer cooperation
28.	Aspects most successful:	Residential programs - easy to implement, helped consumers make energy conscious decisions, good public relations; commercial programs - helped consumers make energy-conscious decisions, good public relations
29.	Problems identified in a dealer evaluation:	AC programs - not enough qualifying models; residential water heaters - application process too cumbersome
30.	Problems identified in a consumer evaluation:	Residential programs - rebate processing too slow; commercial programs - rebate amount too low
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Residential AC - increase minimum efficiency level, change the rebate amount; commercial AC and lighting - change the amount and type of rebate. Also, rebates for energy-efficient motors will begin in 1987

LINCOLN ELECTRIC SYSTEM

1.	Name of utility:	Lincoln Electric System
2.	Address:	Post Office Box 80869 Lincoln, NE 68501
3.	Contact person:	Harold Simmons
4.	Phone:	402/473-3278
5.	Products included:	Residential heat pumps, furnaces, water heaters
6.	Duration:	Began in June, 1982
7.	How extensive:	Full-scale, all service area
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Any LES residential customer with proof of purchase and installation of qualifying product
10.	Rebate amounts:	Heat pump with electric back-up - $100; heat pump with non-electric back-up - $200; electric water heater - $50-100
11.	Does the rebate vary according to:	Equipment size - yes for electric water heater only; efficiency - no; load management control required on the hot water heater
12.	Minimum efficiency requirements:	Air-source heat pump - 7.5 SEER and 6.0 HSPF; water-source heat pump - 8.0 SEER and 2.8 COP; electric water heater - 70% energy factor
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) extra cost for qualifying equipment; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes

LINCOLN ELECTRIC SYSTEM

17.	Source of funds:	1) Included in the rate base; 2) operating expense
18.	Annual budget:	$400,000
19.	Objectives:	1) Levelize load; 2) promote energy efficient equipment; 3) further local economic development; 4) improve community relations
20.	Types of program evaluation:	Survey of dealers; quantitative evaluations of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	20-30%
	Basis for this estimate:	Market surveys
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	20%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Dealer cooperation; rebate amount
28.	Aspects most successful:	Helps consumers make energy-conscious decisions; improved customer satisfaction; good public relations; stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Dealers confused; program interferes with marketing strategy

LINCOLN ELECTRIC SYSTEM

30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Different rebate amount

MADISON GAS AND ELECTRIC COMPANY

1.	Name of utility:	Madison Gas and Electric Company
2.	Address:	Post Office Box 1231 Madison, WI 53701
3.	Contact person:	Michael Powers
4.	Phone:	608/252-7995
5.	Products included:	Gas furnaces, boilers, and water heaters
6.	Duration:	Ongoing since 1985
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, landlords, small businesses, and community groups who convert to gas space or water heating
10.	Rebate amounts:	Furnaces and boilers - $150; water heaters - $50
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Furnaces - 83% AFUE rating; boilers - 78% AFUE rating; water heaters - ASHRAE standard 90
13.	Basis for setting rebate amounts:	Benefit from additional gas sales
14.	Non-utility organizations participating in program design and implementation:	Consulting firm
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$95,000
19.	Objectives:	1) Increase market share; 2) promote energy efficient appliances; 3) improve community relations; 4) determine program feasibility

MADISON GAS AND ELECTRIC COMPANY

20.	Types of program evaluation:	Survey of participants, survey of particular customer groups, survey of dealers, quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Based on surveys
23.	Fraction of cost for administration:	35%
24.	Annual peak demand reduction:	Not relevant
	Fraction of total peak demand:	Not relevant
	Annual KWh reduction:	Not relevant
	Fraction of total KWh use:	Not relevant
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	Not relevant
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Application process, dealer participation
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Not enough qualifying models at one point
30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes

	If so, what changes will be made:	Different target audience
32.	Other comments:	This is a program to encourage conversion from oil-fired to gas-fired space and water heating. Cooperative advertising is provided to participating dealers.

METROPOLITAN EDISON COMPANY

1.	Name of utility:	Metropolitan Edison Company
2.	Address:	Post Office Box 542 Reading, PA 19640
3.	Contact person:	Weldon Spangler
4.	Phone:	215/921-6257
5.	Products included:	Commercial and industrial lighting, motors, and EMS equipment
6.	Duration:	Lighting - in progress since 1984; motors - in progress since 1985; EMS - in progress since 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Business, industrial, and government customers
10.	Rebate amounts:	Efficient lighting equipment - $100/KW of load reduction; EMS and other load leveling equipment - $50/KW of peak load reduction except for $100/KW for schools; motors - $10/HP for energy efficient motors
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	Lighting - energy-efficient fluorescent, metal halide or sodium lamps, motors - energy-efficient type
13.	Basis for setting rebate amounts:	1) Avoided peak capacity cost; 2) avoided energy cost; 3) extra first cost for qualifying equipment; 4) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes

METROPOLITAN EDISON COMPANY

17.	Source of funds:	Operating expense
18.	Annual budget:	Approximately $300,000
19.	Objectives:	1) Reduce peak load; 2) levelize load; 3) promote energy efficient equipment; 4) improve customer relations
20.	Types of program evaluation:	Survey of dealers, quantitative evaluation of energy savings
21.	Frequency of program evaluation:	Annually, but none completed so far
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	3.0 MW
	Fraction of total peak demand:	0.18%
	Annual KWh reduction:	10.8 million kWh
	Fraction of total KWh use:	0.13%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	Approx. $100/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	Easy to implement, improved customer satisfaction, good public relations
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes

	If so, what changes will be made:	Changes will be made, but not available at this time
32.	Other comments:	In 1986, the utility switched from rebates on particular lighting products to rebates on the basis of KW savings.

MIDWEST ELECTRIC COOPERATIVE, INC.

1.	Name of utility:	Midwest Electric Cooperative, Inc.
2.	Address:	Post Office Box 10 St. Mary's, OH 45885
3.	Contact person:	Rick Gerdeman
4.	Phone:	419/394-4110
5.	Products included:	Residential heat pumps
6.	Duration:	In progress
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	$400
11.	Does the rebate vary according to:	Equiment size - no; efficiency - no
12.	Minimum efficiency requirements:	8.0 SEER rating, 2.5 COP rating
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) benefit from avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	Manufacturers and retailers organizations
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	$7,000
19.	Objectives:	1) Offer consumers better efficiency; 2) reduce peak load; 3) increase market share
20.	Types of program evaluation:	Surveys of participants, all customers, and dealers; quantitative evaluation of energy savings and cost effectiveness

MIDWEST ELECTRIC COOPERATIVE, INC.

21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	N/A
	If so, what changes will be made:	None

NEVADA POWER COMPANY

1.	Name of utility:	Nevada Power Company
2.	Address:	Post Office Box 230 Las Vegas, NV 89151
3.	Contact person:	Joe Mills
4.	Phone:	702/367-5114
5.	Products included:	Residential heat pumps, commercial lighting
6.	Duration:	Heat pumps - in progress since 10/83; lighting - in progress since 7/86.
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Heat pumps - builder or resident in the new home market (low-cost financing is provided when a heat pump is installed in an existing home); lighting - all commercial customers
10.	Rebate amounts:	Heat pumps - $50-210 per ton depending on efficiency; efficient fluorescent lamps - 40% of lamp cost not to exceed $200 per KW saved; optical reflectors - $12 per fixture
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes, sliding scale for heat pumps
12.	Minimum efficiency requirements:	Heat pump rebates - 9.5 SEER rating for split systems, 9.0 SEER rating for package units; lighting - specified measures
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) extra first cost for qualifying equipment; 3) avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility

NEVADA POWER COMPANY

16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	$1.8 million for both rebate and financing programs for heat pumps
19.	Objectives:	1) Reduce peak load; 2) levelize load; 3) increase market share; 4) promote energy efficient appliances
20.	Types of program evaluation:	Survey of distributors, quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	Heat pumps - 40-50%
	Basis for this estimate:	HVAC distributor survey
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	14%
24.	Annual peak demand reduction:	6.2 MW from heat pumps
	Fraction of total peak demand:	0.38%
	Annual KWh reduction:	2.4 million kWh from heat pumps
	Fraction of total KWh use:	0.04%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	Heat pumps - $275/kW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Marketing and public relations, customer interest
28.	Aspects most successful:	Stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	None

NEVADA POWER COMPANY

30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise the minimum efficiency level for heat pumps, change the rebate amount
32.	Other comments:	The heat pump program involves rebates for the new home market and low interest financing for replacement in existing home market. Nevada Power also provides free heat pump servicing for five years.

NEW ENGLAND ELECTRIC

1.	Name of utility:	New England Electric
2.	Address:	25 Research Drive Westborough, MA 01581
3.	Contact person:	Ken Alton
4.	Phone:	617/366-9011, Ext. 2641
5.	Products included:	Residential refrigerators; commercial lighting products
6.	Duration:	6-9 months during 1986
7.	How extensive:	Pilot programs offered in a limited area by particular member utilities
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential refrigerators - consumers, builders, institutions; Commercial lighting - businesses and institutions
10.	Rebate amounts:	Refrigerators - $100; energy-efficient fluorescent lamps - $1.00-2.00 per lamp; screw-in fluorescent lamps - $5 per lamp; conversion to sodium and metal halide lamps - $30 per fixture
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes, for efficient fluorescent lamps only
12.	Minimum efficiency requirements:	Refrigerators - California minimum efficiency standards; lighting - specific products
13.	Basis for setting rebate amounts:	Residential refrigerators - 1) benefit from avoided capacity cost; 2) amount necessary to affect purchasers; 3) benefit from avoided energy cost; 4) extra first cost for qualifying equipment; commercial lighting - N/A
14.	Non-utility organizations participating in program design and implementation:	Refrigerators - consumer groups; lighting - manufacturers
15.	Who proposed the rebate program:	Utility

NEW ENGLAND ELECTRIC

16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in rate base
18.	Annual budget:	Refrigerators - $100,000; lighting - $70,000
19.	Objectives:	Refrigerators - 1) promote energy efficient appliances, 2) reduce peak load, 3) reduce base load, 4) determine program feasibility; lighting - 1) determine program feasibility
20.	Types of program evaluation:	Surveys of participants and dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Following pilot programs
22.	What fraction of sales qualifies for rebates:	Refrigerators - 40-50%; lighting - N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	Refrigerators - 15%; lighting - N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	Refrigerators - 294,000; lighting - N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Refrigerators - very satisfied; lighting - N/A

NEW ENGLAND ELECTRIC

27.	Aspects in need of improvement:	Refrigerators - application process needs to be improved, use of efficiency labels is confusing, cost effectiveness must be justified, rebate amount should be changed to a sliding scale, program should be kept simple; lighting - N/A
28.	Aspects most successful:	Refrigerators -- stimulated market for efficient appliances; lighting -- N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Refrigerators - N/A until evaluation completed; lighting - yes
	If so, what changes will be made:	Energy efficient ballasts will be added to the lighting program

NEW YORK STATE ELECTRIC AND GAS CORPORATION

1.	Name of utility:	New York State Electric and Gas Corporation
2.	Address:	4500 Vestal Parkway Binghamton, NY 13903
3.	Contact person:	J. T. Roth
4.	Phone:	607/729-2551 ext. 2568
5.	Products included:	Residential refrigerators, room AC, and central AC
6.	Duration:	Refrigerators - 9/85-9/86; AC - 5/86-10/86
7.	How extensive:	Experimental pilot programs with different rebate offers in different areas
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Refrigerators - residential consumers; AC - any purchaser
10.	Rebate amounts:	Refrigerators - $35-50; room AC - $25-125; central AC - $250-400
11.	Does the rebate vary according to:	Equipment size - yes for room AC only; efficiency - yes for room AC only
12.	Minimum efficiency requirements:	Refrigerators - 20-30% most efficient qualify; room AC - 7.8 EER for smaller units and 8.7 EER for larger units; central AC- 10.0 SEER
13.	Basis for setting rebate amounts:	1) Extra first cost for qualifying equipment; 2) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	Utility commission, manufacturers, retailers, consumer groups, consultants
15.	Who proposed the rebate program:	Refrigerators - utility; AC - utility and utility commission
16.	Was no-losers test applied in program design:	No

NEW YORK STATE ELECTRIC AND GAS CORPORATION

17.	Source of funds:	Part included in the rate base, part as operating expense
18.	Annual budget:	$1.0 million
19.	Objectives:	1) Satisfy regulatory commission; 2) determine program feasibility; 3) promote energy efficient appliances; 4) reduce peak load
20.	Types of program evaluation:	Questions on application form, survey of participants, survey of dealers, quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	Following pilot program
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Planned
	If so, how:	Surveys of participants and dealers, data on typical efficiencies before and after rebates were offered, use of control group in the refrigerator experiment
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Refrigerators - fairly satisfied; AC - very satisfied
27.	Aspects in need of improvement:	Refrigerators - cost effectiveness, customer interest, program complexity; AC - marketing and program complexity

NEW YORK STATE ELECTRIC AND GAS CORPORATION

26. Aspects most successful:	Refrigerators - stimulated market for efficient appliances; AC - helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29. Problems identified in a dealer evaluation:	Not enough qualifying models, application too cumbersome
30. Problems identified in a consumer evaluation:	Energy efficiency not important
31. Does the utility plan to continue the program:	Refrigerators - no; AC - yes
If so, what changes will be made:	AC - standardize the rebate amount
32. Other comments:	This was an experimental program testing different rebate amounts in different geographic areas. For refrigerators, there was an information and promotion (no rebate) area along with low and high rebate areas. For air conditioners, there were low, medium and high rebate areas.

NIAGARA MOHAWK POWER CORPORATION

1.	Name of utility:	Niagara Mohawk Power Corporation
2.	Address:	300 Erie Boulevard West Syracuse, NY 13202
3.	Contact person:	Theresa Flaim
4.	Phone:	315/428-6736
5.	Products included:	Residential refrigerators, freezers, RAC, and water heaters; industrial motors
6.	Duration:	6-12 months during 1986-87
7.	How extensive:	Pilot programs limited to selected customers
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, industries
10.	Rebate amounts:	Refrigerators - $10-120; freezers - $10-100; RAC - $10-84; electric water heater - $20-120; industrial motors - $25 per HP
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	High efficiency appliances and motors; qualification for residential products based on the label ratings
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) extra first cost for qualifying equipment; benefit to utility from avoided energy costs
14.	Non-utility organizations participating in program design and implementation:	Manufacturers, repair shops
15.	Who proposed the rebate program:	Utility, regulatory commission
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense as part of the conservation initiative mandated by the utility commission

NIAGARA MOHAWK POWER CORPORATION

18.	Annual budget:	Appliance program - approximately $1.0 million; motor program - $200,000
19.	Objectives:	1) Promote efficient equipment; 2) satisfy regulatory commission; 3) improve customer relations; 4) determine program feasibility
20.	Types of program evaluation:	Surveys of participants and non-participants; quantitative evaluation of energy savings
21.	Frequency of program evaluation:	Following pilot programs
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Planned
	If so, how:	Based on surveys of purchase behavior of participants and a control group
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A

NIAGARA MOHAWK POWER CORPORATION

31.	Does the utility plan to continue the program:	Motors - no
	If so, what changes will be made:	Change rebate amount
32.	Other comments:	The residential program is a carefully controlled experiment involving a treatment group receiving the high rebate offer, treatment group receiving a low rebate offer, and a control group. The experiment will be finished in mid-1987.

NORTHERN INDIANA PUBLIC SERVICE COMPANY

1.	Name of Utility:	Northern Indiana Public Service Company
2.	Address:	5265 Hohman Avenue Hammond, IN 46320
3.	Contact person:	Dale Williams
4.	Phone:	219/853-5328
5.	Products included:	High efficiency outdoor lights for residential applications
6.	Duration:	Six months during 1986
7.	How extensive:	Pilot program in limited area
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers and property owners
10.	Rebate amounts:	$10 per lamp
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Must be either mercury vapor, high pressure sodium, or low pressure sodium type lamp; rebate varies by type
13.	Basis for setting rebate amounts:	Amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	$14,000
19.	Objectives:	Improve customer relations

NORTHERN INDIANA PUBLIC SERVICE COMPANY

20.	Types of program evaluation:	Surveys of applicants and all customers
21.	Frequency of program evaluation:	Following pilot program, to be completed in 1987
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Marketing and public relations, customer interest
28.	Aspects most successful:	Easy to implement, good public relations, improved customer satisfaction
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	More effort to interest customers in the program

NORTHERN STATES POWER COMPANY

1.	Name of utility:	Northern States Power Company
2.	Address:	414 Nicollet Mall Minneapolis, MN 55401
3.	Contact person:	Marvin Innes
4.	Phone:	612/330-6780
5.	Products included:	Residential refrigerators, freezers, room AC, central AC, heat pumps, and water heaters; C&I HVAC, lighting, and motors
6.	Duration:	Residential program was begun 3/82 and is still in progress (except for freezers); C&I program was begun in 1985
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Those purchasing qualifying equipment
10.	Rebate amounts:	Residential program: refrigerators - $15-30; room AC - $15-150; central AC - $30-400; electric water heaters - $10-35. C&I program: efficient fluorescent lamps - $0.25-0.50 per lamp; efficient ballasts - $2; other lighting system conversions - $200/KW of demand reduction up to 50% of the equipment cost; efficient chillers and package AC systems - $10 per ton; efficient motors - $2-7 per HP
11.	Does the rebate vary according to:	Equipment size - yes for most products; efficiency - yes for residential refrigerators, room central AC, water heaters, and lighting system conversions.
12.	Minimum efficiency requirements:	Residential refrigerators and water heaters - depends on label rating, room AC - 8.5 EER rating, central AC - 9.0 SEER rating, package AC

		systems - 8.2- 9.0 EER rating, condensing units - 10.0-10.5 EER rating, comm. chillers - 0.62 KW/ton maximum power input, motors - NEMA nominal efficiency ratings which depend on size.
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) extra first cost for qualifying equipment; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	Government agencies, appliance manufacturers, dealers
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	Residential program - $2.1 million in 1986; C&I program - $1.7 million in 1986
19.	Objectives:	1) Reduce peak load; 2) reduce base load; 3) promote energy efficient appliances; 4) satisfy regulatory commission
20.	Types of program evaluation:	Surveys of participants, all customers, and dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	Residential program - 50-60%; C&I lighting - 50-60%; C&I motors - 10-20%; C&I chillers - 80-90%
	Basis for this estimate:	Surveys of dealers and distributors
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Surveys of dealers and distributors before and after program began

NORTHERN STATES POWER COMPANY

23.	Fraction of cost for administration:	Residential program - 19%
24.	Annual peak demand reduction:	Residential program - 5.9 MW; C&I program goal - 12.9 MW
	Fraction of total peak demand:	0.31%
	Annual KWh reduction:	Residential program - 6.14 million KWh; C&I program - N/A
	Fraction of total KWh use:	Residential program - 0.02%
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	Residential program - $355/KW, C&I program - $132/KW
26.	Overall satisfaction:	Residential program - very satisfied; C&I chillers and AC - very satisfied; C&I lighting - fairly satisfied; C&I motors - not satisfied
27.	Aspects in need of improvement:	Application process, cost effectiveness for C&I motors program
28.	Aspects most successful:	All programs except C&I motors - helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for energy efficient appliances
29.	Problems identified in a dealer evaluation:	Residential program - dealers confused, rebate amount too low
30.	Problems identified in a consumer evaluation:	Application process too cumbersome
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise minimum efficiency levels for the residential program
32.	Other comments:	NSP completed a thorough evaluation of its residential rebate program in 1983. This study examined the issues of total sales of efficient

models and incremental savings resulting from the incentive program. Program impact and cost-effectiveness is updated annually. The C&I program was expanded during 1986.

OKLAHOMA GAS AND ELECTRIC COMPANY

1.	Name of utility:	Oklahoma Gas and Electric Company
2.	Address:	321 N. Harvey Street Oklahoma City, OK 73102
3.	Contact person:	Richard Banks
4.	Phone:	405/272-3580
5.	Products included:	Residential room AC, central AC, heat pumps insulation, storm windows, heat recovery and solar water heaters
6.	Duration:	In progress since 1982
7.	How extensive:	All service areas
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	$200 per kW of demand reduction, relative to an AC or heat pump with an SEER rating of 8.0.
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	Central AC and heat pumps - 8.0 SEER
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity; 2) extra first cost for qualifying equipment; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	No
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$1.2 million
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances;

		3) improve customer relations; 5) levelize load
20.	Types of program evaluation:	Quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	15%
24.	Annual peak demand reduction:	8.64 MW
	Fraction of total peak demand:	0.19%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$140 per kW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Administrative costs, marketing and public relations, application process, dealer cooperation, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes

	If so, what changes will be made:	N/A
32.	Other comments:	OG&E also provides rebates to new home buyers who meet certain thermal integrity and HVAC efficiency standards

ORANGE AND ROCKLAND UTILITIES

1.	Name of utility:	Orange and Rockland Utilities
2.	Address:	One Blue Hill Plaza Pearl River, NY 10965
3.	Contact person:	Toni Veraldi
4.	Phone:	914/577-2481
5.	Products included:	Residential room AC, central AC, heat pumps, and fluorescent lighting
6.	Duration:	AC and heat pumps - in progress since 1983; lighting - two months during 1985
7.	How extensive:	AC and heat pumps - full scale; lighting - pilot program
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	AC and heat pumps - consumers, builders, landlords; lighting - consumers
10.	Rebate amounts:	CAC and heat pumps - $48-120/ton; room AC - $36-84/ton; lighting - $4-8
11.	Does the rebate vary according to:	Equipment size - yes for AC and heat pumps; efficiency - yes for AC and heat pumps
12.	Minimum efficiency requirements:	Central AC and heat pumps - 9.5 SEER rating; room AC - 9.0 EER rating; lighting - screw-in fluorescent lamps
13.	Basis for setting rebate amounts:	N/A
14.	Non-utility organizations participating in program design and implementation:	Government agencies
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base

ORANGE AND ROCKLAND UTILITIES

18.	Annual budget:	AC and heat pumps - $270,000; lights - $1000
19.	Objectives:	N/A
20.	Types of program evaluation:	Lights - quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	After lighting pilot program, none scheduled yet for AC and heat pump program
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	AC and heat pumps - 3%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	AC and heat pumps - very satisfied; lighting - not satisfied
27.	Aspects in need of improvement:	AC and heat pumps - use of energy guide labels; lighting - marketing and public relations, customer interest
28.	Aspects most successful:	AC and heat pumps - helped consumers make energy conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A

ORANGE AND ROCKLAND UTILITIES

30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	AC and heat pumps - yes; lighting - no
	If so, what changes will be made:	None
32.	Other comments:	The lighting offer was an experiment in which some customers were offered a $4 rebate and some an $8 rebate for each screw-in fluorescent bulb purchased. The utility also has offered rebates to residential customers who convert to natural gas space heating and swimming pool heating, but without minimum efficiency requirements.

OTTER TAIL POWER COMPANY

1.	Name of utility:	Otter Tail Power Company
2.	Address:	215 South Cascade Fergus Falls, MN 56537
3.	Contact person:	George Jurgens
4.	Phone:	218/739-8256
5.	Products included:	High efficiency residential room and central AC, ground water heat pumps, energy efficient refrigerator-freezers, and energy efficient dishwashers
6.	Duration:	In progress since 1987
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Otter Tail consumers
10.	Rebate amounts:	Residential air conditioners and heat pumps - $12/ton; refrigerators - $30; dishwashers - $20
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes
12.	Minimum efficiency requirements:	Room or central air conditioners and heat pumps - 8.5 EER or SEER rating; refrigerators and dishwashers must be promoted as "energy efficient" and dishwashers must have a switch on the drying cycle
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity; 2) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base

OTTER TAIL POWER COMPANY

18.	Annual budget:	$107,000 in 1985-86
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) increase market share; 4) levelize load
20.	Types of program evaluation:	Quantitative evaluation of cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	18%
24.	Annual peak demand reduction:	1.2 MW
	Fraction of total peak demand:	0.22%
	Annual KWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$90/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Marketing and public relations, dealer cooperation, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	None
30.	Problems identified in a consumer evaluation:	None

OTTER TAIL POWER COMPANY

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Refrigerators and dishwashers were added to the program in 1987.
32.	Other comments:	The utility also provides rebates for peak demand control of electric space and water heating and for thermal storage.

PACIFIC GAS AND ELECTRIC COMPANY

1.	Name of utility:	Pacific Gas and Electric Company
2.	Address:	77 Beale Street San Francisco, CA 94106
3.	Contact persons:	Edward Mah (residential) or Robin Calhoun (commercial)
4.	Phone:	Mah - 415/972-1168; Calhoun - 415/973-2071
5.	Products included:	Residential refrigerators, gas ranges and gas dryers; commercial HVAC, lighting, motors, EMS, and refrigeration equipment
6.	Duration:	Refrigerator retirement - ongoing since 1979; refrigerator rebates - ongoing since 1982; gas range and dryer rebates - ongoing since 1983; commercial and individual incentives - ongoing since 1983
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Purchasers of qualifying equipment; residents and charities for the refrigerator retirement program
10.	Rebate amounts:	Efficient refrigerators - $50-75, refrigerator retirement - $25 to resident and $25 to charity (if unit made inoperabale), gas ranges and dryers - $50; C&I rebates - approximately 50% of the cost of certain pre-calculated conservation measures; all other measures that save electricity (not pre-calculated) - approximately 30% of total cost
11.	Does the rebate vary according to:	Equipment size - residential programs - no; C&I program - yes; efficiency - yes for C&I and efficient refrigerator programs
12.	Minimum efficiency requirements:	Efficient refrigerator program - either 25% or 33% above state standard; gas ranges and dryers -

PACIFIC GAS AND ELECTRIC COMPANY

		pilotless models replacing electric ranges and dryers; C&I program - certain measures included
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) benefit from avoided capacity cost; 3) extra first cost for qualifying equipment; 4) benefit from avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	Residential program - state agencies, manufacturers' association; C&I program - state agencies, manufacturers or retailers, consultants
15.	Who proposed the rebate program:	Utility and regulatory commission
16.	Was no-losers test applied in program design:	Residential program - no; C&I program - yes
17.	Source of funds:	Rate base and operating expenses
18.	Annual budget:	Residential program - $7.3 million in 1985; C&I program - $17.6 million in 1985
19.	Objectives:	Residential program - 1) reduce base load; 2) promote energy efficient appliances; 3) satisfy regulatory commission; 4) reduce peak load; C&I program - 1) increase market share; 2) promote energy efficient products; 3) reduce peak load; 4) level load
20.	Types of program evaluation:	Questions on application form, surveys of participants, all customers, and dealers, quantitative evaluations of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A

PACIFIC GAS AND ELECTRIC COMPANY

	Does the utility estimate incremental impacts:	Residential program - no; C&I program - yes
	If so, how:	Surveys of dealers and vendors
23.	Fraction of cost for administration:	Residential program - 46%; C&I program - 10%
24.	Annual peak demand reduction:	Residential program - 8.2 MW; C&I program - 48 MW
	Fraction of total peak demand:	0.40%
	Annual KWh reduction:	Residential program - 53.5 million KWh; C&I program - 299 million KWh
	Fraction of total KWh use:	0.58%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	Residential program - $890/KW; C&I program - $375/KW, $300/KW peak
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Residential program - reduce administration costs, increase market penetration, greater dealer cooperation, improve cost effectivness. C&I program - need to reevaluate rebate amounts and cost effectiveness, need better targeting of particular markets
28.	Aspects most successful:	Residential program - helped consumers make energy-conscious decisions, stimulated market for efficient appliances. C&I programs - easy to implement, helped consumers make energy conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient products, reduced prices of efficient products, stimulated economic growth

PACIFIC GAS AND ELECTRIC COMPANY

29.	Problems identified in a dealer evaluation:	Residential program - rebate amount too low; C&I program - none
30.	Problems identified in a consumer evaluation:	Residential program - rebate amount too low, energy efficiency not important; C&I program - none
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Residential and C&I programs - different amount and type of rebate
32.	Other comments:	The refrigerator retirement program is a unique program intended to remove older, less efficient models and second models from the operating stock. Customers who donate a functioning model to a charity receive $25, the charity receives $25 if it destroys the model. About 40,000 models are donated per year and 80% of them are destroyed. The C&I program includes rebates for street lighting conversions and agricultural equipment.

PACIFIC POWER AND LIGHT COMPANY

1.	Name of utility:	Pacific Power and Light Company
2.	Address:	920 S.W. Sixth Avenue Portland, OR 97204
3.	Contact person:	Beverly Groshens
4.	Phone:	503/243-4334
5.	Products included:	Residential and commercial water heaters
6.	Duration:	In progress
7.	How extensive:	Pilot program in Idaho
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Purchaser of water heater
10.	Rebate amounts:	$50
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	R-16 insulation level
13.	Basis for setting rebate amounts:	Cost effective amount acceptable to PUC and utility
14.	Non-utility organizations participating in program design and implementation:	Regulatory commission
15.	Who proposed the rebate program:	Regulatory commission and utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	$6500 for rebates only during past year
19.	Objectives:	1) Satisfy regulatory commission; 2) promote energy efficient appliances; 3) increase market share; 4) improve customer relations
20.	Types of program evaluation:	Surveys of participants and dealers

PACIFIC POWER AND LIGHT COMPANY

21.	Frequency of program evaluation:	N/A
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	Easy to implement, improved customer satisfaction, good public relations
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	None

PENNSYLVANIA ELECTRIC COMPANY

1.	Name of utility:	Pennsylvania Electric Company
2.	Address:	1001 Broad Street Johnstown, PA 15906
3.	Contact person:	Larry Morris or Chuck Tremel
4.	Phone:	814/533-8451, 533-8434
5.	Products included:	Energy-efficient fluorescent lamps, ballasts, high intensity discharge lamps
6.	Duration:	In progress since 6/84
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Any commercial or industrial customer
10.	Rebate amounts:	$0.50 per fluorescent tube, $4 per ballast, $100/KW for HID replacements
11.	Does the rebate vary according to:	Equipment size - yes for HID replacements; efficiency - yes for HID replacements
12.	Minimum efficiency requirements:	Must be designated product
13.	Basis for setting rebate amounts:	1) Benefit from avoided energy cost; 2) extra first cost for qualifying equipment; 3) amount necessary to benefit from avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base
18.	Annual budget:	$625,000 in 1985/86

PENNSYLVANIA ELECTRIC COMPANY

19.	Objectives:	1) Reduce peak load; 2) levelize load; 3) promote energy efficient equipment; 4) improve customer relations
20.	Types of program evaluation:	Surveys of participants and all customers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	11%
24.	Annual peak demand reduction:	5.5 MW
	Fraction of total peak demand:	0.25%
	Annual KWh reduction:	8.25 million KWh
	Fraction of total KWh use:	0.07%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$115/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Better marketing and public relations
28.	Aspects most successful:	Easy to implement, helps consumers make energy-conscious decisions, improved customer satisfaction, good public relations
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A

PENNSYLVANIA ELECTRIC COMPANY

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	In 1987, C&I rebates will be extended to energy efficient motors and thermal storage equipment

PENNSYLVANIA POWER AND LIGHT COMPANY

1.	Name of utility:	Pennsylvania Power and Light Company
2.	Address:	Two North Ninth Street Allentown, PA 18101
3.	Contact person:	Grayson McNair
4.	Phone:	215/770-5950
5.	Products included:	New homes only with off-peak water heaters, storage space heating equipment, insulation, and appliances
6.	Duration:	In progress since 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers and builders
10.	Rebate amounts:	$1,000 per home for meeting all requirements
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Appliances must be in the top 50% of the efficiency range
13.	Basis for setting rebate amounts:	1) Extra first cost for qualifying equipment; 2) benefit from avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	Consumer advisory panel
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	$680,000
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances

PENNSYLVANIA POWER AND LIGHT COMPANY

20.	Types of program evaluation:	Quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	1-10% of new home market
	Basis for this estimate:	About 7% of new electrically- heated homes were four-star homes in 1986
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Utility believes all purchases of energy efficient models for which the rebate is paid is a result of the program
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	6.1 MW
	Fraction of total peak demand:	0.13%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$110/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Marketing and public relations
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	Low availability of storage heating equipment

PENNSYLVANIA POWER AND LIGHT COMPANY

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	N/A

PORTLAND GENERAL ELECTRIC COMPANY

1.	Name of utility:	Portland General Electric Company
2.	Address:	121 SW Salmon Street Portland, OR 97204
3.	Contact person:	Jim Guitteau
4.	Phone:	503/226-8496
5.	Products included:	Solar and heat pump water heaters
6.	Duration:	June, 1980 - December, 1984
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers
10.	Rebate amounts:	$300
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	None
13.	Basis for setting rebate amounts:	1) Amount necessary to affect consumers; 2) first cost of qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$550,000 (average over life of program)
19.	Objectives:	1) Determine program feasibility; 2) promote energy efficient equipment; 3) reduce base load
20.	Types of program evaluation:	Quantitative evaluation of energy savings

PORTLAND GENERAL ELECTRIC COMPANY

21.	Frequency of program evaluation:	Final evaluation completed in August, 1985
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	54%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Total kWh reduction:	9.5 million KWh
	Fraction of total KWh use:	0.05%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	$0.030/KWh assuming ten year conservation measure lifetime
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Dealer cooperation
28.	Aspects most successful:	Boosted sale of energy efficient water heating options
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	No
	If so, what changes will be made:	N/A
32.	Other comments:	The incentive offer for solar water heaters included a choice of rebate or no interest, one year loan covering a portion of the initial cost. Of the 5,600 units installed under this demonstration program, approximately 81% were solar water heaters.

POTOMAC EDISON COMPANY

1.	Name of utility:	Potomac Edison Company
2.	Address:	Downsville Pike Hagerstown, MD 21740
3.	Contact person:	Jo Mullendore
4.	Phone:	301/790-3400
5.	Products included:	Water heater insulation jacket
6.	Duration:	Three months in 1984 (purchaser); six months in 1986 (seller)
7.	How extensive:	Pilot program
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Residential consumers, water heater jacket merchandisers
10.	Rebate amounts:	$5 - purchaser; $2.50 seller
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	None
13.	Basis for setting rebate amounts:	Avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	Retailers' organization
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	N/A
19.	Objectives:	1) Reduce peak load; 2) determine program feasibility
20.	Types of program evaluation:	Overall effectiveness
21.	Frequency of program evaluation:	Interim reports following pilot program
22.	What fraction of sales qualifies for rebates:	N/A

POTOMAC EDISON COMPANY

	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	0.344 MW
	Fraction of total peak demand:	0.001%
	Annual KWh reduction:	2,736,000 KWh (goal)
	Fraction of total KWh use:	0.43%
	Was the savings target reached:	No
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Not satisfied
27.	Aspects in need of improvement:	Marketing and public relations, application process, dealer cooperation, customer interest, rebate amount
28.	Aspects most successful:	Easy to implement
29.	Problems identified in a dealer evaluation:	Customers not interested, rebate amount too low, target audience too narrow
30.	Problems identified in a consumer evaluation:	Application process too cumbersome, dealers uninformed, energy efficiency not important
31.	Does the utility plan to continue the program:	No
32.	Other comments:	Considering offering rebates for the addition of insulation in electrically heated homes in 1987

POTOMAC ELECTRIC POWER COMPANY

1.	Name of utility:	Potomac Electric Power Company
2.	Address:	1900 Pennsylvania Ave., N.W. Washington, DC 20068
3.	Contact person:	Mary Bumgarner
4.	Phone:	202/872-3096
5.	Products included:	Residential central AC and heat pumps
6.	Duration:	Three months in 1985, three months in 1986
7.	How extensive:	Pilot programs
8.	Are there rebate payments to:	Purchaser - no; seller - yes
9.	Who is eligible for a rebate payment:	Appliance dealers
10.	Rebate amounts:	$100
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	1985 - 8.5 SEER rating for heat pumps; 1986 - 10.0 SEER rating for heat pumps and central AC
13.	Basis for setting rebate amounts:	Avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	Retailers
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense
18.	Annual budget:	$38,000 in 1986
19.	Objectives:	1) Gather local market data; 2) determine program feasibility; 3) reduce peak load; 4) promote energy efficient appliances; 5) increase market share

POTOMAC ELECTRIC POWER COMPANY

20.	Types of program evaluation:	Survey of participants, all customers, and dealers
21.	Frequency of program evaluation:	At end of pilot
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	Administrative costs, application process, dealer cooperation
28.	Aspects most successful:	Stimulated market for efficient appliances, provided information on local market, provided program administration experience
29.	Problems identified in a dealer evaluation:	Application process too cumbersome
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Program will be expanded, changes still uncertain
32.	Other comments:	Minimum efficiency requirement for heat pumps was increased between 1985 and 1986

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

1.	Name of utility:	Public Service Electric and Gas Company
2.	Address:	Post Office Box 570 Newark, NJ 07101
3.	Contact person:	Wayne Rogers
4.	Phone:	201/430-7246
5.	Products included:	Residential room AC, central AC, heat pumps, gas and solar water heaters, gas furnaces and boilers, and coolness storage systems
6.	Duration:	AC and heat pumps - in progress since 5/83; gas and solar water heaters - in progress since 6/85; furnaces and boilers - in progress since 6/85
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Any purchaser of qualifying equipment; gas water heaters restricted to replacements of oil or gas fired tankless coils
10.	Rebate amounts:	Central AC - $48-120 per ton; room AC - $36-84 per ton; heat pumps - $96-120 per ton; furnaces and boilers - $1.00-2.00 per MBtu; replacement of tankless water heater - $100; solar water heater - $250-500; coolness storage - $250/KW for load shifted up to 500 KW and $125/KW for load shifted in excess of 500 KW
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes, sliding scale
12.	Minimum efficiency requirements:	Central AC - 9.5 SEER rating; room AC - 9.0 EER rating; heat pumps - 9.0 SEER rating; furnaces and boilers - 80% AFUE rating; tankless water heater replacement - .55 energy factor rating

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

13.	Basis for setting rebate amounts:	AC and heat pumps - 1) benefit from avoided capacity cost; 2) benefit from avoided energy cost; 3) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Programs approved by the public utility commission
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense
18.	Annual budget:	AC and heat pumps - $3.5 million; water heaters - approximately $394,000; furnaces and boilers - $1.1 million; cool storage - $426,000; solar - $196,000
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) satisfy regulatory commission
20.	Types of program evaluation:	Questions on application form, survey of participants and dealers
21.	Frequency of program evaluation:	First cost/benefit evaluation planned for 1986-87
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Through a survey card that includes questions about factors influencing the purchase decision
23.	Fraction of cost for administration:	1%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Dealer cooperation
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Not enough qualifying models, dealers want a share of the rebate
30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	AC and heat pumps - change the minimum efficiency level and type of rebate
32.	Other comments:	The minimum efficiency requirement for central AC systems and heat pumps was raised in 1986.

PUBLIC SERVICE OF OKLAHOMA

1.	Name of utility:	Public Service of Oklahoma
2.	Address:	Post Office Box 201 Tulsa, OK 74102
3.	Contact person:	Michael Bibby
4.	Phone:	918/599-2642
5.	Products included:	Residential central AC and heat pumps
6.	Duration:	In progress since 1984; AC discontinued in 1987
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, new housing and replacement markets
10.	Rebate amounts:	$120-200/KW of reduced demand with the rebate per KW saved increasing with CAC or heat pump efficiency
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes; it also depends on the efficiency of the unit being replaced or the typical efficiency in new housing
12.	Minimum efficiency requirements:	8.5 SEER rating
13.	Basis for setting rebate amounts:	N/A
14.	Non-utility organizations participating in program design and implementation:	N/A
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	N/A
17.	Source of funds:	Operating expense
18.	Annual budget:	N/A
19.	Objectives:	N/A
20.	Types of program evaluation:	N/A

PUBLIC SERVICE OF OKLAHOMA

21.	Frequency of program evaluation:	N/A
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	N/A
32.	Other comments:	The utility felt that information on program design and results is proprietary.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

1.	Name of utility:	Sacramento Municipal Utility District
2.	Address:	6201 S Street Sacramento, CA 95817
3.	Contact persons:	Dwight MacCurdy or Rick Kallett
4.	Phone:	916/732-5471 or 732-5477
5.	Products included:	Residential central AC and heat pumps; commercial lighting
6.	Duration:	Residential - 1982-1987; commercial - six month pilot in 1984; other pilots in progress since 1986
7.	How extensive:	Residential - full scale; commercial - pilot
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential - home builders; commercial - purchasers of qualifying equipment
10.	Rebate amounts:	Residential - $40 per unit of SEER above the minimum; commercial - $1.00-1.50 per qualifying lamp in 1984 pilot, 100% of installed cost in second pilot, 40% of lamp cost in third pilot
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes for air conditioners
12.	Minimum efficiency requirements:	Residential - 8.0 SEER rating for central AC and heat pumps; commercial - energy-efficient fluorescent lamps
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity; 2) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility

SACRAMENTO MUNICIPAL UTILITY DISTRICT

16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense
18.	Annual budget:	Residential - $317,000; first commercial pilot- $147,000, second commercial pilot - $193,000, third commercial pilot - $500,000
19.	Objectives:	1) Determine program feasibility; 2) levelize load; promote energy efficient appliances; 3) improve customer relations; 4) reduce peak demand
20.	Types of program evaluation:	Survey of participants, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Commercial - following pilot program; residential - N/A
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	Residential - 3.0 MW; Commercial - .5 MW first pilot, 1.2 second, 2.6 third
	Fraction of total peak demand:	Residential - .16%; Commercial - 0.03% first commercial pilot, .06% second, .14% third
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	Residential - yes; commercial - no
25.	Cost per unit of peak demand reduction:	Residential - $110/KW; commercial - $240/KW
26.	Overall satisfaction:	Satisfactory

SACRAMENTO MUNICIPAL UTILITY DISTRICT

27. Aspects in need of improvement:	Residential - more marketing to builders needed, rebate not high enough; commercial - program requires more aggressive marketing, better dealer cooperation, greater customer interest
28. Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient equipment, produced good experimental information, reduced peak load
29. Problems identified in a dealer evaluation:	Residential program - rebate amount too low, target audience too narrow; commercial program - vendors not adequately involved
30. Problems identified in a consumer evaluation:	Residential program - dealers uninformed about efficiency, rebate amount too low; commercial - small customers often need help from start to finish
31. Does the utility plan to continue the program:	Residential - no; commercial - yes
If so, what changes will be made:	Residential - none
32. Other comments:	N/A

SALT RIVER PROJECT

1.	Name of utility:	Salt River Project
2.	Address:	Post Office Box 52025 Phoenix, AZ 85072
3.	Contact person:	Lee Athmer
4.	Phone:	602/236-4439
5.	Products included:	Residential CAC, heat pumps, furnaces; commercial HVAC
6.	Duration:	In progress since 4/85
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential or commercial purchaser
10.	Rebate amounts:	CAC and heat pumps - $50-100/ton
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	CAC and heat pumps - 9.0 SEER
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	HVAC contractors
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$700,000
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances
20.	Types of program evaluation:	Survey of participants
21.	Frequency of program evaluation:	First evaluation planned for early 1987

SALT RIVER PROJECT

22.	What fraction of sales qualifies for rebates:	90-100%
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Administrative costs, marketing and public relations, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise the minimum efficiency level

SEATTLE CITY LIGHT

1.	Name of utility:	Seattle City Light
2.	Address:	1015 Third Avenue Seattle, WA 98104
3.	Contact person:	Ela Esterberg
4.	Phone:	206/625-3754
5.	Products included:	Electric water heaters
6.	Duration:	In progress since 7/83
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers, landlords (with four units or less), non-profit groups
10.	Rebate amounts:	$50
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Qualification is based on the standby loss rating, the allowed standby loss depends on the size of the water heater
13.	Basis for setting rebate amounts:	Extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$880,000 in 1985
19.	Objectives:	1) Promote energy efficient appliances; 2) reduce peak load
20.	Types of program evaluation:	Survey of participants, survey of all customers, survey of dealers, quantitative evaluation of energy savings and cost effectiveness

SEATTLE CITY LIGHT

21.	Frequency of program evaluation:	Most recent evaluation completed in 1985, new evaluation not planned
22.	What fraction of sales qualifies for rebates:	80-90%
	Basis for this estimate:	Market potential as determined by utility
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Comparison with data from the residential customer characteristics survey conducted by utility
23.	Fraction of cost for administration:	23%
24.	Annual demand reduction:	685 KW (average demand)
	Fraction of total peak demand:	0.3%
	Annual KWh reduction:	6.0 million KWh
	Fraction of total KWh use:	0.07%
	Was savings target reached:	No
25.	Cost per unit of peak demand reduction:	$1285/KW average
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Reduce administrative costs, simplify application process
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, good public relations, stimulated market for efficient appliances, improved image of utility with dealers
29.	Problems identified in a dealer evaluation:	Target audience too narrow
30.	Problems identified in a consumer evaluation:	Application process too cumbersome, delay in receiving rebate too long
31.	Does the utility plan to continue the program:	Yes

	If so, what changes will be made:	Streamline application process, reduce inspections
32.	Other comments:	Highly successful program except in meeting savings target. This is due in part to greater need for space heat as water heater loss is reduced, which has been factored into the savings analysis.

SIERRA PACIFIC POWER COMPANY

1.	Name of utility:	Sierra Pacific Power Company
2.	Address:	Post Office Box 10100 Reno, NV 89520
3.	Contact person:	Luanne Oroszi
4.	Phone:	702/689-4795
5.	Products included:	Residential refrigerators, freezers and water heaters
6.	Duration:	Program will begin in 1987
7.	How extensive:	Pilot program
8.	Are there rebate payments to:	Purchaser - no; seller - yes
9.	Who is eligible for a rebate payment:	Appliance dealers
10.	Rebate amounts:	Undetermined
11.	Does the rebate vary according to:	Equipment size - undetermined; efficiency - undetermined
12.	Minimum efficiency requirements:	Refrigerators and freezers - 25% more efficient than 1986 California standards
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) amount necessary to affect purchasers; 3) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Regulatory commission
15.	Who proposed the rebate program:	Regulatory commission
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Undetermined
18.	Annual budget:	$60,000
19.	Objectives:	1) Satisfy regulatory commission; 2) determine program feasibility; 3) improve customer relations

SIERRA PACIFIC POWER COMPANY

20.	Types of program evaluation:	Quantitative evaluation of cost effectiveness planned
21.	Frequency of program evaluation:	Following pilot program in 1988
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	N/A
28.	Aspects most successful:	N/A
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	N/A
	If so, what changes will be made:	N/A

SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT

1.	Name of utility:	Snohomish County Public Utility District
2.	Address:	Post Office Box 1107 Everett, WA 98206
3.	Contact person:	David Smith
4.	Phone:	206/347-1737
5.	Products included:	Commercial HVAC and lighting conservation measures
6.	Duration:	N/A
7.	How extensive:	Pilot program in all service territory
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Small businesses, institutions, non-profit groups
10.	Rebate amounts:	50% of the cost of the conservation measures up to certain limits
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Qualification is based on the installation of specific measures including high efficiency lamps, ballasts, timeclocks, economizer cycles, insulation, programmable thermostats, and water heater wraps
13.	Basis for setting rebate amounts:	1) Avoided energy costs; 2) amount necessary to affect purchasers; 3) extra first cost for qualifying equipment; 4) avoided capacity cost
14.	Non-utility organizations participating in program design and implementation:	Bonneville Power Administration
15.	Who proposed the rebate program:	Bonneville Power Administration
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Bonneville Power Administration

SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT

18.	Annual budget:	Approximately $100,000
19.	Objectives:	Determine program feasibility
20.	Types of program evaluation:	BPA will evaluate
21.	Frequency of program evaluation:	When pilot program completed
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	N/A
27.	Aspects in need of improvement:	Reduce administrative costs, reduce program complexity, and improve cost effectiveness
28.	Aspects most successful:	Easy to implement, improved customer satisfaction, good public relations
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Utility wants to raise the ceiling on annual KWh use in order to allow more customers to participate in the pilot program

SOUTHERN CALIFORNIA EDISON COMPANY

1. Name of utility:	Southern California Edison Company
2. Address:	2244 Walnut Grove Avenue Rosemead, CA 91770
3. Contact persons:	Claire-Ann Nicholson and Debbie Kuroda
4. Phone:	818/302-2033
5. Products included:	Residential - refrigerators, room AC, central AC and heat pumps, water heaters, weatherization measures; commercial/industrial - lighting, HVAC, motors, weatherization, other
6. Duration:	Residential - in progress since 1983 for all products except room AC, room AC was only offered in 1986; commercial/industrial - in progress since 1982 but greatly expanded in 1984
7. How extensive:	Full scale except for room AC
8. Are there rebate payments to:	Purchaser - yes, except for room AC program; seller - yes, only for room AC program
9. Who is eligible for a rebate payment:	Purchasers except for room AC pilot dealer program
10. Rebate amounts:	Residential: refrigerators - $50-75, CAC and heat pumps - $421-915, heat pump water heater - $266; commercial/industrial: efficient fluorescent tubes - $1.25-2.50, specular optical reflectors for fluorescent fixtures - $10, other lighting efficiency measures - $100 per KW reduced, smaller motors - $5 per HP, package AC and heat pumps - $100-200 per ton of capacity, water-cooled chillers - $50 per ton of capacity, evaporative coolers - $75 per ton, pumping and manufacturing modifications - $100 per KW reduced. C&I rebates also are limited to $50,000 per customer and to 30% of the investment cost.

SOUTHERN CALIFORNIA EDISON COMPANY

11.	Does the rebate vary according to:	Equipment size - yes for C&I program, no for residential program; efficiency - yes for refrigerators, some lighting measures, C&I package, AC and heat pumps, C&I pumping and manufacturing modifications
12.	Minimum efficiency requirements:	Residential refrigerators - 25% more efficient than 1986 California standard; residential central AC and heat pump replacement - 9.0 SEER rating; heat pump replacing electric resistance heating - 8.0 SEER rating; C&I package AC and heat pumps - 8.2 EER rating; other C&I rebates - specified measures
13.	Basis for setting rebate amounts:	1) Benefit from avoided peak demand; 2) amount necessary to affect purchasers or dealers
14.	Non-utility organizations participating in program design and implementation:	Regulatory commission, contractor association
15.	Who proposed the rebate program:	Utility and regulatory commission
16.	Was no-losers test applied in program design:	Yes for full scale programs
17.	Source of funds:	Operating expense
18.	Annual budget:	Residential programs - $12.0 million in 1985; commercial programs - $10 million in 1985; similar budgets in 1986
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient equipment; 3) improve customer relations; 4) satisfy regulatory commission
20.	Types of program evaluation:	Survey of participants, quantitative evaluation of energy savings and cost-effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A

SOUTHERN CALIFORNIA EDISON COMPANY

	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	About 30%
24.	Annual peak demand reduction:	Residential program - 29.0 MW and C&I program - 52.1 MW in 1985
	Fraction of total peak demand:	0.55%
	Annual KWh reduction:	Residential program - 50 million KWh and C&I program - 400 million KWh in 1985
	Fraction of total KWh use:	0.85%
	Was the savings target reached:	Yes
25.	Cost per unit of peak demand reduction:	Residential refrigerators - $650/KW; other residential conservation - $250/KW; C&I rebates - $190/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Residential programs - cost effectiveness, efficiency labels, dealer cooperation
28.	Aspects most successful:	East to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Dealers confused, not enough qualifying models
30.	Problems identified in a consumer evaluation:	Efficiency labels too confusing, dealers uninformed about energy efficiency
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	In 1985/86, the utility stopped offering rebates on some low cost, short payback measures and added some new measures to the programs.

	Also, residential rebates were changed in order to shift activity from home weatherization towards air conditioning efficiency. In the future, the following changes are anticipated: residential refrigerators - increase the minimum efficiency level and change the rebate amount; other residential measures - shift to sliding scale rebates based on efficiency and savings; C&I rebates - lower rebate amounts and more eligibility restrictions
32. Other comments:	For the residential air conditioning and weatherization program, customers have a choice of a subsidized loan (8% interest) or a rebate. In 1985/86, 98% of program funds were spent on rebates. Therefore, the financing offer will be dropped in 1987. The utility also provides rebates for C&I customers who install thermal storage equipment for off-peak cooling - $200/KW of deferred peak demand up to $100,000.

TAMPA ELECTRIC COMPANY

1.	Name of utility:	Tampa Electric Company
2.	Address:	Post Office Box 111 Tampa, FL 33601
3.	Contact persons:	Tim Richardson or Tom Campbell
4.	Phone:	813/228-4123 or 228-4107
5.	Products included:	Residential heat pumps
6.	Duration:	In progress since 1981
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Residential consumers, dealers, landlords (rebates to builders discontinued in July, 1984)
10.	Rebate amounts:	Purchasers - $175-1200; dealers - $15-250
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes (two tier)
12.	Minimum efficiency requirements:	Cooling - 7.5 and 9.0 SEER ratings; heating - 2.5 and 3.0 COP ratings; also restrictions on the amount of supplemental strip heating
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) avoided energy cost; 3) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$3.5 million
19.	Objectives:	1) Reduce peak load; 2) reduce base load; 3) promote energy efficient appliances; 4) levelize load

TAMPA ELECTRIC COMPANY

20.	Types of program evaluation:	Survey of participants, quantitative evaluation of energy savings
21.	Frequency of program evaluation:	At least annually
22.	What fraction of sales qualifies for rebates:	90-100%
	Basis for this estimate:	Unclear
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	24%
24.	Annual peak demand reduction:	24.4 MW winter; 2.4 MW summer
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	yes
25.	Cost per unit of peak demand reduction:	$143/KW winter peak; $1460/KW summer peak
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Application process, ensuring proper installation
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Different type and amount of rebate

TENNESSEE VALLEY AUTHORITY

1.	Name of utility:	Tennessee Valley Authority
2.	Address:	1S-47A Signal Place 1101 Market Street Chattanooga, TN 37402
3.	Contact person:	Ted Sheldon
4.	Phone:	615/751-6845
5.	Products included:	Residential CAC, RAC, heat pump
6.	Duration:	6 months in 1986
7.	How extensive:	Pilot, limited area
8.	Are there rebate payments to:	Purchaser - yes; seller - yes (in two areas)
9.	Who is eligible for a rebate payment:	Consumers, builders, commercial businesses buying small equipment; CAC dealers in two areas
10.	Rebate amounts:	CAC and heat pumps - $50-250; RAC - $30-100
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	CAC and heat pumps - 9.3 SEER; RAC - 8.5 EER
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) avoided energy cost; 3) amount necessary to affect purchasers; 4) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Conservation program budget
18.	Annual budget:	$320,000
19.	Objectives:	1) Determine program feasibility; 2) reduce peak load; 3) levelize load;

		4) promote energy-efficient appliances; 5) improve community relations
20.	Types of program evaluation:	Questions on application form, survey of participants, survey of dealers, quantitative evaluation of energy savings
21.	Frequency of program evaluation:	When demonstration program is completed
22.	What fraction of sales qualifies for rebates:	Don't know
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	55%
24.	Annual peak demand reduction:	Don't know
	Fraction of total peak demand:	N/A
	Annual kWh reduction:	Don't know
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	High administrative cost, application process
28.	Aspects most successful:	Stimulated the market for efficient equipment
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	This will be determined following formal program evaluation.
32.	Other comments:	N/A

TEXAS UTILITIES ELECTRIC COMPANY

1.	Name of utility:	Texas Utilities Electric Company
2.	Address:	1506 Commerce Street Dallas, TX 75201
3.	Contact person:	Robert Morris, Jr.
4.	Phone:	214/698-3659
5.	Products included:	Residential RAC, CAC, heat pump, heat pump water heaters, heat recovery and solar water heaters; C&I HVAC, lighting, thermal storage
6.	Duration:	Began in 1981
7.	How extensive:	Full-scale, all service area
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Consumers, builders, businesses, landlords, institutions, contractors, dealers
10.	Rebate amounts:	CAC - $25-60/ton; HP - $50-75/ton; RAC - $50 heat recovery and solar water heater - $50. Contractors and dealers - $30/unit on central air conditioners, heat pumps, heat recovery, solar water heaters, heat pump water heaters
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes
12.	Minimum efficiency requirements:	CAC - 9.0 SEER; HP - 9.0 SEER; RAC - 9.0 EER
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Operating expense

TEXAS UTILITIES ELECTRIC COMPANY

18.	Annual budget:	$17 million in 1986
19.	Objectives:	1) Reduce peak load; 2) promote efficient appliances; 3) satisfy regulatory commission
20.	Types of program evaluation:	Surveys of recipients, all customers, dealers; quantitative evaluations of energy savings and cost effectiveness
21.	Frequency of program evaluation:	At least annually
22.	What fraction of sales qualifies for rebates:	30-40%
	Basis for this estimate:	Participant rates from HVAC dealers
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Forecasts of additional purchases
23.	Fraction of cost for administration:	39% in 1986
24.	Annual peak demand reduction:	140 MW
	Fraction of total peak demand:	.68%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	$125/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	None given
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient HVAC equipment
29.	Problems identified in a dealer evaluation:	Too restrictive on qualifying levels
30.	Problems identified in a consumer evaluation:	Efficiency labels too confusing

TEXAS UTILITIES ELECTRIC COMPANY

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise the minimum efficiency level, provide incentives for greater thermal integrity.
32.	Other comments:	Texas Utilities Electric Company rebate programs are implemented by divisions of the company including Texas Power and Light, Dallas Power and Light, and Texas Electric Service.

UNITED ILLUMINATING COMPANY

1.	Name of utility:	United Illuminating Company
2.	Address:	80 Temple Street New Haven, CT 06506
3.	Contact person:	Robert Mills
4.	Phone:	203/777-7109
5.	Products included:	Residential RAC, C&I lighting
6.	Duration:	3-6 months during 1986
7.	How extensive:	Pilot program
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers
10.	Rebate amounts:	RAC - $25
11.	Does the rebate vary according to:	Equipment size - no; efficiency - yes
12.	Minimum efficiency requirements:	RAC - 9.5 EER
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) avoided energy cost; 3) amount necessary to affect purchasers; 4) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expenses
18.	Annual budget:	$20,000
19.	Objectives:	1) Reduce peak load; 2) promote energy efficient appliances; 3) levelize load; 4) improve community relations
20.	Types of program evaluation:	Questions on application form, surveys of all consumers and

		dealers, quantitative evaluations of energy savings and cost effectiveness, And AC dealers focus group
21.	Frequency of program evaluation:	Following pilot programs
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
	If so, how:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly
27.	Aspects in need of improvement:	Marketing and public relations, dealer cooperation, rebate amount
28.	Aspects most successful:	Easy to implement, good public relations, stimulated market for efficient equipment
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes, in 1987
	If so, what changes will be made:	Undecided at this time

VERDIGRIS VALLEY ELECTRIC COOPERATIVE

1.	Name of utility:	Verdigris Valley Electric Cooperative
2.	Address:	Post Office Box 219 Collinsville, OK 74021
3.	Contact person:	Jenni Herndon
4.	Phone:	918/371-2584
5.	Products included:	Residential heat pumps and water heaters
6.	Duration:	Ongoing since 8/85
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers, builders, landlords
10.	Rebate amounts:	Air-to-air heat pumps - $100-200; water-source heat pumps - $300; water heaters - $50-100
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - no
12.	Minimum efficiency requirements:	Heat pump - 9.0 SEER and 2.0 COP; water heater - maximum standby loss of 4.0 watts/sq.ft.
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity cost; 2) extra first cost for qualifying equipment
14.	Non-utility organizations participating in program design and implementation:	Government agencies and the bulk power supplier
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Bulk power supplier (KAMO)
18.	Annual budget:	$50,000 for VVEC; $200,000 for all KAMO system

VERDIGRIS VALLEY ELECTRIC COOPERATIVE

19.	Objectives:	1) Levelize load; 2) increase market share; 3) promote energy efficient appliances; 4) reduce peak load
20.	Types of program evaluation:	Survey of participants, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	12%
24.	Annual peak demand reduction:	122 KW
	Fraction of total peak demand:	0.14%
	Annual KWh reduction:	Net increase in KWh use
	Fraction of total KWh use:	N/A
	Was the savings target reached:	No
25.	Cost per unit of peak demand reduction:	$280/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Application process and record-keeping
28.	Aspects most successful:	Helped consumers make energy-conscious decisions, improved customer satisfaction, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Dealers upset because utility directly sells most qualifying products
30.	Problems identified in a consumer evaluation:	Dealers not helpful or informed about energy efficiency, delay in processing rebate applications

VERDIGRIS VALLEY ELECTRIC COOPERATIVE

31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	None
32.	Other comments:	Utility stocks and sells qualifying models

WEST TEXAS UTILITIES COMPANY

1.	Name of utility:	West Texas Utilities Company
2.	Address:	Post Office Box 841 Abilene, TX 79604
3.	Contact person:	Carl Piel
4.	Phone:	915/674-7296
5.	Products included:	Residential CAC, heat pumps, RAC, and heat recovery water heaters; commercial HVAC and heat recovery water heaters
6.	Duration:	Residential - in progress since January, 1983; commercial - in progress since April, 1986
7.	How extensive:	Full scale
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Residential consumers, builders, small businesses, institutions
10.	Rebate amounts:	CAC - $50-75 per ton; heat pumps - $110-140 per ton; room AC - $40; room heat pump - $75; solar, heat pump, and heat recovery water heaters - $100; commercial heat recovery water heating - $50/ton
11.	Does the rebate vary according to:	Equipment size - yes for CAC and heat pumps; efficiency - yes, two-tier for CAC and heat pumps
12.	Minimum efficiency requirements:	CAC - 9.0 SEER; heat pumps - 8.0 SEER; RAC - 8.5 EER. There are also thermal integrity requirements for the building shell in order to qualify for a rebate.
13.	Basis for setting rebate amounts:	1) Avoided capacity cost; 2) amount necessary to affect purchaser; 3) avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	None
15.	Who proposed the rebate program:	Utility

WEST TEXAS UTILITIES COMPANY

16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in the rate base
18.	Annual budget:	$454,000
19.	Objectives:	1) Reduce peak load; 2) levelize load; 3) promote energy efficient equipment; 4) improve customer relations
20.	Types of program evaluation:	Survey of dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Annually
22.	What fraction of sales qualifies for rebates:	60-70%
	Basis for this estimate:	Dealer survey
	Does the utility estimate incremental impacts:	No
23.	Fraction of cost for administration:	30%
24.	Annual peak demand reduction:	5.4 MW
	Fraction of total peak demand:	0.49%
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	yes
25.	Cost per unit of peak demand reduction:	$84/KW
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Dealer cooperation, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances

WEST TEXAS UTILITIES COMPANY

29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Raise the minimum efficiency level for qualification

WISCONSIN ELECTRIC POWER COMPANY

1.	Name of utility:	Wisconsin Electric Power Company
2.	Address:	231 W. Michigan Street Milwaukee, WI 53201
3.	Contact person:	Laura Joeckel
4.	Phone:	414/221-3889
5.	Products included:	Residential electric water heaters, heat pump water heaters
6.	Duration:	4 months during 1985; 3 months during 1986
7.	How extensive:	Pilot programs in entire service area
8.	Are there rebate payments to:	Purchaser - yes; seller - yes
9.	Who is eligible for a rebate payment:	Consumers, builders, and landlords purchasing qualifying equipment
10.	Rebate amounts:	Electric water heaters - $25-125; heat pump water heaters - $200
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - no
12.	Minimum efficiency requirements:	Electric resistance water heaters - ASHRAE standard 90
13.	Basis for setting rebate amounts:	1) Amount necessary to affect purchasers; 2) extra first cost for qualifying equipment; 3) benefit from avoided energy cost
14.	Non-utility organizations participating in program design and implementation:	Plumbers
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Operating expense
18.	Annual budget:	$190,000
19.	Objectives:	1) Retain electric water heating load; 2) increase market share;

WISCONSIN POWER AND LIGHT COMPANY

1.	Name of utility:	Wisconsin Power and Light Company
2.	Address:	Post Office Box 192 Madison, WI 53707
3.	Contact person:	Nancy Mueller
4.	Phone:	608/252-4885
5.	Products included:	Residential refrigerators and water heaters
6.	Duration:	Six months during 1985
7.	How extensive:	Pilot program in a limited area
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	WPL residential retail customers purchasing a qualifying product
10.	Rebate amounts:	Refrigerators - $30-100 depending on efficiency and test area; electric resistance water heaters - $20-50; heat pump water heaters - $100-300
11.	Does the rebate vary according to:	Equipment size - yes; efficiency - yes; three tier for all products
12.	Minimum efficiency requirements:	Refrigerators - depends on label ratings, top 50% qualify for rebate; resistance water heaters - depends on label ratings, top 33% qualify for rebates; heat pump water heaters - 2.0 energy factor rating
13.	Basis for setting rebate amounts:	1) Benefit from avoided capacity; 2) amount necessary to affect purchasers
14.	Non-utility organizations participating in program design and implementation:	Appliance dealers
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	Yes
17.	Source of funds:	Included in rate base

WISCONSIN POWER AND LIGHT COMPANY

18.	Annual budget:	$350,000
19.	Objectives:	1) Promote energy efficient appliances; 2) reduce base load; 3) satisfy regulatory commission; 4) determine program feasibility
20.	Types of program evaluation:	Surveys of participants, all customers, and dealers; quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Following pilot program
22.	What fraction of sales qualifies for rebates:	60-70%
	Basis for this estimate:	Sales data from dealers
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Through sales data
23.	Fraction of cost for administration:	63%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	None given
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	None

		3) promote energy efficient appliances; 4) determine program feasibility
20.	Types of program evaluation:	Surveys of participants and dealers, quantitative evaluation of energy savings and cost effectiveness
21.	Frequency of program evaluation:	Biannually
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	Yes
	If so, how:	Through survey questions
23.	Fraction of cost for administration:	53%
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual KWh reduction:	738,000 KWh
	Fraction of total kWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Fairly satisfied
27.	Aspects in need of improvement:	More marketing and publicity, streamline processing, improved dealer contacts and cooperation
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances
29.	Problems identified in a dealer evaluation:	Application too cumbersome, energy efficiency labels confusing, program needs more promotion

WISCONSIN ELECTRIC POWER COMPANY

30.	Problems identified in a consumer evaluation:	Dealers uninformed about energy efficiency, unaware of program
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	In 1986, consumers must switch to time-of-use rates if natural gas is available in order to receive a rebate.
32.	Other comments:	The participant survey found that 36% of the applicants were replacing a functioning water heater.

WISCONSIN POWER AND LIGHT COMPANY

30.	Problems identified in a consumer evaluation:	None
31.	Does the utility plan to continue the program:	Uncertain
	If so, what changes will be made:	Evaluation of the pilot program was still underway in late 1986. No further programs were planned at that time.

WISCONSIN PUBLIC SERVICE CORPORATION

1.	Name of utility:	Wisconsin Public Service Corporation
2.	Address:	Post Office Box 19001 Green Bay, WI 54307
3.	Contact person:	Carol Wielgus
4.	Phone:	414/433-1625
5.	Products included:	Residential gas furnaces, boilers and water heaters; C&I gas HVAC and water heating equipment
6.	Duration:	In progress
7.	How extensive:	All service territory
8.	Are there rebate payments to:	Purchaser - yes; seller - no
9.	Who is eligible for a rebate payment:	Consumers, landlords, businesses, institutions
10.	Rebate amounts:	Residential furnace/boiler - $100; water heaters - $50; larger HVAC equipment - $500
11.	Does the rebate vary according to:	Equipment size - no; efficiency - no
12.	Minimum efficiency requirements:	Residential furnaces - 83% AFUE; boilers - 78% AFUE; water heaters - ASHRAE 90-75 water heater standard; high efficiency commercial equipment
13.	Basis for setting rebate amounts:	Arbitrary
14.	Non-utility organizations participating in program design and implementation:	HVAC dealers
15.	Who proposed the rebate program:	Utility
16.	Was no-losers test applied in program design:	No
17.	Source of funds:	Included in rate base or operating expense
18.	Annual budget:	$85,000
19.	Objectives:	1) Increase market share; 2) promote energy efficient appliances

WISCONSIN PUBLIC SERVICE CORPORATION

20.	Types of program evaluation:	None completed or underway
21.	Frequency of program evaluation:	N/A
22.	What fraction of sales qualifies for rebates:	N/A
	Basis for this estimate:	N/A
	Does the utility estimate incremental impacts:	N/A
23.	Fraction of cost for administration:	N/A
24.	Annual peak demand reduction:	N/A
	Fraction of total peak demand:	N/A
	Annual kWh reduction:	N/A
	Fraction of total KWh use:	N/A
	Was the savings target reached:	N/A
25.	Cost per unit of peak demand reduction:	N/A
26.	Overall satisfaction:	Very satisfied
27.	Aspects in need of improvement:	Dealer cooperation, customer interest
28.	Aspects most successful:	Easy to implement, helped consumers make energy-conscious decisions, improved customer satisfaction, good public relations, stimulated market for efficient appliances, created trade ally support
29.	Problems identified in a dealer evaluation:	N/A
30.	Problems identified in a consumer evaluation:	N/A
31.	Does the utility plan to continue the program:	Yes
	If so, what changes will be made:	Increased promotion

Appendix B

UTILITIES PARTICIPATING IN SURVEY

Appendix B

UTILITIES PARTICIPATING IN SURVEY

Utility	Rebate? Yes	No	N/A*	Efficiency Program? Yes	No
Alabama Power Co.		X			
Alpena Power Co.		X			
American Electric Power			X		
Anaheim Public Utilities Dept.		X			
Appalachian Power Co.		X			
Arizona Public Service Co.	X			X	
Atlantic City Electric Co.	X			X	
Austin Resource Management Dept.	X			X	
Baltimore Gas and Electric Co. Inc.		X			
Bangor Hydro Electric Co.			X		
Black Hills Power and Light Co.		X			
Bonneville Power Administration	X			X	
Carolina Power and Light Co.	X				X
Centel Corporation		X			
Central Hudson Gas and Electric Corp.	X			X	
Central Illinois Light Co.			X		
Central Illinois Public Service Co.			X		
Central Louisiana Electric Co. Inc.		X			
Central Maine Power Co.	X			X	
Central Power and Light Co.	X			X	
Central Vermont Public Servce			X		
Chattanooga Electric Power Board	X				X
Cheyenne Light, Fuel and Power Co.		X			
Cincinnati Gas and Electric Co.		X			
City of Riverside Public Utilities Dept.		X			
City of Palo Alto			X		
City Water, Light and Power	X			X	

Utility	Rebate? Yes	No	N/A	Efficiency Program? Yes	No
City Public Service of San Antonio	X			X	
Clark County Public Utilities District		X			
Cleveland Electric Illuminating Co.		X			
Colorado Springs Dept. of Utilities		X			
Columbus & Southern Ohio Electric Co.			X		
Commonwealth Edison Company		X			
Commonwealth Electric Company	X			X	
Connecticut Light and Power	X			X	
Conowingo Power Co.		X			
Consolidated Edison Co. of New York, Inc.	X			X	
Dayton Power and Light Co.		X			
Delmarva Power	X			X	
Detroit Edison Co.		X			
Duke Power Co.		X			
Duquesne Light Co.		X			
Eastern Utilities Associates		X			
Edison Sault Electric Co.			X		
Empire District Electric Co.		X			
Firelands Electric Corp.	X				X
Fitchburg Gas and Electric			X		
Florida Power & Light Co.	X			X	
Gainesville Regional Utilities	X			X	
Georgia Power Company	X			X	
Green Mountain Power		X			
Gulf Power Co.	X			X	
Gulf States Utilities	X			X	
Hawaii Electric Light Co., Inc.		X			
Hawaiian Electric Co., Inc.		X			
Houston Lighting and Power			X		
Idaho Power	X			X	
Indiana and Michigan Electric Co.		X			
Indianapolis Power and Light Co.		X			
Interstate Power Co.		X			
Iowa-Illinois Gas and Electric Co.		X			

Utility	Rebate? Yes	No	N/A	Efficiency Program? Yes	No
Iowa Power and Light Co.	X			X	
Iowa Southern Utilities	X			X	
Jacksonville Electric Authority		X			
Jersey Central Power and Light Co.	X			X	
Kansas City Power and Light Co.		X			
Kansas Gas and Electric Co.			X		
Kansas Power and Light Gas Service		X			
Kentucky Power Co.		X			
Kentucky Utilities Co.		X			
Knoxville Utilities Board	X				X
Lincoln Electric System	X			X	
Little Rock Power and Light			X		
Los Angeles Dept. of Water & Power		X			
Louisiana Power and Light Co.		X			
Louisville Gas and Electric Co.		X			
Madison Gas and Electric Co.	X			X	
Maui Electric Co. Ltd.		X			
Memphis Light, Gas & Water Division		X			
Metropolitan Edison Co.	X			X	
Michigan Power Co.		X			
Midwest Electric Cooperative, Inc.	X			X	
Minnesota Power		X			
Mississippi Power & Light Co.		X			
Monongahela Power Co.			X		
Montana-Dakota Utilities Co.		X			
Montana Power Co.			X		
Nashville Electric Service		X			
Nebraska Public Power District	X				X
Nevada Power Co.	X			X	
New England Electric	X			X	
New Orleans Public Service			X		
Newport Electric Corp.		X			

Utility	Rebate? Yes	No	N/A	Efficiency Program? Yes	No
New York Power Authority			X		
New York State Electric & Gas Corp.	X			X	
Niagara Mohawk Power Corp.	X			X	
Northern Indiana Public Service Co.	X			X	
Northern States Power Co.	X			X	
Northwestern Public Service Co.		X			
Ohio Edison Co.		X			
Ohio Power Co.			X		
Oklahoma Gas and Electric Co.	X			X	
Omaha Public Power District		X			
Orange & Rockland Utilities, Inc.	X			X	
Orlando Utilities Commission		X			
Otter Tail Power Co.	X			X	
Pacific Gas and Electric Co.	X			X	
Pacific Power and Light Co.	X			X	
Pennsylvania Electric Co.	X			X	
Pennsylvania Power Co.			X		
Pennsylvania Power and Light Co.	X			X	
Philadelphia Electric Co.		X			
Portland General Electric Co.	X			X	
Potomac Electric Power Co.	X			X	
Potomac Edison Co.	X			X	
Public Service Co. of Colorado		X			
Public Service Co. of Indiana		X			
Public Service Co. of New Hampshire		X			
Public Service Co. of New Mexico			X		
Public Service Co. of Oklahoma	X			X	
Public Service Electric & Gas	X			X	
Puerto Rico Electric Power Authority		X			
Puget Sound Power and Light Co.		X			
Rochester Gas and Electric Corp.	X				X
Sacramento Municipal Utility District	X			X	
St. Joseph Light and Electric			X		
Salt River Project	X			X	

Utility	Rebate? Yes	No	N/A	Efficiency Program? Yes	No
San Diego Gas and Electric	X				X
Savannah Electric Power			X		
Seattle City Light	X			X	
Sierra Pacific Power Co.	X			X	
Snohomish County Public Utility District	X			X	
Southern California Edison Co.	X			X	
South Carolina Public Service Authority		X			
Southern Company Services		X			
Southern Indiana Gas and Electric			X		
Southwestern Electric Power Co.		X			
Southwestern Electric Service			X		
Superior Water, Light & Power		X			
Tacoma Department of Utilities		X			
Tampa Electric Co.	X			X	
Tennessee Valley Authority	X			X	
Texas-New Mexico Power Co.			X		
Texas Utilities Electric Co.	X			X	
Toledo Edison Co.			X		
UGI Corp. Luzerne Electric Division		X			
United Illuminating Co.	X			X	
Upper Peninsula Power Co.		X			
Utah Power and Light Co.		X			
Verdigris Valley Electric Coop.	X			X	
Washington Water Power		X			
West Penn Power Co.		X			
West Texas Utilities Co.	X			X	
Western Illinois Electric Coop.		X			
Wisconsin Electric Power Co.	X			X	
Wisconsin Power and Light Co.	X			X	
Wisconsin Public Service Corp.	X			X	
TOTAL SURVEYED - 157	66	66	25	59	7
TOTAL RESPONSES - 132					

* N/A indicates that the utility did not respond to the survey.

Appendix C

REBATE PROGRAM QUESTIONNAIRE

Appendix C

REBATE PROGRAM QUESTIONNAIRE

Please return the questionnaire by October 3, 1986 to:

Consumer Energy Council of America
2000 L Street, Suite 802
Washington, D.C. 20036

Contact Persons:

Ellen Berman, CECA, (202) 659-0404
Howard Geller, ACEEE, (202) 429-8873

Thank you in advance for your time and help.

****

PART I: GENERAL BACKGROUND

Date: _____

Name of Utility: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Contact Person: _____

Title: _____

Phone: _____

Please check the appropriate blank.

1. We DO NOT now have and NEVER have had a rebate incentive program. _____

   If you have NEVER had, and do NOT now have, a rebate program, complete this page only and return it to CECA.

2. We DO have or have had a rebate incentive program. _____

   If you do have, or have had, a rebate program, please go to Page 2 and continue with the questionnaire.

****

PART II: REBATE INCENTIVE PROGRAMS

If you do have a rebate program in progress, or, if you had a rebate program that was discontinued within the last year, please complete PARTS II and III below and return all forms to CECA.

Also, please send all current (or most recent) descriptions, evaluations, and other literature available on your utility's appliance rebate program(s) to CECA when you return the questionnaire.

Name of Utility: _____

1. Please fill in the appropriate blanks for each appliance for which you have offered a rebate program since 1983.

APPLIANCE & EQUIPMENT	BEGIN (date)	END (date)	IN PROGRESS (please check)
Residential			
Refrigerator/Freezer	_____	_____	_____
Freezer	_____	_____	_____
Room Air Conditioner	_____	_____	_____
Central Air Conditioner	_____	_____	_____
Heat Pumps	_____	_____	_____
Furnaces	_____	_____	_____
Water Heater	_____	_____	_____
Lightbulb	_____	_____	_____
Other (specify) _____	_____	_____	_____
Commercial & Industrial			
HVAC	_____	_____	_____
Lighting	_____	_____	_____
Motors	_____	_____	_____
EMS Equipment	_____	_____	_____
Refrigeration	_____	_____	_____
Other (specify) _____	_____	_____	_____

Complete PART III, "Specific Appliance Rebate Program Questionnaire," for each rebate program now IN PROGRESS or COMPLETED WITHIN THE LAST YEAR. If more than one product are included in the same program, complete PART III once and refer to different products where appropriate. If you have different rebate programs for different appliances and customer classes, please make additional copies of PART III and complete one copy for each rebate program.

****

PART III: SPECIFIC APPLIANCE REBATE PROGRAM QUESTIONNAIRE

Name of Utility: _____

Please specify the customer class and type of appliance(s) covered under this rebate program:

A. Program Design and Description

1. What is the official title of this rebate program?

_____

2. How extensive is the rebate program? Check all that apply.

Pilot	_____
Full Scale	_____
Limited geography	_____
All service territory	_____

3. Who receives the rebate payment? Check all categories that receive rebates. If "other," please specify.

Residential Consumers	_____
Appliance Dealers	_____
Appliance Manufacturers	_____
Home Builders	_____
Small Business, commercial	_____
Big Business, industrial	_____
Landlords	_____
Institutions (school, hospital, etc.)	_____
Non-profit Community Group	_____
Other (specify)	_____

4. Who completes the rebate application? Check all that apply. If "other," please specify.

Consumer	_____
Dealer	_____
Utility representative	_____
Other (specify)	_____

5. What type of rebate is offered for this appliance? Check all that apply. If "other," please specify.

Cash to customer	_____
Cash to dealer	_____
Coupons to customer	_____
Coupons to dealer	_____
Bill reduction	_____
Other: (specify)	_____

6. Is there a minimum energy efficiency level (e.g., minimum EER or SEER, etc.) required in order for this appliance to receive a rebate? If so, what is it? If a complex procedure or table is needed to determine the minimum energy efficiency level, please attach it to the questionnaire.

_____
_____
_____
_____

7. What are the rebate amounts offered for this appliance? Please specify the amount per unit of capacity or level of efficiency when appropriate. If a complex procedure or table is needed to determine the rebate amount, please attach it to the questionnaire.

_____
_____
_____
_____

8. Which of the following best describes the basis for setting the rebate amounts? Please indicate order of importance by putting numbers in the blanks (i.e., 1 = most important, 2 = second most important, etc.). If "other," please specify.

Benefit to utility from avoided capacity costs. _____
Benefit to utility from avoided energy costs. _____
Extra first cost for qualifying equipment. _____
Amount deemed sufficient to alter consumers' purchasing decisions _____
Arbitrary amount _____
Other (specify) _____
_____
_____

9. Are there organizations other than the utility which participated in the design and/or implementation of the rebate program? If yes, please check those involved.

Yes _____ No _____

Government Agencies _____
Appliance Manufacturers _____
Manufacturers' or Retailers' organizations _____
Consumer groups _____
Consulting firms _____
Other (specify): _____

10. Who proposed the rebate program?

Utility _____
Regulatory commission _____
Consumer group _____
Other (specify): _____

11. Is the rebate program designed in a way that does not penalize non-participants (i.e., was a "no losers" test used when designing the program)?

Yes _____ No _____

12. How is funding for the program obtained? Check all that apply. If "other," please specify.

Included in the rate base _____
Expensed as an operating cost _____
Municipal revenue bonds _____
Other: (specify) _____
_____
_____

13. What is the current (or most recent) annual budget for this program?

_____

14. What does the utility hope to accomplish with this program? Please indicate order of importance by putting numbers in the blanks (i.e., 1 = most important, 2 = second most important, etc.). If "other," please specify.

Reduce peak load for utility _____
Reduce base load for utility _____
Level the load for utility _____
Increase market share _____
Promote energy efficient appliances _____
Improve community relations _____
Further local economic development _____
Satisfy regulatory commission _____
Determine program feasibility _____
Other: (specify) _____ _____
_____

B. Program Evaluation and Results

15. a. Has the rebate program been evaluated? Yes _____ No _____

b. If yes, please supply the dates of the last (or most recent) evaluation _____

c. If no, is there an evaluation planned for the future?

Yes _____ No _____ When? _____

d. How often does the utility evaluate (or plan to evaluate) this program?

_____
_____
_____

16. Who performed the last (or most recent) evaluation?

In-house, program office _____
In-house, evaluation department _____
Outside firm: _____
Other: (specify) _____

17. What types of evaluation(s) were conducted or planned? Check all that apply. If "other," please specify.

Questions on application form _____
Survey of applicants who have already received the rebate _____
Survey of all customers _____
Survey of dealers _____
Quantitative evaluation of energy savings _____
Quantitative evaluation of cost effectiveness _____
Other: (specify) _____

18. What is the total number of rebates awarded through this program?

Last 12 months of program _____
Program to date _____

19. a. What percentage of the total number of appliances sold in your area could qualify for rebates?

1-10 _____	40-50 _____	70-80 _____	90-100 _____
20-30 _____	50-60 _____	80-90 _____	Don't know _____
30-40 _____	60-70 _____		

b. If responding other than "don't know," what is the basis for this answer?

_____

c. Have you attempted to estimate the additional number of purchases of energy-efficient models as a result of your program?

Yes _____ No _____

d. If yes, please explain: _____

_____

20. What was the cost of this program during the most recent twelve month period (or a portion thereof) for which data is available? Please state time period if less than twelve months.

Number of months: _____
Rebates paid ($): _____
Administrative cost: _____
Total cost: _____

21. a. During the most recent twelve month period for which data is available, what were the peak load and total energy savings that the utility attributed to the rebate program?

Peak MW _____ kWh _____ Don't know _____

b. Did the utility achieve its savings targets with these figures?

Yes _____ No _____ Don't know _____

c. For comparison, what was the utility's **total** peak demand and KWh sales during the most recent twelve month period for which data is available?

Peak MW _____ KWh _____ Don't know _____

22. What is the utility's overall satisfaction with the rebate program?

Very satisfied _____ Fairly satisfied _____ Not satisfied _____

23. In the opinion of the utility, what aspects of the rebate program need improvement? Check all that apply and, where appropriate, please specify and comment.

		Additional Comments
Administrative costs	_____	_____
Marketing and public relations	_____	_____
Application process	_____	_____
Efficiency labels	_____	_____
Dealer cooperation	_____	_____
Cost-effectiveness	_____	_____
Customer interest	_____	_____
Rebate amount	_____	_____
Complexity of program	_____	_____
Other (specify):	_____	_____

24. In the opinion of the utility, what aspects of the rebate program are most successful? Check all that apply and, where appropriate, please specify and comment.

		Additional Comments
Easy to implement	_____	_____
Helped consumers make energy-conscious decisions	_____	_____
Improved customer satisfaction	_____	_____
Good public relations	_____	_____
Stimulated market for efficient appliances	_____	_____
Other (specify):	_____	_____

25. If you have completed a dealer evaluation on the rebate program, please specify what problems the appliance dealers mention most often. Check all that apply. If "other," please specify.

Inhibits quick sale of product	_____
Application too cumbersome	_____
Energy efficiency labels too confusing	_____
Dealers confused	_____
Customers not interested	_____

Rebate amount too low _____
Target audience too narrow _____
Not enough qualifying models _____
Program interferes with marketing strategies _____
Other (specify): _____

_____

26. If you have completed a customer evaluation on the rebate program, please specify what problems your customers mention most often. Check all that apply. If "other," please specify.

Qualifying models not readily available _____
Application process too cumbersome _____
Efficiency labels too confusing _____
Dealers not helpful _____
Dealers uninformed on energy efficiency _____
Energy efficiency not important _____
Rebate amount too low _____
Other (specify): _____

_____

27. a. Does the utility plan to continue the program? Yes _____ No _____

b. If yes, what (if any) changes will be made? Check all that apply. If "other," please specify.

Lower the minimum efficiency level or raise the maximum annual energy cost _____
Raise the minimum efficiency level or lower the maximum annual energy cost _____
Different type of rebate _____
Different amount of rebate _____
Different target audience _____
Other (specify): _____

_____

_____

28. Additional Comments: _____

_____

_____

_____

Thank you for your time and help! We believe the information that you have provided will be of great help to our project. You will receive a copy of our rebate program compendium as soon as it is available.

Appendix D

LIST OF VARIABLES

Appendix D

LIST OF VARIABLES

Name	Definition	Coding
OWN	Type of Ownership	0=IOU 1=Non IOU
COOL	Program Including Cooling Equipment	0=Yes 1=No
PROG	Program Includes Commercial	0=Res 1=Res/Com
RSTART	Residential Program Start	Year
CSTART	Commercial Program Start	Year
SCALE	Program Scale	0=Pilot 1=Full
AREA	Program Covers Service Territory	0=Limited 1=Full
PURCH	Purchaser Rebates	0=No 1=Yes
SELLER	Seller Rebates	0=No 1=Yes
N.ENG.	Utility in New England	0=No 1=Yes
M.ATL.	Utility in Mid-Atlantic	0=No 1=Yes
S.ATL.	Utility in South-Atlantic	0=No 1=Yes
S.CENT.	Utility in South-Central	0=No 1=Yes
ENCENT.	Utility in East-North-Central	0=No 1=Yes
WNCENT.	Utility in West-North-Central	0=No 1=Yes
MTN.	Utility in Mountain	0=No 1=Yes
PAC.	Utility in Pacific	0=No 1=Yes
RFR	Program Gives Rebate for Residential Refrigerator	0=No 1=Yes
FRZ	Program Gives Rebate for Residential Freezer	0=No 1=Yes
RAC	Program Gives Rebate for Residential Room Air Conditioner	0=No 1=Yes
CAC	Program Gives Rebate for Residential Central Air Conditioner	0=No 1=Yes
HP	Program Gives Rebate for Residential Heat Pump	0=No 1=Yes
FUR	Program Gives Rebate for Residential Furnace	0=No 1=Yes
DHW	Program Gives Rebate for Residential Hot Water	0=No 1=Yes
RLGHT	Program Gives Rebate for Residential Lighting	0=No 1=Yes
ROTH	Program Gives Rebate for Residential Other	0=No 1=Yes
HVAC	Program Gives Rebate for Commercial HVAC	0=No 1=Yes
CLGHT	Program Gives Rebate for Commercial Lighting	0=No 1=Yes
MOTOR	Program Gives Rebate for Commercial Motor	0=No 1=Yes
EMS	Program Gives Rebate for Commercial EMS	0=No 1=Yes
CFRIG	Program Gives Rebate for Commercial Refrigerator	0=No 1=Yes
COTH	Program Gives Rebate for Commercial Other	0=No 1=Yes
MINRFR	Minimum Rebate Residential Refrigerator	$/Appliance
MAXRFR	Maximum Rebate Residential Refrigerator	$/Appliance
MINFRZ	Minimum Rebate Residential Freezer	$/Appliance
MAXFRZ	Maximum Rebate Residential Freezer	$/Appliance
MINRAC	Minimum Rebate Residential Air Conditioner	$/Appliance

MAXRAC	Maximum Rebate Residential Air Conditioner	$/Appliance
MINCAC	Minimum Rebate Residential Central Air Conditioner	$/Appliance
MAXCAC	Maximum Rebate Residential Central Air Conditioner	$/Appliance
MINHP	Minimum Rebate Residential Heat Pump	$/Appliance
MAXHP	Maximum Rebate Residential Heat Pump	$/Appliance
MINFUR	Minimum Rebate Residential Furnace	$/Appliance
MAXFUR	Maximum Rebate Residential Furnace	$/Appliance
MINRHW	Minimum Rebate Residential Hot Water	$/Appliance
MAXRHW	Maximum Rebate Residential Hot Water	$/Appliance
MINRLGT	Minimum Rebate Residential Lighting	$/Appliance
MAXRLGT	Maximum Rebate Residential Lighting	$/Appliance
MINROTH	Minimum Rebate Residential Other	$/Appliance
MAXROTH	Maximum Rebate Residential Other	$/Appliance
MINHVAC	Minimum Rebate Commercial HVAC	$/Appliance
MAXHVAC	Maximum Rebate Commercial HVAC	$/Appliance
MINCLGT	Minimum Rebate Commercial Lighting	$/Appliance
MAXCLGT	Maximum Rebate Commercial Lighting	$/Appliance
MINMOTOR	Minimum Rebate Commercial Motor	$/Appliance
MAXMOTOR	Maximum Rebate Commercial Motor	$/Appliance
MINEMS	Minimum Rebate Commercial EMS	$/Appliance
MAXEMS	Maximum Rebate Commercial EMS	$/Appliance
MINCOTH	Minimum Rebate Commercial Other	$/Appliance
MAXCOTH	Maximum Rebate Commercial Other	$/Appliance
EQUIP	Equipment Size a Factor in Rebate Amount	0=No 1=Yes
EFF	Efficiency a Factor in Rebate Amount	0=No 1=Yes
CACSEER	Minimum Efficiency CAC SEER	
RACSEER	Minimmum Efficiency RAC SEER	
HPSEER	Minimum Efficiency HP SEER	
HPCOP	Minimum Efficiency HP COP	
AVCAP	Avoided Capacity Cost Basis for Setting Amount	0=No 1=Yes
AVENC	Avoided Energy Cost Basis for Setting Amount	0=No 1=Yes
FSTCST	First Costs Basis for Setting Amount	0=No 1=Yes
CONSPFC	Influence Consumer Decision Basis for Setting Amount	0=No 1=Yes
AEB	Arbitrary Cost Basis for Setting Amount	0=No 1=Yes
GOVT	Government Participates in Program	0=No 1=Yes
APPL	Appliance Manufacturers Participate in Program	0=No 1=Yes
MAN	Manufacturer/Dealer Organizations Participate in Program	0=No 1=Yes
CONSMR	Consumer Groups Participate in Program	0=No 1=Yes
CONSULT	Consulting Firms Participate in Program	0=No 1=Yes
OTH	Other Groups Participate in Program	0=No 1=Yes
UTIL	Utility Proposed Program	0=No 1=Yes
PUC	Public Utility Commission Proposed Program	0=No 1=Yes
CGRP	Consumer Groups Proposed Program	0=No 1=Yes
OTHER	Other Groups Proposed Program	0=No 1=Yes
LOSER	No Loser Test Applied	0=No 1=Yes
FUND	Source of Funds	0=Rate Base 1=Operating cost
RBUDG	Residential Budget	($ mil)
CBUDG	Commercial Budget	($ mil)
PEAK	Objective to Reduce Peak Load	0=No 1=Yes

BASE	Objective to Reduce Base Load	0=No	1=Yes
LEVEL	Objective to Level Load	0=No	1=Yes
MKT	Objective Is to Establish Market for Product	0=No	1=Yes
PROMO	Objective Is to Promote Efficient Appliances	0=No	1=Yes
COMREL	Objective Is to Improve Community Relations	0=No	1=Yes
ECON	Objective Is to Further Economic Development	0=No	1=Yes
REGUL	Objective Is to Satisfy Regulatory Commission	0=No	1=Yes
FEAS	Objective Is to Determine Feasibility	0=No	1=Yes
OTHRR	Other Purpose		
QUEST			
SUNAP			
ALLCUST			
DEAL			
SAVE			
COSTEP			
OTHEVAL			
FRAC	Percent of Qualifying Sales		
INCIMP	Estimate Incremental Impact	0=No	1=Yes
FRAAD	Percent of Budget to Administrative Cost		
RESPK	Residential Peak Reduction	Megawatts	
COMPK	Commercial Peak Reduction	Megawatts	
RESANN	Residential Annual Reduction	KWH	
COMANN	Commercial Annual Reduction	KWH	
RESFRAC	Fraction of Residential Use Reduced		
COMFRAC	Fraction of Commercial Use Reduced		
RESTGT	Residential Target Met	0=No	1=Yes
COMTGT	Commercial Target Met	0=No	1=Yes
CSTRFR	Cost for Residential Refrigerator	$/KW	
CSTFRZ	Cost for Residential Freezer	$/KW	
CSTRAC	Cost for Residential Air Conditioner	$/KW	
CSTCAC	Cost for Residential Central Air Conditioner	$/KW	
CSTHP	Cost for Residential Heat Pump	$/KW	
CSTFUR	Cost for Residential Furnace	$/KW	
CSTRHW	Cost for Residential Hot Water	$/KW	
CSTRLGHT	Cost for Residential Light	$/KW	
CSTROTH	Cost for Residential Other	$/KW	
CSTCHVAC	Cost for Commercial HVAC	$/KW	
CSTCLGHT	Cost for Commercial Light	$/KW	
CSTMOTOR	Cost for Commercial Motor	$/KW	
CSTEMS	Cost for Commercial EMS	$/KW	
CSTFRIG	Cost for Commercial Refrigerator	$/KW	
CSTOTH	Cost for Commercial Other	$/KW	
CSTGRBS	Cost Total Residential	$/KW	
CSTGCBS	Cost Total Commercial	$/KW	
SAT RFR	Satisfaction Programs with Refrigerators	0= Not Satisfied 1= Fairly Satisfied 2= Very Satisfied	
SAT FRZ	Satisfaction Programs with Freezers	"	
SAT RAC	Satisfaction Programs with Room Air Conditioners	"	
SAT CAC	Satisfaction Programs with Central Air Conditioners	"	
SAT HP	Satisfaction Programs with Heat Pumps	"	
SAT FUR	Satisfaction Programs with Furnaces	"	
SAT DHW	Satisfaction Programs with Hot Water	"	

SATLIGHT	Satisfaction Programs with Light	0= Not Satisfied 1= Fairly Satisfied 2= Very Satisfied
SATROTH	Satisfaction Programs with Other	"
SATHWR	Satisfaction Programs with Commercial HVAC	"
SATCLIGHT	Satisfaction Programs with Commercial Lighting	"
SATCFRIG	Satisfaction Programs with Commercial Refrigerator	"
SATCOTH	Satisfaction Programs with Commercial Other	"
IMPROV	Reduces Administrative Cost	0=No 1=Yes
IMPUCT	Improve Public Relations	" "
IMPAPP	Improve Application Process	" "
IMPLAB	Improve Efficiency Labels	" "
IMPCOOP	Improve Dealer Cooperation	" "
IMPCST	Improve Cost Effectiveness	" "
IMMPINT	Improve Customer Interest	" "
IMPAMT	Improve Rebate Amount	" "
IMPCOM	Improve Simplify Program	" "
IMPOTH	Improve Other	" "
SUCIMP	Easy to Implement	" "
SUCDBC	Influenced Consumer Behavior	" "
SUCSATE	Improved Customer Satisfaction	" "
SUCPR	Good Public Relations	" "
SUCMKT	Stimulated Market for Appliances	" "
SUCOTH	Other Success	" "
PROBSAC	Inhibits Quick Sale	" "
PROBOPP	Application Cumbersome (Residential)	" "
PROBLAB	Efficiency Label Confusing	" "
PROBCON	Dealers Confused	" "
PROBWUST	Customers Not Interested	" "
PROBREB	Rebate Too Low	" "
PROBTGT	Target Audience Too Narrow	" "
PROBMOD	Too Few Qualifying Models	" "
PROBMKT	Interferes with Marketing	" "
PROBOTH	Other Problems	" "
COMMOD	Qualifying Models Unavailable (Commercial)	" "
COMAPP	Application Cumbersome (Commercial)	" "
COMCON	Labels Confusing (Commercial)	" "
COMDEAL	Dealers Unhelpful (Commercial)	" "
COMUNIN	Dealers Uninformed (Commercial)	" "
CONEFF	Efficiency Unimportant (Commercial)	" "
CONREB	Rebate Too Low	" "
CONOTH	Other Problems (Commercial)	" "
CONRFR	Continue Residential Refrigerator	0=No 1=Yes, as is 2=Lower minimum efficiency 3=Raise minimum efficiency 4=N/A 5=Different amount 6=Different target audience 7=Other change

CONFRZ	Continue Residential Freezer	0=No 1=Yes, as is 2=Lower minimum efficiency 3=Raise minimum efficiency 4=N/A 5=Different amount 6=Different target audience 7=Other change
CONRAC	Continue Residential Room Air Conditioner	"
CONCAC	Continue Residential Central Air Conditioner	"
CONHP	Continue Residential Heat Pump	"
CONFUR	Continue Residential Furnace	"
CONDHW	Continue Residential Hot Water	"
CONRLGT	Continue Residential Lighting	"
CONROTH	Continue Residential Other	"
CONHVAC	Continue Commercial HVAC	"
CONCLGHT	Continue Commercial Lighting	"
CONMOTOR	Continue Commercial Motor	"
CONEMS	Continue Commercial Ems	"
CONFRIG	Continue Commercial Refrigerator	"
CONCOTH	Continue Commercial Other	"