

EVALUATING A COMMUNITY BASED PRIVATE/PUBLIC PARTNERSHIP  
IN RESIDENTIAL ENERGY CONSERVATION

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ABSTRACT

Twelve public and private organizations serving Portland, Maine collaborated to establish a comprehensive, one-stop residential conservation program model during the fall and winter of 1984-5. Portland's Weatherize Portland Planning Task Force launched a demonstration program to test the model in two neighborhoods from February to May 1985. In September 1985 the U.S. Department of Energy (DOE) funded an evaluation of the planning process and the demonstration program. The Technical Development Corporation, with two subcontractors--Energy Systems Research Group and Einstein Consultants--have undertaken this evaluation.

The evaluation team operated in the context of the following goals set forth by the Maine Office of Energy Resources, which convened the Portland Task Force: (1) to promote the use of and improvement in the RCS audit; (2) to provide hands-on training in the installation of low cost infiltration measures; (3) to stimulate additional purchase of low cost measures by providing a free kit of conservation materials; (4) to generate loans for energy improvements; (5) to coalesce existing program providers in the offering of a more comprehensive and coordinated package of services; and (6) to gain experience in the planning and implementation of a weatherization program. The planning participants requested the evaluation before committing additional resources to an expanded Maine program; DOE was also interested in program model refinements and potential applications in other communities.

The collaborative nature of the planning process, the funding diversity, the coordination of existing program delivery mechanisms, the community-based origins and the impressive participation rates by tenants, landlords and homeowners make the Weatherize Homes in Portland program (WHIP) an attractive model for replication in other locales. This evaluation investigated the nature and extent of participation in the program, probed the demonstration program's strengths and weaknesses, and makes recommendations for improving the model for future adaptations in Maine and elsewhere.

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## I. BACKGROUND

Residential energy conservation programs, which have received almost \$200 million in annual Federal support exclusive of the Federal mandate for the utility-sponsored Residential Conservation Service (RCS), are experiencing significant budgetary cutbacks. The expiration of the RCS mandate triggers a diminution of state-mandated audit support amounting to many millions of additional dollars annually.

Yet the opportunities for energy efficient investments by residential households are far from exhausted. While United States households have made impressive gains in conserving energy over the past decade--20-25% consumption drops are reported in Residential Energy Consumption Survey data--1984 consumption increase indicates in part that the stabilization of oil and gas prices have lulled Americans into thinking that energy costs are no longer a serious problem. A 1986 study of future oil availability and price projections authored by The Energy Environmental Policy Center at Harvard University's John F. Kennedy School of Government suggests we are relaxing our vigilance prematurely; shortages and significant price increases may afflict the U.S. again early in the next decade.<sup>1</sup>

Furthermore, several vulnerable populations are still in need of relief from energy costs, regardless of the current moderating trends. The poor, the elderly and the renter have been unable to enjoy the energy efficiency gains which have accrued to the middle-class homeowner. The federal cutbacks in human services funding have exacerbated the financial hardships created by \$100-200 fuel bills during winter months in cold climates.

These national trends suggest that (1) energy conservation programs are still very important priorities; (2) attention should focus on serving the vulnerable populations not served well to date; and (3) innovative local solutions utilizing a variety of primarily non-federal government and private resources are required to meet the challenges ahead.

Two other realities lend some urgency to the current situation. First, there is increasing evidence that states and communities administer a large number of fragmented, uncoordinated energy conservation programs. Low program participation rates, difficulty in marketing financing programs, and poor quality control techniques are frequent observations of researchers examining RCS and financing programs nationwide.<sup>2</sup> These problems, if not confronted, will lead to a withdrawal of utility and state financial support for conservation programs.

Second, the Exxon and impending Stripper Well oil overcharge awards to the states represent one-time, unprecedented infusions of funding for relatively flexible energy efficiency programming opportunities. The \$2.1 billion in Exxon monies are now being allocated among five federally mandated energy conservation programs. Exxon and anticipated Stripper Well funds may be creatively targeted to meet pressing energy efficiency priorities; they might also be deployed less imaginatively and less effectively to merely supplement or supplant existing energy conservation programs or, in the Stripper Well situation, for purposes not related to energy conservation. To the extent that the states decide to invest these monies in energy conservation programs, the availability of viable program designs and effective delivery mechanisms is critical. Indeed, state interest in conservation programs could be stimulated through increasing awareness of innovative cost-effective program models.

In 1984-5 a dozen organizations serving Portland, Maine set forth to build a comprehensive one-stop conservation program model. In the spring of 1985 a Planning Task Force launched a demonstration program to test the model. In September 1985 the U. S. Department of Energy funded an evaluation of the planning process and the demonstration program. The Technical Development Corporation, with subcontract help from the Energy Systems Research Group and Einstein Consultants, has undertaken this evaluation.

## II. INTRODUCTION TO WEATHERIZE HOMES IN PORTLAND (WHIP)

In early 1984 the Maine Office of Energy Resources (OER) contacted the Technical Development Corporation (TDC) and the Maine Audubon Society (MAS) for collaboration in the establishment of a participatory planning process to design a comprehensive, cost-effective residential energy conservation program which would motivate and assist Maine households to undertake energy efficiency investments.

TDC had just completed a Ford Foundation-sponsored examination of successful community-based residential conservation programs. MAS had recently completed the staffing of a three-year community energy planning process in Portland. OER was interested in following up this planning process to develop a plan for coordinating numerous residential conservation programs available to consumers in Portland.

The need for such a planning process and program design was compelling: despite a dozen programs providing low-cost materials installation, and financing, sponsored by the local gas and electric utilities, city and state agencies and the local community action agency, fully 90% of Portland households lacked the full complement of attic insulation, storm doors and windows and infiltration measures.<sup>3</sup> And despite the stabilization of oil prices, Portland

households were paying almost \$1500 yearly for fuel.<sup>4</sup>

The most attractive of the conservation programs--Central Maine Power's Water Heater Blankets installation--enjoyed a 21% participation rate among the City's eligible households. By contrast, the Central Maine Power (CMP) audit program had attracted fewer than 4% of eligible households per year; the various City, utility and state energy financing programs had participation of less than 1% of eligible households. Moreover, the conservation audit and financing programs for which most City households were eligible had attracted disproportionately low participation rates from low income households--consistent with experience elsewhere in the nation.

As the planning process evolved, the need for a demonstration weatherization program became increasingly clear. Table 1 describes all of the energy conservation programs available in Portland during 1985.

### III. DEMONSTRATION

#### A. Outreach

The object of the WHIP Demonstration was to attract people to one of six neighborhood energy conservation workshops in March and April 1985. The workshops would expose participants to weatherization training; provide free weatherstripping, caulking and other infiltration materials worth \$35 at retail prices; and introduce companion audit, water heater jacket installation and financing programs. The two major departures from previous efforts were the neighborhood-based outreach and the coordination of existing programs.

Neighborhood outreach included direct mail, telemarketing, leaflet drops, posters, newspaper feature articles, radio, television and cable public service announcements, and word-of-mouth. Neighborhood organizations also utilized their networks to contact people. Every resident in the neighborhood was exposed to several contacts with the program announcements.

#### B. The Neighborhoods

The Riverton neighborhood is a primarily suburban section of Portland. Most of its residents own their single-family, wood frame homes. Fully one-half of the housing stock was built after 1960. In 1980 the mean household income was \$18,100. Riverton has a recently organized neighborhood association active in advocating capital improvement and related issues at City Hall.

The West End neighborhood is an urban, densely populated section nearby the downtown area. The neighborhood includes many of the city's low income households, but it is also the site of much recent gentrification. The housing stock is primarily multi-family, renter-occupied, wood frame and brick construction. In sharp contrast to Riverton, 88% of the housing units were built before 1960. The mean household income in 1980 was \$10,400.5. The West End has a very active, professionally staffed, neighborhood organization. The West End Neighborhood Planning Council has long been involved in local and state low income and housing policy issues.

### C. Workshop and Conservation Services Participation

The Riverton and West End neighborhood areas targeted for the Demonstration have 2,800 housing units, of which approximately 2,200 were eligible for program participation. The remainder are in large apartment buildings and publicly owned housing projects--buildings which planners felt should be targets of a later and separate program initiative (although some apartment building owners did participate in WHIP). According to program records kept by OER:

--617 units were served in total (including 68 units referred for water heater jackets by landlords);

--549 units were served directly by WHIP (including units owned by multiple unit landlords);

--441 households attended one of six neighborhood workshops;

--393 low cost weatherization kits were distributed at workshops (441 attended the workshops, including two adults per unit for some households);

--203 CMP Residential Conservation Service (RCS) audits were requested (including 33 from one multiple-unit owner);

--107 CMP water heater jackets were requested and distributed;

--68 Northern Utilities water heater jackets were installed (includes 30 from one multiple-unit owner).

## IV. EVALUATION

### A. Methodology and Context

Six months after the demonstration program ended in April 1985, the Technical Development Corporation (TDC) contracted with the U.S. Department of Energy (DOE) to conduct an evaluation of the program. DOE and the Maine program sponsors were interested in a more thorough assessment of the program's accomplishments, cost effectiveness, and

opportunities for improvement and adaptation in other locales than that provided by OER records.

Program records, interviews with program planners and implementers and telephone surveys constitute the major data sources for the project. Under contract to TDC, the Energy Systems Research Group conducted an evaluation of the audit component and Einstein Consultants completed the interviews of the program personnel and conducted the telephone survey. The telephone survey reached a sample of, 1) workshop participants; 2) nonparticipants who were invited to workshops; 3) residents in similar neighborhoods who were not invited; and, 4) the Central Maine Power Company's Residential Conservation Service (RCS) audit recipients in the greater Portland area.

The WHIP program sought to capitalize on the RCS audit by providing an incentive to participants in the form of a free package of weatherization measures and by heavily promoting the audit and accompanying services.

The evaluation was conducted in the context of these WHIP program goals:

- To promote the use of and improvement in the RCS audit;
- To provide hands-on training in the installation of low cost measures;
- To stimulate additional purchase of low cost measures by providing a free kit of conservation devices;
- To generate loans for energy improvements;
- To coalesce existing program providers in the offering of a more comprehensive and coordinated package of services; and
- To gain experience in the planning and implementation of a weatherization program.

#### B. Evaluation Results

The principal findings of the evaluation are:

##### A. Participant Characteristics

- 1)---the workshops and related conservation programs served 25% (617 households) of the eligible population in the target neighborhood, about six times the rate of a typical RCS audit program;
- 2)---the program attracted an unusually high rate of participation--0% of total program participants, an estimated 25% of eligible households--among low-income households, (under \$15,000), in contrast to

the typical non low-income conservation program participant whose income is 25% or more above the median. By contrast, low income participation in traditional RCS programs averages less than 10%; participation in the Weatherization Assistance Program is less than 5% of the eligible households annually.<sup>6</sup>

3)--half of the surveyed participants invested an average of \$670 in out-of-pocket expenditures for additional energy improvements, saving an estimated \$2460 over the lifetime of the measures;

4)--renters and landlords participated in proportion to their distribution in the neighborhood population, a significant improvement over the national experience in attracting these two groups to conservation programs;

5)--participants were not different in their previous household energy characteristics from their nonparticipant and not-invited neighbors;

6)--76% of the workshop participants heat with oil, consistent with the proportion of oil heaters in the general population, but very different from the sample of Portland area customers surveyed who had previously received the Central Maine Power Company RCS audit--28% of whom heat with oil, while 60% have electric heat.

#### B. Participant Responses

1)--Participants and professional program observers rated the workshop quality very highly and praised the format and curriculum; 91 of 100 surveyed by telephone rated the workshops as "excellent" or "good";

2)--participants report self-installations of 70% of the materials distributed at the workshops;

3)--30% of the participants requested audits; more than 60% of those who had not previously received the water heater jackets requested them; 90% of these requesting households reported intentions to self-install the jackets, while more than 50% of those who had previously received jackets asked the utilities to install them.

#### C. Cost Effectiveness

1) The demonstration's public cost totalled \$78,000--covering staff, materials distributed and installed, loan subsidy costs, Weatherization Assistance Program installations and Central Maine Power Company audits.

2) The energy savings are estimated at \$418,000 yielding a benefit/cost ratio of 5.4.

3) Responses to the telephone survey provided the estimate that half of the participants invested an average \$670 in energy improvements withing

six months of this workshop attendance, yielding projected savings of \$2,460 for the useful lifetime of the installed measures.

4) Adding together the public and participant out-of-pocket expenditures, \$242,000 in energy improvements are expected to yield \$917,000 in energy savings benefits, an average of \$1,670 per household served over the useful lifetime of the installed measures.

#### D. Management Strengths and Weaknesses

1) Representatives of 3 state agencies, 3 community groups, 2 utilities, city hall, 3 organizations and the local community action agency contributed time and resources to start the WHIP program. Never before had so many different interests joined in a collaborative effort to promote energy conservation.

2) \$30,000 was raised for the planning process and an additional \$22,000 funded the pilot program, with thousands of volunteer hours contributed by participating utilities, agencies and organizations.

3) The planning process and program model both received praise from planning participants.

4) Organizational leadership from the Maine Office of Energy Resources was the biggest reason for the planning process's successful start and the pilot's viability, but also the primary cause of several planning and program shortcomings;

5) the absence of a strong program manager and central location for the pilot hindered implementation of some program functions, particularly accountability from neighborhood organization staff and follow-up services to workshop participants;

6) the late and lukewarm commitment from the local City government restricted the reach and continuity of the program;

7) neighborhood volunteers were not recruited, motivated or managed well; and

8) most critically, the scheduling, timing of delivery, format, and household arranging help provided by the utility audit program was not adequate for participant and WHIP program needs.

In addition to the management issues listed above, a separate assessment of the audit survey formed an integral part of the overall evaluation.

The pivotal importance of the audit in stimulating and assisting households to invest in energy efficiency improvements prompted investigation of this component of the program.

The RCS audit is vital for three reasons: (1) the audit identifies and stimulates household implementation of all the major cost-effective energy efficiency improvements; (2) the audit is a prerequisite to household participation in various financing programs; and (3) the RCS audit program is the historical vehicle, the "handle" upon which to append corollary program elements (marketing, contractor arranging, financial assistance) suitable and appropriate for utility funding. Since utilities are the most logical candidates for long-term conservation program financing and since the RCS program is simultaneously the statutory precedent, the critical financing conduit, and the key stimulant for household commitments to energy efficiency improvements, the focus on building a comprehensive, quality program is warranted.

Energy Systems Research Groups (ESRG), which conducted the investigation, concluded that the audit survey was technically sound. However, ESRG suggested the following improvements to the audit and auditing procedures:

- sign up and schedule households for an audit at the workshop
- substitute the mailed audit results with an audit format enabling an analysis at the time of the auditor visit and customer feedback on the recommendations
- provide additional assistance in arranging for the contracting and financing of the major recommendations
- emphasize to renters the advantages of low-cost, no cost measures

These are the kind of specific improvements which would enable the auditor to deliver a comprehensive, one-stop service which combines diagnostic, education, materials installation and contractor and financing arranging functions in the initial household visit.

#### V. LESSONS FOR PROGRAM ADAPTATION, EXPANSION

Consideration of a program expansion in Portland and Maine or adaptation of the model elsewhere in the country should benefit from the following suggestions:

1. The planning process should include representatives of all public and private sector parties affected by conservation programs. Omitting the participation of major "stakeholders" can cause their resentment, a failure of needed cooperation or even direct opposition to a program otherwise carefully and comprehensively planned. Conversely, including all the affected organizations increase the commitment of each to carrying out the program successfully. To the extent that all planning

participants feel they are program design co-authors, the sense of joint ownership inspires both enthusiasm and cooperation during the program implementation stage.

2. Strong, consistent leadership from one central participating organization is necessary to effect a successful conclusion to the planning process. As in most other enterprises, leadership generates the focus, the organization, and the inspiration for the participants. When conflict arises, the intervention of a strong leader is important to confront and resolve the issues in a timely and constructive manner. A critical element of good leadership is the skill of facilitating the active involvement of all participants. The State Energy Office Director brought many of these attributes to the planning process.

3. Representatives in the planning process should be in a position to secure resource and policy commitments of their superiors in a timely fashion. A necessary corollary to this recommendation is the initial selection of a senior agency representative who can commit to attending the planning meetings. Where possible, the planning process conveners should also seek participants who are both enthusiastic about the project and well respected within their own organization. Beyond the informal maneuvering to attract favored organizational participants, the planning process conveners or leaders must also emphasize explicitly at the initial meetings the groups' expectations that each organizational representative should solicit agency feedback on important issues and agency commitments for resources at the conclusion of the planning process. The Energy Office Director was quite effective in communicating these expectations at the beginning of the planning process. Since virtually every participant wanted the project to succeed and experienced periodic frustrations at delays and issues which were "a waste of time", the group soon arrived at a strong consensus around the expectations that every organization should follow through on the tentative agreements with firm commitments.

4. A capable, strong local sponsor should be identified and committed before a community-based program is launched. Without such a credible local sponsor, the administration and delivery of a planned program is in jeopardy. The City of Portland delayed its formal commitment to hosting the pilot program by seven months. This in turn delayed the planning process accordingly. Since there was no logical second choice to the City, the planning participants considered (1) establishing a new nonprofit to administer the program; and (2) delegating the administration to one of the remaining participant agencies, precipitating awkward and difficult discussions. Capacity and/or jurisdictional problems eliminated serious consideration of the latter option. The former would probably have required City Council approval and encounter further start-up delays of several months duration.

5. Resource commitments and financial support should be obtained from as many participating organizations as possible. Federal support for residential conservation programs is likely to diminish over the next several years. Both declining oil prices and the federal budget deficits contribute to a Congressional environment in which deep cuts should be anticipated. These cuts will not only curtail state energy office efforts, but also hamper support from municipalities--where existing energy programs are generally funded with federal Community Development Block Grants (CDBG).

The Exxon oil overcharge awards to the states and the impending Stripper Well decisions (anticipated in late 1986) are attractive and feasible sources for conservation program funding. Over the longer time frame, gas and electric utilities are the most promising sources of program support. They have both the resources and the motivation to participate more fully in conservation programs. State legislatures, municipalities, philanthropic organizations, corporations and oil dealers' associations are other potential providers of more modest financial support. However, utilities and future oil overcharge settlements must be considered the best sources for new programs.

6. The Residential Conservation Service (RCS) program, by virtue of its historical and substantial utility funding commitment and its mandate to assist participants implement cost-effective energy efficiency measures, is the key program element. It is the central vehicle for attaching corollary program components which provide conservation program outreach, household education and training, and financing. To work effectively the audit must

- place an emphasis on arranging contracting and financing help for customers;
- deliver recommendations at the time of the auditor visit;
- be scheduled at the time of the workshop, and delivered within a month of the workshop;
- be streamlined further and focused on low cost materials for tenants
- feature an easy-to-understand report and recommendations summary.

7. It is necessary to recruit, motivate and organize volunteers wisely.

These are the ingredients of a successful program. The commitment and hard work of the WHIP planners and implementors are other intangibles difficult to capture in a snapshot evaluation. Without the motivation and sweat provided by twenty individuals committed to making the concept work for neighborhood residents, WHIP could not have achieved so much. Exporting those qualities to other communities can only be inspired--the localities will have to generate their own vision and consortium of connected participants.

## VI. CONCLUSION

WHIP was the first program in an oil-heated region to provide a one-stop, conservation service available to all 1-4 family residents in specific neighborhoods regardless of income. It was the first conservation program in the nation to incorporate all existing conservation programs, including the low income services. Finally it was the first to gain funding support from such a varied spectrum of organizations, including oil dealers.

In attracting landlords, tenants and homeowners in rough proportion to their population in the neighborhood, WHIP achieved perhaps its most notable accomplishment. The intensive, diverse, neighborhood-based outreach strategy and the wide range of services explain this phenomenon. The quality of the workshop instruction was excellent, and the extent of participant installation of workshop materials and purchase of further conservation devices are testament to the motivation and skills imparted by WHIP personnel. The program model developed for Portland should have widespread applications elsewhere.

TABLE 1

PRE-EXISTING ENERGY CONSERVATION PROGRAMS IN PORTLAND

CENTRAL MAINE POWER CO.

NORTHERN UTILITIES

PROP  
(Community Action Agency)

	Electric heat Customers	Others	Natural Gas Customers	Others	Income Eligible	Others
<u>Free Services</u>	1. RCS audit	1. RCS audit			1. Up to \$1,500 in repairs to protect PROP Weatherization materials	
<u>Free Materials</u>					1. Oil burner tune-ups	
* \$5 installation charge	self-installed [ 1. water heater insulation jackets 2. low-flow faucet aerator 3. low-flow showerhead 4. installation of all the above*		1. water heater ins insulation		1. up to \$1600 for weatherization materials and installation	
** \$17.25 installation charge			2. pipe insulation		2. up to \$2500 to replace inefficient furnaces, boilers, & burners no cost-low cost kit	
			3. low-flow faucet aerator		3. No cost-low cost kit of weatherization materials	
			4. low-flow showerhead		4. water heater insulation jacket, pipe insulation, low-flow faucet aerator low flow showerhead	
<u>Materials For Sale</u>						
5.154		1. Water heater insulation jacket (\$16.75)*(self/ins)				
		2. installation of the above**(\$16.75)				
		3. low-cost weatherization materials including charge for materials and/or installation				
<u>Loan Programs</u>						
	1. 6% loans for 2 years on \$250-\$100					
	2. 6% loans for 4 years on \$1000-\$2000					
	3. 0% loans on \$750 if income-eligible					
<u>Information &amp; Assistance</u>						

CITY OF PORTLAND

MAINE STATE HOUSING AUTHORITY

ENERGY  
EXTENSION SERVICE

Income  
Eligible

Limited West End  
Neighborhood

Oil heat users  
presently during  
period 1973-1980

Income of  
\$20,000 or  
less

Free Services

Free Materials

Materials for  
Sale

Loan  
Programs

5.155

1. 7% homeowner loans  
for up to 10 years  
on \$3,000

(subject to credit and  
income guidelines)

1. 2% multi family  
property owner loans  
for 10 years up to  
\$5,000 or 50% of the job  
cost, whichever is less  
(only certain West End  
neighborhoods qualify)

1. 6% homeowner  
loans for 1-5  
years for \$750-  
\$1000 per unit  
(up to \$15,000  
for a 4-unit owner  
occupied structure)

1. 11% homeowner  
loans for 1-9 years  
for \$1500-\$15,000  
for home improvements  
and energy conserva-  
tion measures

Information  
&  
Assistance

1. Energy extension  
agent available to  
provide information  
and assistance

## FOOTNOTES

1. Hogan, William P. and Leiby, Paul N., Oil Market Risk Analysis, John F. Kennedy School of Government, Harvard University, December, 1985.
  
2. For examples see:
  - a. Analysis of Conservation Practices and Energy Savings In RCS-Audited Households, DHR, Incorporated, for The U.S. Department of Energy, March 1985
  - b. The Residential Conservation Service in Connecticut: Evaluation of the CONN SAVE Program, Hurst, Eric and Hu, Patricia.
  - c. Lanoue, Ron, Broadening the Market for Conservation, Technical Development Corporation, (1981) p.4.
  - d. Mitchell Rosenberg, Making RCS Work, Technical Development Corporation, (1981), Table 2. R. Bruce Hutton and Dennis L. McNeil, A Market Planning Approach to Analysis of Consumer Information for Decisionship, Interim Report, University of Denver, P. 40.
  - e. Marylander Marketing Research, Inc., RCS, Follow-Up Survey, (June, 1982), p. VIII-6
  - f. Hirst, E., 1984 "Household Energy Conservation: A Review of the Federal Residential Conservation Service," Public Administrative Review 44(5) (September/October).
  - g. Berry, L.G., 1982, The Role of Financial Incentives in Utility Sponsored Residential Conservation Programs: A Review of Customer Surveys, ORNL/CON-102, Oak Ridge National Laboratory, December.
  - h. Centaur Associates, Inc.  
1983 RCS Evaluation Highlights: Cost Effective Benefit Evaluation of the Residential Conservation Service Program.
  
3. Estimated from data compiled by Comprehensive Community Energy Management Program study (1984) of Portland, completed by Maine Audubon Society and from 1983 Residential Energy Consumption Survey (Northeast) completed by U.S. D.O.E.

4. Estimated from interviews with Central Maine Power, (1985), Maine Office of Energy Resources, (1985), and from 1983 U.S. D.O.E. Residential Energy Consumption Survey (RECS) data.
5. U.S. Bureau of the Census, Census of Population and Housing by Neighborhood Areas, 1983.
6. The Weatherization Assistance Program has averaged \$150 million yearly from FY 82-84; the Low Income Energy Assistance Program has averaged \$1.875 billion annually during the same period. The nation's approximately 25,000,000 low income households have household fuel bills which average between \$900-\$1200, according to the 1983 DOE Residential Energy Consumption Survey and a 1983 survey by the National Consumer Law Center.

Also see Mark. N. Cooper, Theodore L. Sullivan, Susan Punnet, and Ellen Berman, Equity and Energy (Westview, 1983), p.5, and Chapter 6 Conclusion updated by the National Consumer Law Center, Steve Ferrey.