CONF-890845--6

PNL-SA-16889

PNL-SA--16889

DE90 004676

EVALUATION OF DOE'S RESOURCE-LEVERAGING PARTNERSHIPS FOR LOW-INCOME WEATHERIZATION

A. D. Lee
J. W. Callaway

August 1989

Presented at the
1989 Energy Conservation Program
Evaluation Conference
Chicago, Illinois
August, 1989

Work supported by
the U. S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington 99352

EVALUATION OF DOE'S RESOURCE-LEVERAGING PARTNERSHIPS FOR LOW-INCOME WEATHERIZATION

Allen Lee and Jenifer Callaway
Pacific Northwest Laboratory
Richland, Washington

Abstract

In July 1986, the U.S. Department of Energy (DOE) awarded competitive grants to five states to conduct pilot projects establishing partnerships and using resource leveraging to stimulate support for low-income residential energy retrofits. The projects were conducted under DOE's Partnerships in Low-Income Residential Retrofit (PILIRR) Program. These projects have been monitored and analyzed through a concurrent process evaluation conducted by the Pacific Northwest Laboratory (PNL).

The goal of the PILIRR Program was to demonstrate that states could use resource-leveraging partnerships to stimulate non-federal resources in support of low-income residential energy improvements. The evaluation relied on qualitative analysis to determine whether the states met DOE's goal. Several of the states were successful in meeting DOE's goal. This paper describes the state programs and provides observations about what factors affected program success.

Introduction

In July 1986, the U.S. Department of Energy (DOE) awarded competitive grants to five states to conduct pilot projects to stimulate non-federal support for low-income residential energy retrofits. The projects were conducted under DOE's Partnerships in Low-Income Residential Retrofit (PILIRR) Program. These projects have been monitored and analyzed through a concurrent process evaluation conducted by the Pacific Northwest Laboratory (PNL).[1] The results of that evaluation are presented here.

The overriding goal of the PILIRR Program was to demonstrate that states could use resource-leveraging partnerships to stimulate support for low-income residential energy improvements from non-federal sources. Currently, such weatherization is sponsored by DOE primarily under the Weatherization Assistance Program (WAP). The goal for the PILIRR process evaluation was to conduct an assessment of the processes used by the states and the extent to which they successfully established partnerships and leveraged resources. Evaluation objectives included: (1) identifying state agency characteristics and organizational factors that have affected the projects; (2) developing an understanding of the planning processes used by states in these projects; (3) identifying the processes through which partnerships were implemented; (4) identifying state activities that facilitated the formation and sustainment of partnerships; and (5) developing an understanding of the advantages, disadvantages, and implications of the types of partnerships and leveraging mechanisms used by the states and their local PILIRR subgrantees.

Project Descriptions

Thirty-three states submitted proposals in response to the DOE's Request for Proposals for the PILIRR Program. Florida, Iowa, Kentucky, Oklahoma, and Washington were selected to participate. Each proposed a different approach to promote non-federal support for low-income residential weatherization. Table 1 shows the characteristics of the projects.

The Florida project tested the viability of community-based funding and in-kind resource contributions. The state administrator of PILIRR, the Florida Governor's Office, awarded competitive grants of $30,000 to two local nonprofit groups to weatherize 50 to 100 low-income homes (each) over a period of a year. Neither local participant was a WAP subgrantee. Use of the grant money was restricted to administrative expenses of the community agency.

The PILIRR project in Iowa was designed to buy down loans acquired by landlords of low-income rental buildings. At the state level, responsibility resided with the Iowa Department of Natural Resources (IDNR). Iowa's program was targeted at landlords of multifamily buildings and required landlords to secure a conventional bank loan to fund weatherization. As its leveraging approach, the program provided a buy-down of loan interest. The basic approach was presented to a group of Community Action Agencies (CAAs) who had chosen to participate. The participating CAAs refined and demonstrated the approach by conducting pilot projects in their territory.

Table 1. State Project Characteristics

State	State Agency Conducting Project	Local Participants	Target Buildings	Leveraging Approach
Florida	Governor's office	2 local nonprofit agencies	Single/multifamily	Community/utility contributions, volunteer labor
Iowa	Dept. of Natural Resources	Community action agencies	Multifamily rentals	Buy-down landlord loans
Kentucky	Energy Cabinet	Local housing corporation	Single-family	Buy-down loans to owner
Oklahoma	Dept. of Commerce	WAP subgrantees	WAP-eligible	Tax credit
Washington	Dept. of Community Development	Community action agencies	Multifamily rentals	Utility/other contributions, landlord investment

Kentucky's PILIRR project was designed and implemented by the Kentucky Energy Cabinet (KEC). The approach focused on the elderly homeowner and the use of loan buy-downs. During development of the pilot project, KEC was the main player. A local housing corporation was selected to conduct the local pilot program. The corporation is located in western Kentucky and KEC selected it from participants in another innovative program. Once the operational part of the pilot, and the eventual project itself, begins, KEC's role should diminish as other partners recruit participants, arrange funding, and deliver the weatherization services.

Oklahoma's project was primarily a marketing effort to encourage use of a recently adopted 50% state income tax credit for donations to a low-income weatherization fund. As such, its leveraging mechanism was quite different from that employed in the other projects. The state Department of Commerce (ODOC) administered Oklahoma's project. PILIRR grant money was used to develop and implement a marketing program to encourage major businesses to use the tax credit.

Washington's PILIRR program focused on weatherizing large, multifamily buildings with owners paying part of the costs. Other leveraged funds came from pooling state, utility, and a small amount of federal funds. The program was implemented by the state WAP agency, the Washington Department of Community Development (WDCD). Three WAP CAAs implemented the project at the local level. The state's role encompassed the overall planning and coordination of the project. The actual leveraging was carried out by the CAAs selected. The CAAs recruited multifamily building owners; developed financing packages; and provided for the actual weatherization services.

Evaluation Approach

The evaluation methodology was developed in conjunction with the DOE clients to insure that the approach would address their needs. An iterative process was used to develop the approach over several months during which we worked with DOE to clarify our perceptions of the context for the evaluation, DOE's needs, and the focus of the evaluation. Many issues and constraints and their implications were taken into account during methodology development. These issues included the following: (1) client needs; (2) relationship of resource-leveraging partnerships to traditional weatherization programs; (3) role of evaluator in projects; (4) variability of projects; (5) qualitative nature of project data; (6) lack of control cases; (7) innovative nature of resource-leveraging partnership approach; and (8) reliability and validity.

As a result of these issues, the methodology we applied focuses on process evaluation,[2] has a feasibility analysis orientation,[3] emphasizes exploratory and descriptive methods[4] and applies qualitative data analysis methods. The methodology design was intended primarily to allow us to understand the underlying processes in each project and assess what factors most affected implementation feasibility.

Eight steps were conducted in the evaluation: (1) establish study goal and objectives; (2) develop generic and state-specific descriptive models; (3) develop hypotheses; (4) develop research questions and interview protocol; (5) identify actors from whom to collect information; (6) collect data; (7) reduce data; and (8) conduct single- and cross-site analysis.[5] In addition to collecting data, the evaluation team was directed by DOE to provide limited technical assistance as the need

developed. This assistance was documented, and helped to both develop rapport with the participants and reduce the effort required by the states to gather specific types of information.

The hypotheses, developed in step 3, translated the evaluation goal and objectives into specific research questions as the basis for data collection. These hypotheses were used primarily to help structure the inquiry and not for testing purposes, as they might be in a standard deductive approach. The hypotheses consisted of assertions such as "States should identify and apply incentives and marketing tactics that are tailored to partner types and objectives." Because the processes were the primary research focus, most hypotheses were intended to reveal the projects' process characteristics. Since this evaluation was primarily exploratory, most hypotheses addressed issues of *what* processes worked to establish and maintain resource-leveraging partnerships. We also wanted to make some inferences about what actions led to project success, though causal relations were not the primary evaluation focus, so some hypotheses dealt with issues that helped reveal causal relationships and behavior. Finally, some hypotheses implicitly addressed issues related to the implementation of innovations (PILIRR, in this case) by taking into account two project characteristics linked to the implementation of innovations: the decision-making process and participants' objectives. Starting with the hypotheses, we developed questions about five major components: lead state agency, leveraging approach, partners, partnership mechanisms, and target audience.

Since we were principally using qualitative analysis techniques, the evaluation relied heavily on verbal information. We obtained project data through both remote and on-site data collection techniques. Regular telephone contacts with key participants provided on-going monitoring of project progress, and periodic conference calls were held involving all the states, DOE, and PNL. On-site data collection occurred through interviews based on the research questions. Several key informants were interviewed in each state through two or three intensive on-site interviews. Though data collection was relatively structured, the on-site and telephone interviews were designed to permit open-ended data gathering to accommodate the exploratory dimension of the evaluation. Collecting similar information from multiple participants, or triangulation, helped develop construct validity (Yin, 1984).

In addition to collecting data with conventional interview techniques, we also conducted a workshop near the end of the data collection phase using a unique group process. A Q-sort/nominal-interacting process (Souder, 1975) was employed in which representatives from each participating state were asked to rank the factors shown in Table 2, derived from the information gathered during the program evaluation, in terms of how important they were in implementing successful projects. During the second step of this activity, the participants were presented with the group rankings and given an opportunity to discuss the factors and how they were ranked.[6] The results were used to determine whether initial consensus existed on the relative importance of the factors and to develop a simple measure of their relative importance.

Table 2. Candidate Success Factors*

Rank	Factor
1.	Analyzing the market situation thoroughly.
2.	Planning and implementing a comprehensive marketing strategy.
3.	Conducting comprehensive program pre-implementation planning.
4.	Identifying what key partners need to get from program involvement and meeting those needs.
5.	Involving key program staff who have experience with Weatherization Assistance or similar grant programs.
6.	Involving key program staff who have experience with resource leveraging or other "innovative" programs.
7.	Establishing a process to anticipate and solve problems in a timely way.
8.	Involving WAP or LIHEAP agencies in planning and implementation.
9.	Operating the program in a locale where strong support exists for low-income conservation programs.
10.	Specifying in detail what retrofit measures are acceptable and how installers will be qualified to perform retrofits.
11.	Utilizing partners that have established working relationships through prior joint projects.

*Factors have been listed in the order in which the states ranked their importance in the Q-sort exercise.

Findings

Table 3 summarizes process information gathered on each state project and organized into four categories found to be most important to project success. The status

Table 3. Summary of State Project Process Information by Major Categories

Project Category	Florida	Iowa	Kentucky	Oklahoma	Washington
Institutional and Organizational Settings	Governor's Office is not WAP agency Office was threatened by reorganization Office had prior experiences like PILIRR approach Local participants were effective	Natural Resources Dept. is not WAP agency State government was reorganized prior to PILIRR State and local participants had limited related experience	Energy Cabinet is not WAP agency No significant reorganizations occurred Cabinet had limited related prior experience PILIRR occurred concurrent with similar project Planning was comprehensive but occurred late	Commerce Dept. is WAP agency Minor Department reorganization occurred Department had limited related experience	Community Development Dept. is WAP agency Department had breadth of related experience
Program Planning and Design	Participating local agencies planned projects, using differing approaches	Participating CAAs did much of the planning Reorganization disrupted initial planning Minor design changes occurred	Task Force assisted in planning but was primarily advisory Intended role of central planning/funding agency did not materialize	Planning focused primarily on resolving issues of using tax credits for grants Planning was sporadic	Planning relied heavily on existing, comprehensive state planning process for new programs Task Force was effective
Marketing	Both local agencies had effective marketing techniques	Participants had little prior marketing experience Landlord recruitment had lmited success Utility provided needed marketing support	Extensive marketing planning occurred Task Force was mechanism to enlist participating organizations	Marketing was the core of project Marketing delays resulted from reorganization In-house delays occurred in developing marketing material	Marketing was unnecessary in pilot Marketing is considered important in future projects
Partnerships and Resource Leveraging	Partners were state/local agencies, utilities, businesses groups, community development corp. Leveraging was through local contributions/labor	Partners were state, CAAs, landlords, banks, utility Leveraging was through interest buy-down	Partners were state, task force members, elderly home owners Leveraging was through loan buy-down	Partners were state and tax credit users Leveraging was through tax credit contributions No leveraging during demonstration	Partners were state agency, CAAs, contributors, landlords Leveraging was through contributions, landlord investment, and other programs

of specific factors influencing project success are summarized by state.

In terms of organizational and institutional issues, assessment of the state projects identified agency reorganization, which occurred in four of the five states, as a potential delaying or disrupting factor. If the state agency running the project did not have responsibility for WAP, coordination and turf problems were likely. Potential problems could be alleviated, however, by taking special steps to involve the WAP agency if it was not administering PILIRR.

These resource-leveraging partnerships involved more participants and were typically more complex than traditional state projects; consequently, the occurrence of thorough initial planning and an on-going process to revise the project as needed appeared to be a significant factor in its success. In its project, Washington used an extant planning process for new agency activities. This available process appeared to be a key factor in getting their PILIRR project up and running with minimum problems. Several states employed task forces that were able to establish needed coordination with participants and provided an effective venue for planning.

Obtaining support for the project from potential participants and contributors, or marketing, was acknowledged by the states as critical to project success, but its importance was not fully recognized by all states at the outset of the projects. Even when they did recognize the value of marketing, some states lacked the marketing expertise they needed. PNL provided assistance and some states sought other marketing support. Useful marketing materials were produced in the course of this demonstration that could be used in similar programs.

Partnership membership varied by state depending on the nature of the project. State participants were usually joined by local groups, most commonly Community Action Agencies. The lead agencies typically recognized that successful establishment of a partnership required that the partners receive something they valued in exchange for their participation. For some partners, public recognition was desired; for building owners who were partners, the energy savings or increased marketability of their units were desired. Most states sought partners with whom the lead agency had previously worked, finding that they knew their expectations and commitments. Leveraging mechanisms ranged from generating conservation loans through loan buy-downs to the marshalling of teams of local volunteer workers.

Florida, Iowa, and Washington established partnerships that led to retrofits during the monitoring period (October 1986 – August 1988). Kentucky established its partnership during this period, but accomplished no retrofits until after monitoring was complete. Preliminary results for Kentucky are reported here. Oklahoma had launched its marketing campaign, but had not received any contributions.

In the four states that established their partnerships during the monitoring period, private sector participation occurred. All four achieved utility participation and contributions. Three of the states relied on the building owners to make an investment in the retrofit of their building; such investments would likely not have occurred during this period without PILIRR. The share of weatherization resources from strictly private sector sources, including building owners, ranged from about 30% to nearly 100% in the three states that accomplished retrofits during the monitoring period, and in Kentucky. Overall, these projects demonstrated that, at the pilot project level, private sector and other non-federal support could be stimulated to support low-income residential energy improvements.

Lessons and Observations

The validity of extrapolating the results from this evaluation to other cases where resource-leveraging partnerships are being considered is limited, primarily because this evaluation is based on results for only five state projects. Nevertheless, the diversity of the projects helped ensure that any lessons that emerged with some consistency across the states could be anticipated to be relevant to typical projects that might be initiated in the future. Based on this evaluation, four major observations can be offered about resource-leveraging partnerships.

First, resource-leveraging partnerships involve processes and mechanisms with which few state planners and project managers have much familiarity. The essential lesson is that the project is more likely to succeed if it does not push the "state-of-the-art" too far in too many areas at once. We found specifically that:

- Risk and uncertainty must be kept to an unacceptable level by not including too many innovative features in a new program.
- The resource-leveraging mechanism is likely to involve uncertainties about the level of resources that can be generated and face institutional risks associated with those institutions that must approve the method or execute it.
- Partnerships face the risk that partners may not be able to deliver on their commitments or the partnerships may lack long-term stability.

- Until institutionalized as on-going programs, resource-leveraging partnerships are vulnerable to the uncertainties of organizational disruptions and reorganizations.

Second, because they are unfamiliar and relatively complex endeavors, resource-leveraging partnerships demand careful, thorough planning before and continued planning during the early implementation phase. Specifically:

- Needs for technical information or expertise should be recognized early and potential sources should be identified and the needed support acquired.
- The resource-leveraging approach must be selected taking into account the technical and resource requirements of the approach and the political and institutional environment in which it will function.
- Project planners must get beyond their parochial view and acknowledge the forces and actors likely to have a major influence on the project, establish mechanisms to marshal the needed support, and develop ways to ameliorate potential political or institutional problems.
- The organizations and individuals who should be involved in planning should be brought into the project early.
- A task force should be established that communicates to potential participants or supporters about the project, helps get a buy-in of partners and participants, and provides a good source of information for planning and conducting the project.

Third, the project will have to be "marketed" and planners and managers must take this into account. Specifically:

- Project planners and managers must recognize that resource-leveraging partnerships require marketing aimed at diverse audiences.
- Personnel who can supply the needed marketing expertise need to be identified and their support obtained.
- The unique needs of public sector marketing must be recognized, taking into account political or institutional factors and behavior.
- The different target audiences must be identified.
- Suitable approaches must be developed to elicit the involvement of the various target audiences and potential benefits to them from their participation must be determined and used to solicit their participation.
- Attention should be given to obtaining marketing support from a suitable potential partner, such as a utility, as its project contribution.

Finally, agencies and individuals who implement resource-leveraging partnerships must have a special mix of skills, and the authority and responsibility required to carry out the program. Specifically:

- For low-income weatherization resource-leveraging programs, care must be taken to coordinate activities with the state agency implementing WAP if it differs from the one implementing the resource-leveraging program.
- The program manager should have a track record exhibiting the ability to be creative, and the manager must be persistent and committed to seeing the program through to successful implementation.
- The agency and manager should have adequate authority and responsibility to effectively implement the project.
- The special vulnerability of pilot programs, especially complex, innovative ones, needs to be recognized and steps need to be taken to reduce the impacts of risky and uncertain events.

In addition to these observations about program success, we offer three observations about conducting similar demonstrations in the future. First, the unique requirements of these projects meant that the states needed special technical assistance. The resource-leveraging aspect, in particular, made several unfamiliar technical demands on the states. Second, a considerable amount of information exchange occurred among the states, but even more would have been beneficial. Such a demonstration, where there is no attempt to run a quasi-experiment and the goal is feasibility demonstration, can benefit from active, planned interactions among the participating sites. Third, the amount of time to implement the pilot projects was underestimated in most cases. Such demonstrations are complex and involve many players. They are thus likely to encounter disruptions caused by reorganizations and numerous other exogenous influences. Though not all disruptions can be anticipated and it is desirable to set a reasonable time limit, there is some risk with an ambitious schedule of failing to reach the demonstration goal simply because time ran out.

Even with the limited number of states participating and with the diversity of approaches taken, this demonstration showed that states could implement resource-leveraging partnerships to support low-income weatherization. The program evaluation helped identify what worked in the different approaches and provided

insights into how to successfully implement similar partnership mechanisms in the future.

Endnotes

[1]This work was conducted for DOE's Office of State and Local Assistance Programs under Contract DE-AC06-76RLO 1830 and is reported in Callaway and Lee (1989).

[2]Process evaluations address how programs work. They are usually contrasted with "outcome" or "impact" evaluations which focus primarily on program outcomes.

[3]The state projects provided tests of the feasibility of the concept proposed by DOE. They provided information that could be used by a state or DOE to decide whether to pursue such projects in the future and how to plan and implement them (Patton, 1987, p. 44).

[4]Descriptive and exploratory approaches typically deal with questions about ways in which the projects worked. Explanatory approaches deal more with causal relationships associated with why the projects worked or didn't work.

[5]See Callaway and Lee (1989) for a more complete description of the methodology.

[6]Ideally, a second and possibly third ranking and discussion would have occurred, but time constraints prevented this. Several rounds permit participants to reflect on the perceptions of other participants and move toward consensus if possible.

References

Callaway, J. C., and A. D. Lee. ***Evaluation of DOE's Partnerships in Low-Income Residential Retrofit. Pacific Northwest Laboratory***, PNL-6849, Richland, Washington. 1989.

Patton, M. Q. ***Practical Evaluation***. Sage Publications, Beverly Hills, California, p. 44. 1987.

Souder, W. E. "Field Studies with a Q-Sort/Nominal Group Process for Selecting R&D Projects," ***Research Policy***, 5(4):172-188. 1975.

Yin, R. K. ***Case Study Research—Design and Methods.*** Sage Publications, Beverly Hills, California. 1984.

Acknowledgments

The authors would like to thank Susan Heard of DOE's Office of State and Local Assistance Programs and Richard Broncato and Nancy Tate, formerly of the office, for their support throughout the project. We would also like to thank the project participants in each state whose cooperation made this evaluation possible.