Moving a Residential Saturation Retrofit Program from Low-Income to Higher-Income Neighborhoods

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The Los Angeles Department of Water and Power (DWP) is currently implementing a residential program to install DSM measures in every household within its service territory. The primary goals of the program are to install energy savings devices, educate the customer about energy efficiency, and promote the customer's goodwill toward the utility. *A Better Idea Program* began in 1991 and was initially directed at low-income neighborhoods. The program is now moving into higher-income neighborhoods. Currently, the program is being implemented by two Community-Based Organizations (CBOs) and a private contractor. The program is marketed and installed through door-to-door canvassing. The CBOs, from the Hispanic and African-American communities, and the private contractor have been very successful in implementing the program in lower income neighborhoods. The measures delivered to each home include compact fluorescent bulbs, refrigerator coil cleaning, low-flow showerheads, and other water saving devices. The installer also educates the customer during the installation process.

After two successful years in low-income neighborhoods, LADWP is faced with the challenge of delivering the successful door-to-door campaign to higher-income neighborhoods. As the demographics of target neighborhoods have changed, LADWP has noted that the program, originally designed for low-income neighborhoods, has not been as effective in higher-income neighborhoods. The types of issues that LADWP now confronts are: Should the marketing message change? Is door-to-door canvassing still the most effective method of delivery? Does the emphasis on education need to be adjusted for different lifestyles? What special problems exist for higher-income senior citizens and dual-income families? This paper addresses how LADWP might effectively modify its existing low-income program for implementation in higher-income neighborhoods.

Introduction

In 1991, the City of Los Angeles Department of Water and Power (DWP) took on an enormous and unprecedented challenge. DWP set out to reach all residential customers in its service area to install DSM measures in their homes and educate them about energy efficiency. While residential "door-to-door" direct installation DSM programs have been successfully implemented by a number of utilities in the past ten years, it is important to note that these programs were implemented either in small cities such as Santa Monica and Pasadena, California, or in low-income areas of larger cities such as Boston and Detroit. This type of program ("door-to-door" direct installation), however, has never been attempted for a large city in its entirety.

A number of similar residential programs that "canvas" cities have been implemented in the past. These programs, however, are noticeably different from *A Better Idea Program (BIP).* Two previous ACEEE papers on neighborhood programs included the evaluation results from the Neighborhood Energy Workshop (N.E.W.) Program, co-sponsored by the City of Minneapolis and Minnegasco (Brummitt, 1984), and a summary of multiple RCS programs (Hirst, 1984). Even though the N.E.W. program was targeted for the entire city, the program was not a direct install program in the manner of *A Better Idea Program.* The Hirst paper presented only impact results for the audit and weatherization programs. Other papers about similar programs include a discussion of the Santa Monica Energy Fitness Program (Egel, 1986) and the New England Power Services Company's Energy Fitness Program (Miller, et al., 1993). These last two programs are, in fact, similar to the BIP and provided the foundation for the DWP program. The Santa Monica and

NEPSCO programs, however, were limited to a small city and to low-income areas, respectively.

This paper explores the progress of DWP's large scale "door-to-door" direct installation program as it completes its work in the low-income areas of Los Angeles and moves into neighborhoods with higher incomes and more heterogeneous populations. The future success of the program will depend on whether it can adapt to this new challenge. Some of the general questions that the program will have to face include the following: Can the program as it is currently delivered be effective in middle class areas of the city? How do customers' attitudes differ between economic neighborhoods? Can the DSM message that was delivered to low-income areas continue to be effective in other areas? These questions will be addressed in detail later in the paper; but first a brief history of the program is presented.

Background

A Better Idea Program (BIP) is a residential DSM program that provides direct installation of energy efficiency and water saving devices in the existing homes of residential customers. The major energy efficiency measures included in the program are compact fluorescent bulbs and energy education delivered to customers. Under the program, refrigerator coils are cleaned and water conservation measures are also provided. All measures are provided at no cost to the customer.

A pilot stage of the program was administered in 1991. The full scale program immediately followed in November 1991, with minimal adjustments to the original program design.

The program is currently delivered by three local contractors. Two of the contractors are Community-Based Organizations (CBOs) from the African-American and Hispanic communities. The third contractor is a private implementation firm.

The primary objectives of the program are fourfold: to increase customer awareness of energy use efficiency, to reduce consumption of electricity and water without sacrificing customer comfort levels, to postpone the need for constructing costly new generating plants, and to afford DWP the opportunity to develop a comprehensive customer database with which to better assess customer needs and concerns.

The basic functions of the program are conducted in the same manner by each contractor. A crew of installers and two canvassers are sent to a neighborhood for the day. The selected neighborhoods are assigned to each contractor by DWP. A van identified with DWP and *A Better Idea Program* logos are situated in each neighborhood. The van acts as the central point for field supervision and supplies. One person from the crew is responsible for placing door hangers on the homes that will be canvassed the following day. A canvasser goes door-to-door to schedule appointments for the installers who are usually ten to fifteen minutes behind the canvasser. If no one is home, a card is left for the customer to call DWP to schedule an appointment. When a customer is home, the canvasser explains the program and describes the measures to be installed. The canvasser then either: 1) contacts the crew chief at the van who informs an installer about an appointment or 2) directly contacts the installer. All communication is done with walkie-talkies.

The installation takes between twenty and forty-five minutes, depending on the installer, the size of the home, and the interest of the customer. The installer educates the customer while installing the measures, which include three to four compact fluorescent bulbs, refrigerator coil cleaning (if possible), low-flow showerheads, aerators, toilet displacement bags, and toilet dye tests. The customer is also given a package of educational material on specific end uses.

In 1993, DWP planned to deliver direct installation services to 76,800 customers. The program savings target was 1.4 MW of coincident peak load reduction and 15.4 GWh of energy savings. The program's 1993 achievements were remarkably close to its goals. Approximately 76,960 customers actually received installations, for a total of 1.3 MW of coincident peak load reduction and 19.4 GWh of energy savings. Concurrent impact evaluation work provided energy and demand savings based on billing analysis and engineering calculations.

Research Plan

DWP contracted with XENERGY to conduct a process evaluation of the *A Better Idea Program, The* evaluation team designed and implemented a full scale evaluation project in 1993 to address a number of factors associated with the program, including:

1. Program design efficiency,
2. Program delivery quality,
3. Program implementation effectiveness,
4. Administration effectiveness,
5. Quality assurance,
6. Customer satisfaction, and
7. Program tracking effectiveness.

In addition to these traditional process issues, DWP was also concerned that the current design of its program might be exclusively effective in the low-income areas of the city. This should come as no surprise, since the

blueprint for BIP was based upon the "Energy Fitness" program at Boston Edison and other similar programs, which were specifically targeted toward low-income neighborhoods. DWP intentionally adopted this low-income plan as a starting point for their program as a community service to low-income customers. Now that the program has been successfully implemented in most of the low-income communities within Los Angeles, however, DWP is concerned about its ability to transfer the program from low-income areas to higher-income neighborhoods, and hoped that the evaluation would shed some light on this issue. The participation rates decreased for the contractors who were moving from strictly low-income areas to mixed income areas. Figure 1 shows the participation rates over the 1992 and 1993 periods. The 1992 program was confined almost exclusively to low-income neighborhoods.

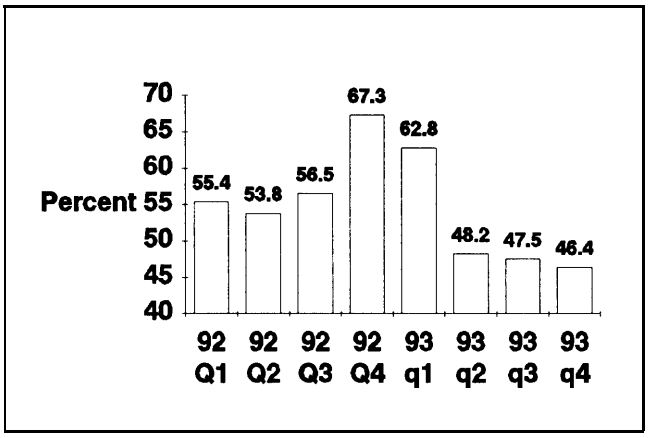

Figure 1. Program Participation Rates

The issue of the transferability of a residential door-to-door DSM program into economically mixed neighborhoods would be a concern in any big city, but it is particularly acute in Los Angeles. Los Angeles suffers to a greater degree than most American cities from a number of contemporary problems, such as pervasive urban crime, a mass influx of non-English speaking peoples, many of whom move into middle-class neighborhoods, and an unusually high cost of living. What do these issues have to do with the implementation of a residential conservation program? Urban crime contributes to a general climate of fear and suspiciousness, often with racial undertones, which impedes the effectiveness of same-day scheduling and canvassing by racially mixed implementation crews. Immigration of non-English speaking peoples makes it more difficult for the implementation crews, first, to calm people's fears regarding letting a stranger into their home, and second, to successfully convey the crucial educational component of the program. The high cost of living in Los Angeles, finally, means that families typically rely upon more than one income in order to make ends meet, which often leaves no one at home to answer the door when the canvassers and installers make their rounds. Extending canvassing hours into the evening hours, it is important to point out, might not remedy this last problem, because most people value the few hours of privacy they have when they get home from work.

These general concerns generated a number of specific research questions. In addition to the issue of transferring the program into higher-income neighborhoods, these research questions also addressed the issue of continuing to implement the program with both Community-Based Organizations and private firms. Some of the research questions addressed were:

- Should program delivery be significantly redesigned for middle and upper income neighborhoods?
- Is same-day canvassing the most effective means of marketing the current program? Is its effectiveness dependent on the type of neighborhood being canvassed?
- Will the racial makeup of the contractor crews affect the success of the program in predominantly middle class neighborhoods?
- What methods should be employed to achieve improved program penetration in security multifamily buildings, that are more common in higher-income neighborhoods?
- Is the current marketing technique of placing door hangers one to two days before scheduling effective? Will it be effective in higher-income neighborhoods?

Study Approach

To elucidate these research questions, we conducted a series of staff and contractor interviews, performed in-field observations, and conducted a customer satisfaction survey.

Interviews

The primary purpose of the interviews was to assess program design efficiency, the quality of program delivery and implementation, and administrative effectiveness. A total of twenty-five interviews were conducted by several researchers. Interviews were conducted both individually and in groups. Interviewees included:

- Program staff members,
- Program managers,
- Utility upper management,
- All field staff,
- Each contractor supervisor and crew chief, and

- Ex-program staff members.

In-Field Observation

The primary purpose of the in-field observations was to assess the effectiveness of program implementation, and more generally, to examine the degree to which program protocols were being implemented in the field. Every canvasser for each of the three contractors was accompanied by an evaluator for at least one half day. The evaluators observed approximately 75% of the installers from each contractor, and witnessed forty-seven individual installations over a three-month period. Canvassers and installers were observed by two different evaluators to safeguard against observation bias. In-field data collection forms were developed for both canvassers and installers so the evaluators could systematically note observations. The forms contained information about installation procedures of the individual measures, installer and canvasser courtesy and appearance, installer ability to educate the customer, and customer reactions to the program and the installers.

Customer Telephone Survey

A customer satisfaction telephone survey was also conducted for 102 program participants and 103 non-participants. The primary objective of the study was to determine participant satisfaction with the program delivery system, canvassers, and installers. A non-participant survey was developed to determine barriers to participation and to ascertain any basic demographic differences between participants and non-participants. The sampling frame was developed from customers from the neighborhoods who were offered the program within thirty to forty-five days before the telephone survey. The sampling frame was developed from neighborhoods that were in "mixed" income areas of the city.

Findings

The evaluation data showed that the program has successfully delivered the program in an effective and efficient manner to low-income neighborhoods. The participation rate in low-income areas was approximately 58%. This rate is higher than those reported for the other whole city programs, such as the Santa Monica program, with 33%-35% (Egel, 1986), and the Minneapolis program, with 35%-40% (Brummitt, 1984). At the time these programs were implemented, these were very high participation rates. In addition to the higher BIP participation rate, the customer satisfaction survey indicated that more than 92% of the surveyed participants were satisfied or very satisfied with the program. Observations by the evaluators during the in-field visits supported this finding. Field observers noted that customers were very receptive to the installations and the educational aspects of the program. Forty-four of the forty-seven observed installations were well-received by the customers. Only three customers who agreed to the installation were angry and skeptical of the program. The in-field observation, high participation rates, customer surveys, and staff interviews all confirm the conclusion that same day canvassing and installation was indeed an effective approach for a low-income direct install program.

These same research results also indicate that adjustments to the program delivery system itself will have to be made as BIP's market undergoes changes, however. The participation rate is declining over time as the program moves into more "mixed" income areas (See Figure 1). Personnel from all three contractors report the same types of problems in customer participation in higher-income areas. Many customers are not home during the day, and it is more difficult to sell the program to those customers who are at home. We proposed that program adjustments be made slowly, implemented one at a time as the program progresses into middle class neighborhoods.

An important finding of the survey data was that non-participants have consistently higher income and education levels than participants. Higher income and education levels are demographically linked, so the fact that non-participants have both higher education and higher income levels comes as no surprise. The demographic data we have is admittedly somewhat limited, but the implications for the BIP program are nevertheless fairly clear: non-participants are unavailable because they have more professional jobs with regular daytime hours; frequently more than one adult in the household is at work during the day, leaving no one at home during program implementation hours; and they value their privacy during the few hours when they are at home. This finding, therefore, sustains the general observation that the program, as it is currently designed, will not be as effective for higher-income neighborhoods as it has been for lower-income neighborhoods. It also provides quantitative demographic support for the response that most non-participants surveyed gave when asked why they had not participated in the program; namely, that they were not at home when the canvassing and installations took place.

The difference in income was the most dramatic indicator of consistent demographic variation between participants and non-participants. In the participant sample, 55% of respondents reported their total annual household income before taxes to be $15,000 or less. In the non-participant sample, in contrast, only 38% reported their income to be $15,000 or less. The income information is plotted in Figure 2.

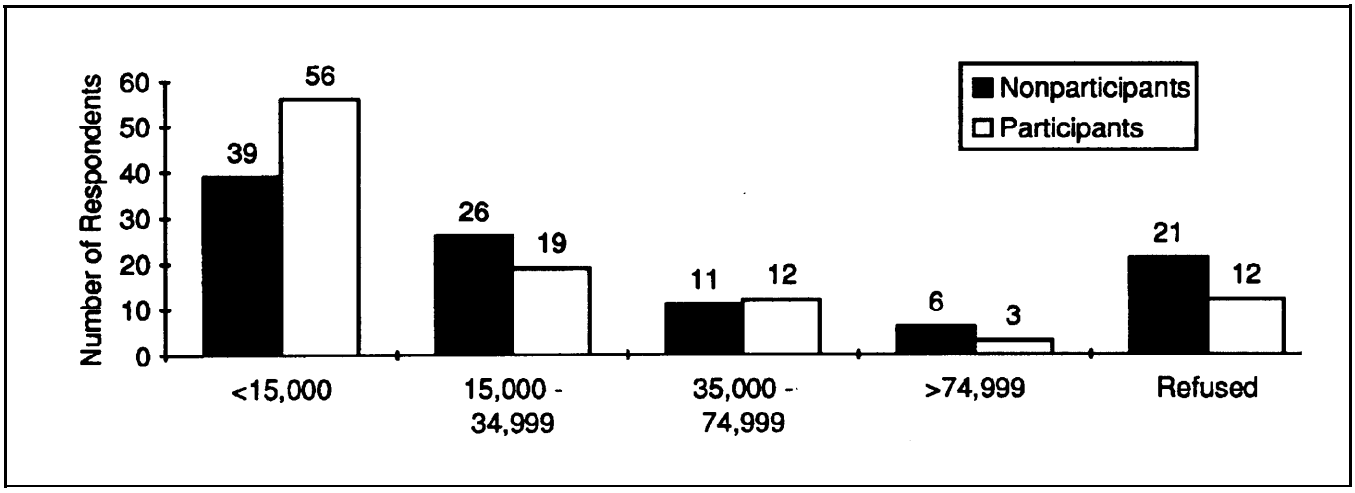

Figure 2. Total Annual Household income Breakdown - Surveyed Customers

The other factor distinguishing the non-participant sample from the participants was the former's higher level of education. Twenty percent of the non-participants said they had graduated from college, as compared to 13% of the participants.

Another finding of the in-field observations and installer interviews had to do with program marketing. The primary means of marketing the program is the use of the door hanger one day before canvassing. We found that many of the customers did not see the door hanger, or if they saw it dismissed it as advertising. This observation was confirmed by the customer survey, which indicated that more than 57% of the non-participants said they did not receive or remember getting the door hanger. In addition, the majority of canvassers and installers complained during staff interviews that it was more difficult to sell the program because many of the customers did not see the program marketing information. They reported that this was especially more evident in the higher-income areas of the city. They asked that changes be made in the program design to provide better pre-notification of the customer.

It is important to emphasize that there appeared to be a strong interest in the BIP program from non-participants from higher-income areas of the city who were contacted in the telephone survey. When asked what DWP could do to make it more likely for them to participate in such a program in the future, many of the non-participants (approximately 30%) responded to the effect that an extension of the canvassing and installation schedule would have made a big difference to them. The survey instrument was not able to specifically address whether evenings or weekends would have been preferable to the non-participants, but intuition suggests that most people are fairly protective of their weeknight evening hours.

In another common response to the question of what could be done to induce their participation, many non-participants said that they would like to have more and improved information about the program before making a decision. The issue of what types of information and education might be best suited to higher-income customers will be addressed in the next section of the paper.

We also wanted to know whether non-participants were predisposed against DWP, expecting negative feelings to have influenced their decision to participate in the program. We asked non-participants whether they were satisfied with the service they received from DWP. The results are shown in Figure 3.

The results indicate fairly clearly that non-participants' level of satisfaction with DWP did *not* influence their decision not to participate in BIP. The question, then, is how the program can be modified in order to reach those middle- to high-income customers who now form the bulk of the target population. The next section offers some ideas on how this can be accomplished and points to areas where future research might illuminate our suggestions.

Another important finding was that both participants and non-participants were favorably impressed by the canvassers and/or installers with whom they came into contact. This finding supports our conclusion, explicated below, that the CBOs, along with the private contractor, can continue to effectively implement the program as it moves into higher-income neighborhoods.

Future Research

Concerns have been expressed as to the appropriateness of using Community-Based Organizations to deliver the program in higher-income neighborhoods, especially neighborhoods that are not as racially mixed as the

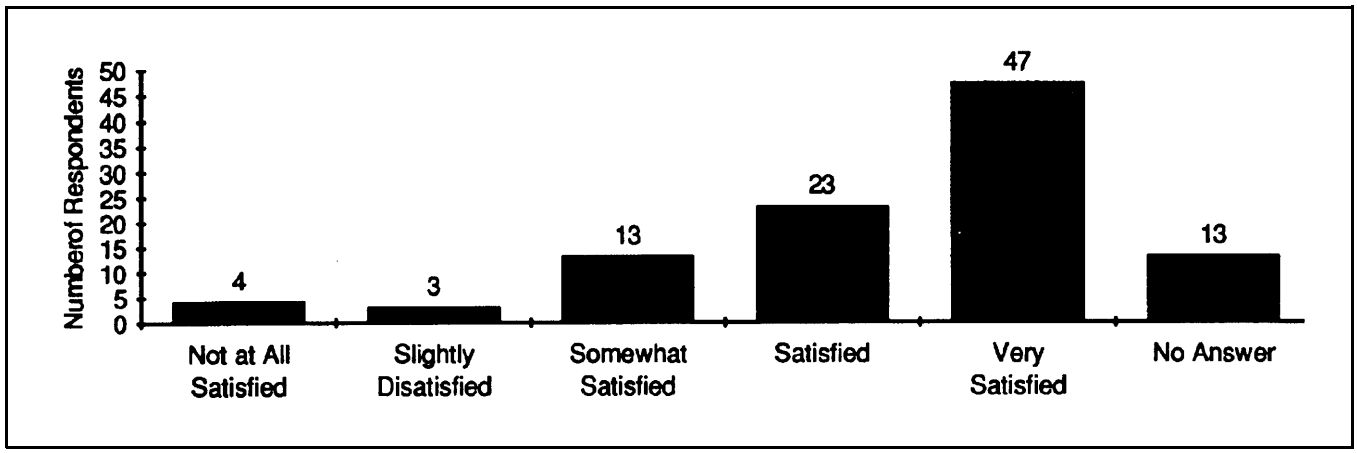

Figure 3. How Satisfied Are You with the Service You Received from DWP? (Non-participants)

original target areas. These concerns do not apply to the private contractor, because of its experience in a multitude of environments and neighborhoods. Two of the primary reasons for using Community-Based Organizations to deliver the program were to help the community and to provide jobs for lower-income areas. It was also believed that crews coming predominately from South Central Los Angeles would be an asset for delivering the program in that area of the city. This, in fact, proved to be a prudent decision that benefited not only DWP, but the communities as well. But will this continue to hold true in other areas of the city?

We believe that using the CBOs in addition to the private contractor *can* continue to be an effective method of program delivery. It was the observation of the evaluators during the in-field visits that all three contractors were successful in delivering the program, in terms of canvassing and quality of installations. Very few instances were observed where a crew member's race determined whether a customer participated in the program or not. Every customer but three who agreed to the program welcomed the installers into their home regardless of their race. There are, of course, always exceptions to this, and they even occur now. There is little that can be done to overcome people's biases. It was observed that the canvassers had more difficulty selling the program to people of other races than to customers of their own race. The canvassers were ultimately able to sell the program in most instances to these initially reluctant customers, however.

The primary concern is to make customers feel comfortable in allowing a stranger to come into their home. A person's race should have little to do with the decision; however, how the canvassers or installers present themselves will certainly have a lot of influence on the customers' decision. And while the canvassers and installers have thus far done good work, further training in working with customers from backgrounds different from their own would make the crews more effective in higher-income neighborhoods. Additional training can include sessions on self-confidence, salesmanship, assertiveness, understanding other cultures, and expectations from customers in these other types of neighborhoods.

We believe that some other relatively minor adjustments to program delivery and marketing can improve BIP's chances of success in the future. Further research can test these hypotheses:

1. More advance notice of the program might help alert customers and prepare them for the program's arrival in their neighborhood.

2. Related to the first point, customers might be more inclined to participate in the program if they are able to schedule an appointment through the contractors more than one day in advance. Canvassing can continue to be a useful marketing tool if customers can make advance appointments for installation through the canvassers.

3. Marketing the program in high income neighborhoods might also be made more effective by adding other measures to the program, such as heat pumps, air conditioners, and pools and spas.

4. The marketing message itself might be modified for higher-income areas by shifting the emphasis of the incentive. Rather than focus on the fact that the program's measures are offered free of charge, and can help customers save money on their monthly utility bill, perhaps the environmental and conservation aspects of the program might better engage the attention of middle- to high-income customers. It might be the case that these customers would be more drawn to a program that makes a significant impact on

energy and water conservation than to a program that saves them money, and this without changing the program's delivery system.

5. Finally, an extension of installation hours to include early evenings and Saturdays is likely to increase participation in higher-income areas.

All of the above hypotheses can be tested using a number of techniques including: 1) focus groups, 2) temporary modifications to the program testing each hypothesis separately, or 3) complete program revision. Learning how differing market segments react to various program delivery and marketing systems is an essential ingredient to a program's success.

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