Access and Delivery Strategies for Small Businesses: Buyers Clubs for Energy Efficiency

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ABSTRACT

During the last twenty years, energy efficiency in the small business sector has been ignored or underserved by public and private organizations including utilities, governments, and energy service providers. One of the primary barriers in providing services to this sector deals with the economies of scale. Transaction costs for an individual small business are often comparable to those of a large business, but the benefits are much smaller. Also, the costs of purchasing products and services during the project implementation phase is much higher because they do not have the same purchasing power as large businesses.

An energy efficiency buyer's club, uses an aggregation strategy to buy down the cost of energy-efficiency products and services, allowing distributors to reduce prices by as much as 30 to 60%.

This paper presents an outline of the program, and lessons learned from a nine month pilot project that could lead to national implementation of energy efficiency buyers clubs for small businesses. From this pilot, we have developed a strategic model that other communities can replicate. Eventually, we hope to build a national network of community-run buyer's clubs.

Introduction

The vitality of a community is reflected by the health and strength of its small business sector. Small businesses constitute 98 percent of all businesses in America, employ nearly 60 percent of the work force, account for 38 percent of the Gross American Domestic Product and have created two-thirds of net new jobs in the American economy since 1970. Net job growth in the 1980s in the United States is attributed solely to employment increases in small businesses, accounting for 4.1 million net new jobs, while large firms lost 500,000 net jobs (Dennis et al., 1994).

Cost reduction through energy efficiency directly benefits the profit of a business. For businesses, selling more products often increases associated costs. Therefore, reducing operating expenses can more directly benefit profit, especially if there is a short term payback associated with the measure. Other benefits include improving the aesthetics and performance of a business which will attract more customers and provide higher comfort to workers, leading to higher satisfaction for both and the potential for enhanced profitability. Besides providing the business with additional cash to perform its core business, funds from energy savings could also be reinvested to improve business operation, decrease cost of services, or hire needed staff. On a community level this translates to improved building stock, higher employment rates, increased tax revenue for cities, increased jobs and reduced local capital spent on energy that usually leaves the community.

Small business owners have limited capital, knowledge and time to plan and implement energy-efficiency projects. Despite favorable return on investment, small businesses often lack access to the initial capital resources required to implement many energy saving measures. These barriers have been historically addressed with either costly utility sponsored marketing and direct implementation programs, or with more passive customer site surveys and rebate information campaigns that have shown limited results because they fail to address the barriers to getting energy efficiency installed. In some cases, utility sponsored programs for small business energy efficiency have had high success rates, but may be difficult to sustain in a deregulated environment. Seattle City Light's successful $mart Business pilot program (Boman 1995) provided small businesses an 80 % incentive that attained a 69 % penetration in the target market. The incentive was intended to overcome several barriers in the market, including low utility costs and economies of scale when dealing with small businesses. However, programs which provide free products and services to customers may not result in market transformation. First, they are expensive; one comparison report shows that an average cost of US$3,000 per participant was needed to provide a 100 % subsidy to each site (Detham & Associates 1994). Also, by receiving free products and services, a business is less likely to understand the total benefits of energy efficiency and thus less likely to repeat measures in the future. The message a business passes to its neighbors may be about the free services, rather than the message that energy efficiency is good for business.

The private sector (e.g., contractors, lenders, and energy service companies (ESCos)) has largely ignored the small commercial market due to the relatively high cost of marketing and providing services. High overhead costs relative to the revenue available on small projects cause prohibitively high costs to the recipient. Therefore, the smaller business owner must rely on electricians, a group that usually doesn't have the latest energy-efficiency technologies. This is an expensive and somewhat unpredictable alternative to getting competitive pricing on labor and material. When buying replacement products, small business owners often purchase products through a local hardware store, where price and availability of high efficiency products prove to be another barrier in maintaining energy efficiency at a site.

For the energy-efficiency market to be truly transformed, permanent changes must be made to the supply of information, expertise, financing and low cost products and services available to small businesses. They need to benefit without large subsidies or giveaways. An infrastructure needs to be developed to deliver energy efficiency products and services to the smaller business community and to benefit all stakeholders. This paper examines one way to begin infrastructure development, through energy efficiency buyers clubs.

Discount stores (or buyer's clubs) are currently a $110 billion industry. Over the next 10 years, the current national base of 450 club stores is predicted to grow to 950; the number of deep discounters will shoot from 900 to 18,000; and discounters will multiply from 4,400 to 7,000, according to a recent McKinsey & Co. estimate. A buyers club is a concept about which most businesses are familiar and supportive.

A buyer's club can provide lower prices and essentially one-stop shopping for products and services. This can make energy-efficiency projects more attractive to small businesses, not only by decreasing the cost of the project, but also providing them with ready access to information. A buyer's club will naturally aggregate small businesses, making several small businesses appear to a product or

service provider as one large business. Since small businesses currently pay as much as five to six times the price available to the large commercial market, aggregation can dramatically reduce pricing.

As demand grows, retailers may meet the demand by increasing product availability and reducing pricing to compete with the buyer's club prices. A list can also be developed of service providers that are proficient with energy-efficiency installations and meet high quality standards. Service providers not on the list may rise to meet the demand by increasing the quality of their services, and by providing increased support for energy-efficiency installations.

Following is a discussion of a pilot program that tested the buyer's club concept. Discussion of lessons learned from the pilot and a general model for a buyer's club follows.

Description of Pilot

The Commercial Technical Assistance Program

The 1997 Commercial Technical Assistance Program (CTAP) was an effort to increase the penetration of energy efficient technologies into the small commercial market within the City of Berkeley. Certain aspects of a buyer's club concept were tested and evaluated. The program aggregated small businesses to buy down the cost of products and services, and provided them with a full range of services. The City of Berkeley sponsored the CTAP program through a contract with a local non-profit agency. Two types of services were offered through the program.

The General Services program offered small business one-stop shopping on services at a small fee. The services under this program included energy surveys, cost-benefit analyses, financing assistance, construction documents and project management. Two businesses took advantage of this program. In developing the CTAP program, a relationship was established with two local product distributors. These distributors agreed to provide businesses purchasing products through the CTAP program with the same purchase price they provide to large businesses. This reduced product pricing by 30 to 60 %.

The second program was the Direct Install program. It's intent was to include the smallest business sites by providing incentives to any establishment occupying a space of 3,000 square feet or less. Skilled City labor installed the measures, and a 50% subsidy was provided. Four sites participated in this program; they were chosen on a first come first served basis. The program used a list of service providers previously developed by the City through a Request for Qualifications process. A Request for Proposals was sent out to these providers, and the lowest cost bid was chosen.

The CTAP pilot resulted in the identification of energy-efficiency projects that exceed 387,000 kWh in annual energy savings and $42,000 energy cost savings for 27 businesses in Berkeley's downtown area. For the Direct Install portion, four businesses participated in modifying their facilities to reduce energy consumption and costs, while improving the quality of their lighting systems. Two businesses implemented upgrades through CTAP general services. Combined, these businesses will annually save over $6,800 in energy costs and reduce consumption by 62,000 kWh. Although all of the projects implemented were exclusively lighting retrofits, other energy savings potentials were identified for further consideration. Additionally, personnel from the City of Berkeley's (COB)

weatherization crew were trained in energy-efficiency retrofits and were used by the installation contractor to perform facility upgrades.

Marketing to Small Businesses

Small business marketing was achieved by working in concert with the Berkeley Chamber of Commerce, the Downtown Berkeley Association, and the City's Economic Development Department. These organizations provided valuable input that greatly assisted targeting businesses most able and willing to implement profitable energy upgrades. The rate of participation was enhanced by more effective targeting and selection of businesses. The small businesses were more comfortable with an approach from organizations with which they were familiar.

A spreadsheet analysis and presentation tool was developed, specifically oriented for promoting energy efficiency to the small commercial market. It generated projected cost savings, energy savings, utility rebates, and implementation costs for each business on a measure by measure basis in a single report. The development and use of this tool proved important in determining and articulating to business owners the magnitude of savings potential that could be realized. By presenting the business owner with a choice of measures to consider, as opposed to a fixed package, they were able to prioritize measures selectively. The presentation of the report focused on a summary page, and included the calculations used to arrive at specific savings figures.

Identified Energy Savings Potential

Through the site visits and surveys, $41,000 in potential savings from lighting and HVAC retrofit recommendations were identified. The annual savings per square foot averaged $0.25. The primary determinants for energy savings for lighting were found to be hours of operation and the age of existing equipment. For HVAC, the primary determinants for savings potentials were the age and condition of equipment and the lack of controls. In general, the savings identified through HVAC improvements were minimal as compared to lighting. Few small businesses in Berkeley have heating or air conditioning. The low hours of use for existing equipment and the high capital costs necessary to make the recommended changes deemed these projects uneconomic.

Processes Developed

The main process developed for identifying potential sites and conveying the energy saving potential to the business owners was relatively detailed and time consuming. It was implemented by first doing "walk-by" surveys, where auditors walked by potential sites and visually inspected the type of lighting and HVAC used, in order to get some rough calculations on energy consumption. Business owners were unaware of these "walk-by" audits. Sites were then prioritized by potential savings (calculated from data from the walk-by surveys), business stability and perceived inclination to act. The last two pieces of information were gathered primarily from the City's economic development department.

After sites were prioritized, a letter was sent out, from both the City of Berkeley and the local utility, Pacific Gas and Electric Company (PG&E). The letter explained the program, outlining either the Direct Install or General Services program. After the letter was sent, an attempt to contact the decision maker of the business was made; in most cases this was a simple process, but some businesses had to be deleted from the list because the decision maker could not be contacted. After the owner of

the business signed a utility information release form, a more detailed site survey was performed. The formal site surveys covered the energy consuming equipment in the facility along with a series of informal questions to the business owner on quality and safety issues. The spreadsheet analysis and presentation tool was used to analyze the information from the audit, and to prepare a report for the owner that clearly outlined the benefits from participation in the program. Depending upon the business's previous implementation ranking and impressions gathered from the formal site survey, the report was either mailed or hand delivered to each business site. The high potential sites had reports hand delivered and low potential sites received reports by mail.

Program Results

The CTAP pilot was generally well received by the local business community. The identification of ongoing monetary savings was viewed as a valuable tool for reducing operating costs and improving the quality of a facility. Many business owners were initially skeptical of the survey and viewed it as a potential compliance issue. However, once the savings report was delivered and explained, their confidence in the project was raised. Table 1 shows the results of the process used for signing businesses up for the program.

Table 1. CTAP Process and Results

Process	No. of Businesses
Sites on the Initial List	140
Walk-by Check for Technical Potential	65
Short Listed for Direct Mail	56
Decision Maker Contacted	30
Site Survey	27
Confirmed Implementation	6
Pending Implementation	6

Overall Program Results

Table 2 shows the results from both programs, and includes the potential savings from the remaining 21 sites. As can be seen, potential savings for these sites is high. Future programs will continue to target these sites. The two sites under the General Services program purchasing lighting equipment through the local distributor saved between 30 and 60 percent on product purchase cost. The implementation cost for these sites in Table 3 represents total cost, including construction and product purchase.

Table 2. Savings from the CTAP program

Program	# of Sites	Total Square Ft. (sf)	Annual Energy Use (kWh)	Energy per square feet (kWh/sf)	Estimated Savings (kWh)	Percent Savings (%)
General Services	2	13,000	123,440	7	35,574	29
Direct Install	4	6,600	234,493	35	26,871	12
Total (participated)	6	19,600	357,933	21	62,444	21
Total (potential)	27	152,700	1,580,000	10.4	387,000	21

Table 3. Costs from the CTAP Program

Program	Installation Cost ($)	Utility Rebate ($)	Savings ($)	Payback (years)
General Services	9,071	1,392	3,913	2.0
Direct Install	6,590	1,096	2,897	1.9

Measured Results

Table 4 charts the measured results of implementing the six projects. At the time of writing, the efficiency measures were 3 months old. The last two months energy use is compared with the same two months one year ago.

Table 4. Measured Results from the CTAP program

Site	**2 mo. Electric Usage last year (kWh)**	**2 mo. Electric Usage this year (kWh)**	**Percent Change in Electric Bill**
Direct Install			
Eastwind Books	1,110	1,035	-7%
EZ Stop Deli	24,790	26,327	6%
Goodson's Health	9,119	6,953	-24%
Rex Key	2,616	1,950	-25%
General Services			
Games of Berkeley	16,260	12,240	-25%
Phoenix Optical	4,740	3,980	-16%

It should be noted that EZ Stop Deli implemented a lighting project. Lighting was approximately 8% of the total electric bill. Games of Berkeley's result is a projection based on 8 months of data.

Lessons Learned

1. Resource costs for the CTAP pilot were too high for a continuing program; for example, a lot of time was spent in targeting and marketing to the small businesses. While this was beneficial for a project like CTAP, it would prove to be too costly for a buyer's club. By setting the club up directly in a local organization businesses trust, like a business association or a chamber of commerce, marketing efforts can be reduced. For example, rather than doing the initial walk-by prioritization, a direct mailing could be sent directly to chamber or association members, with an additional presentation given at a monthly or quarterly meeting. As momentum is built, word of mouth marketing would bring in more club members.

2. Most small businesses are reluctant to implement what they would consider new energy technologies without being able to see them operate in a similar situations to their own. For this reason, the City's 50% subsidy in the Direct Install program was instrumental in overcoming concerns and risks perceived by the business owner. Even the Downtown Berkeley Association wanted to see examples of the work prior to marketing or endorsing the program. For the buyer's club concept, it would be well worth the investment to develop several local showcase business sites as a way to demonstrate the technologies, to use as references, and in general to gain confidence with the organization that is promoting and managing the work. Most small business owners are conservative and don't want to be the first to try something new. They want to work with people and organizations they know and trust.

3. This program was an excellent education opportunity to raise the owners' consciousness on energy issues. Most owners were surprised by how much they were spending on energy. When the information was annualized and shown in graphic form they were impressed with how much they could save. Using the buyer's club as an informational tool will increase business participation.

4. Many owners preferred using their own contractor, despite the benefits of having a pre-list of lower cost energy retrofit contractors. Therefore, building flexibility into the buyer's club model would be important. This may conflict with having a list of local service providers, but may also provide education and information on new business strategies to service providers not on the list. For example, if a site wanted to use its own contractor, it could be allowed to do so on the condition that the contractor can show the same expertise required of other contractors in the program. If the contractor does, it could then be included on the service provider list. If not, recommendations could be made for the contractor to participate in a certification program to build expertise (and new business by being listed by the buyer's club). The question remains whether the participating site would be allowed to use its contractor if it can not show the expertise required.

5. Small business programs have to be cost effective to be successful. Therefore, having an efficient tracking and auditing system to refine and expedite the whole process will lower the overall program cost in the long run. Piloting the club first in a local area will give valuable information on how best to deliver services to small businesses. Additionally, showcase sites can be developed as discussed in item 2.

6. The majority of small businesses in a downtown area are retail establishments. It may be appropriate to include specialty lighting design services to address concerns related to retail and product lighting as an added service in the club. Finding other such services would add appeal to small businesses joining a buyer's club. For instance, purchasing "green" products through the club may be another added attraction. Tying in to other activities in the community, such as fire and safety programs, would also leverage costs and add value to the program.

Cost Effectiveness of Program

On a site basis, energy efficient upgrades identified in this pilot have an average rate of return 38% and are cost effective on their own merits. This does not include the added benefit of utility rebates.

Considerable time and resources were spent in developing and implementing this pilot. Because it was a pilot and a market transformation program, the CTAP project incurred significant development and start-up costs not associated with an existing operation. This pilot gave significant understanding of what it might take to start and run a buyer's club for energy efficient products and services.

Buyer's Club Model

Rather than purchasing low efficiency products at a premium from local retailers, an energy-efficiency buyer's club could encourage businesses to purchase high efficiency products through low purchase price and increased access to information. Additionally, a buyer's club could give businesses increased access to service providers with expertise in quality energy-efficiency installations. A buyer's club could also increase demand for both energy-efficiency products and services, creating new opportunities for product and service providers to enter the energy efficiency market.

Solution to barriers

The CTAP project and other programs (Boman 1995, Public Technology, Inc. 1989) have shown that the primary barrier in this sector deals with the economies of scale. Costs associated with a project can be broken into two phases, marketing and outreach, and project implementation. Marketing and outreach costs to an individual small business are often comparable to those of a large business, but the benefits (either in pollution prevention, or monetary profit) are much smaller. Also, the costs of purchasing products and services during the project implementation phase is much higher for small businesses (as was seen in the CTAP project) because they simply do not have the same purchasing power. A typical energy-efficiency project in a small business will retrofit lighting fixtures, excluding labor costs, at a cost of $38 per fixture. Large businesses undertaking the same project could expect a per-fixture cost of $23. The economies of scale are obvious; a small business can end up paying 40 % more for products alone.

A buyer's club can address these issues. The small businesses could pay a membership fee to ensure the sustainability of the program; this would depend on the organization implementing the program. For example, a local chamber of commerce or business association might charge a fee to non-members, but make the service free to members. Membership, as a way to aggregate the small businesses, will provide the necessary purchasing power. Relationships, as modeled in the CTAP program, would be developed with distributors and services providers to present aggregated projects with the right economy of scale to buy down the cost of products and services. A business' membership in the buyer's club could also be used to provide information about energy efficiency.

Buyer's Club Pilots

As with CTAP, a buyer's club should first be run on a pilot basis, potentially with subsidies from a city or local utility, or through grant funding. This would give a picture of the best way to market to the businesses, and would build some showcase sites to increase the trust of the community in the program. A consortium could be formed that would include any organizations interested in ultimately running the program, plus utilities, or any organization that is known and trusted by the local small business community. Using a variety of organizations that small businesses knew and trusted increased the success rate of the CTAP program to 34 %, compared to the usual 5 % in most utility programs. Ultimately, the buyer's clubs would be run by a local business association, a chamber, or a city.

The pilot for the buyer's club could be implemented in three phases, a planning phase, an implementation phase and an exit phase. For the first phase, the consortium would be developed, and used to conduct market research to design a marketing and outreach program. A list of technologies

that would most benefit the small businesses would need to be developed, as that would depend on a number of factors in the local area. From this information, relationships should be established with distributors of products and services that will reduce costs to the aggregated small businesses.

Buyer's Club Model

A buyer's club is a means of maintaining a small business' access to efficient, cost-effective products. For example, through the buyer's club, small businesses could purchase products such as efficient lamps and ballasts, high-efficiency motors and air conditioners, or purchase services such as operations and maintenance and whole building retrofits. A list of product and service providers can be established through a request for qualifications (RFQ) process, similar to the process followed in the CTAP program. As a part of membership, the business' project could be managed, reducing the time required by the business owner in dealing with the project. Sites could opt not to have the project management option, or wouldn't need services as their projects involve minimal labor, such as screw-in installation of halogen lamps or compact fluorescent lamps. Following are examples of types of services that could be provided through the Club.

Project Management Included. Recommendations would be made to a business owner and would include project management and aggregation services. The site would continue to use the buyer's club when purchasing products and services in the future.

User Manages Project. Recommendations would be made to a site business owner that would include project management and aggregation services. The site would decide to implement the project on its own but would still be able to get greatly reduced costs through the Buyer's Club by using service providers from the RFQ list, or in purchasing products. The question still remains as to the relationship between services providers with which the site has a previous relationship and wants to continue to use. The site would continue to purchase energy-efficiency products through the buyer's club in the future.

No Project Management Required. Recommendations are made to a small business that are not labor intensive enough to merit project management. The site would purchase products through the buyer's club, rather than purchasing low quality products, or recommended products at a high purchase price. The site would continue to purchase products and future services through the buyer's club.

No Previous Contact/No Services Provided. The organization providing site survey could only do a limited number per month. In the City of Berkeley alone, there are nearly 2,500 small businesses. The CTAP project showed that at least half of all small businesses in this service sector could benefit from energy efficiency. A buyer's club could be marketed to these customers through a chamber of commerce, vendors, the media, their business associations, the local utility and city economic development offices, all sources they trust as independent evaluators. The businesses would be able to take advantage of services not currently being offered that would enable them to implement energy-efficiency projects. One of these organizations could also run the club. This could ensure the continuation of the club, as well as the increased probability of it's success.

Conclusion

Presented here was an outline of a new approach to providing energy efficiency services to the small business community, based on a pilot project conducted in the City of Berkeley. The program successfully aggregated 6 businesses to buy down the cost of both product purchasing and services. The pilot was costly; the lessons learned from the CTAP project should be incorporated into future pilots in other geographical areas to reduce costs. However, CTAP showed the benefits of the buyer's club concept, and the need for future refinement of such a program. While not explored through CTAP, it is conceivable to include power purchasing and purchasing of related products through a buyer's club. Lastly, to ensure the long term sustainability of the program, the clubs should be run through a local organization with which the businesses already have a relationship with and a certain level of trust.

References

Boman, J. 1995. "Seattle Nets Sustainable Urban Growth Management and Multiple Resource Conservation Through the Neighborhood Power Project". *Proceedings from the ACEEE 1995 Summer Study on Energy Efficiency in Buildings*, Volume 9, pp. 21-29. American Council for an Energy-Efficient Economy, Washington, D.C.

Dennis, W., Phillips, B. and Starr, E. 1994. *Small Business Job Creation : The Findings and Their Critics.* National Federation of Independent Businesses, Washington D.C.

Detham & Associates. 1994. *Smart Business Program Design.* Report submitted to Seattle City Light, Seattle, Washington.

Public Technologies, Inc.. 1989. *The Hidden Link: Energy and Economic Development. Phase II: Marketing and Financing Strategies for Community Energy Projects.* Report prepared for U.S. Department of Housing and Urban Development, Washington, D.C..