Transforming Markets To Get Efficiency Into The Residential Sector: Where Are The Contractors And What Do They Want And Need?

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ABSTRACT

In 1998, the California Board for Energy Efficiency (CBEE), working through the four California utilities, offered a Standard Performance Contract (SPC) program for the residential sector. As part of program evaluation efforts, this project used interviews with participants, non-participants, and contractors to gather feedback on three key issues: (1) the design and implementation of the Res-SPC program as offered for Program Year 1998 (PY98); (2) needs and preferences for future programs; and (3) suggestions for preferred program elements and feedback on a set of proposed elements. The interviews were used to provide input into the design of the PY99 residential standard performance contract program.

The interviews determined that there were fairly clear reasons that firms elected not to participate in the Res-SPC as offered in PY98. The evaluation identified a number of specific program elements that would better assist contractors and the types of residential customers they serve, and improve participation in programs. Feedback was provided on: preferred financial incentives; acceptable approaches for providing leads; the usefulness of directories; training and certification approaches; and suggestions for needed customer education. Respondents also held strong preferences about the roles that specific entities (utilities, Boards, etc.) should play in programs and in transforming the market.

Some of the most useful information regarded efforts these firms are already undertaking to market and improve themselves as efficiency providers. These efforts cover a wide range. Some have already created sophisticated web sites, some have sought out specialized training and certification, some are members in professional organizations, while others have been much less active. Information was also gathered on existing programs being sponsored by other entities that provide opportunities for leveraging efforts and funds.

Design and Experience of the PY1998 Residential SPC Program

The California Board for Energy Efficiency (CBEE, or the Board) was established to oversee the development of next generation energy efficiency efforts at a statewide level. The CBEE was tasked with guiding the transformation of the energy efficiency market in the State. The goals the Board established included: working to privatize the delivery of energy efficiency services; growth and expansion of the energy service provider industry (ESP); and helping reducing customer related market barriers.

As a key part of these efforts, the Board developed a series of programs designed to modify the delivery of energy efficiency services from the traditional utility-sponsored model to a system in which

responsibility is transferred to the market sector. As part of the portfolio of programs, the CBEE developed a Residential Standard Performance Program (SPC). This program provided financial incentives to ESPs for installing efficiency equipment in the residential sector.

Program Design and Administration

In 1998, the California Board for Energy Efficiency (CBEE), working through the four California utilities, offered a Standard Performance Contract (SPC) program for the Residential sector. This program provided the opportunity for energy efficiency service providers (EESPs) to submit a variety of efficiency services (lighting, HVAC, and other services) for the single- and multi-family sectors. Projects could be compensated based on the basis of monitored performance, or on the basis of "deemed savings", based on the measures / services implemented. For the first year, it was not possible to contract quickly enough for new statewide central administrators, so the utilities served as interim administrators for the program. The elements of the program, as originally offered for Program Year 1998 (PY98), follow:

- There were two major types of projects that would qualify for funding – direct install projects in which the sponsors would install measures in target households; and retail programs, in which sponsors work with manufacturers or retailers to provide efficient measures through retail outlets.
- Filing for funding required completion of a Basic Project Application (BPA), requesting information on the submitting firm, the target residential market(s), the types of measures to be installed, the kilowatt hours projected to be saved, and the amount of the incentive funding requested.
- After selection and qualification, a Detailed Project Application (DPA) form was to be completed, including a more detailed plan for the project and a measurement and verification (M&V) plan. After review and approval by the utility, a standard contract is prepared.
- After installation, the utility (or its designated agent) performs an inspection of a percentage of the installations.
- The program offered the choice of "deemed" savings estimates – a priori estimates of the savings that could be designated per installed measure; or measured savings approaches.
- Installation inspection, first payment, monitoring, and final payment are the remaining steps in the program's design. Direct install projects are paid on the basis of 40% at the end of the first year, 60% after M&V requirements are met; retail projects are paid 30% at the time goods are stocked, and 70% after sales are demonstrated.

Summary of Initial Program Year Projects Funded

The first round of the PY98 Res-SPC program committed $12 million to 14 projects. More than three-quarters of the funds in the first round were won by ESCOs, and other projects were sponsored by a non-profit, a manufacturer, and an engineering/ contracting firm. Only two of the selected projects took advantage of the retail program option; the remaining projects were direct install programs.

Before the application process expired, it became clear that there were going to be many more applicants than could be funded. The utilities and the Board determined to use a lottery process to select the participants. Almost all programs requested the maximum funding level, 30% of administrator funds. Therefore, three projects could be fully funded, and the fourth projects were

usually partially funded. Since the initial round, additional funding has been provided, and most of the interim administrators added 1-2 additional contracts.

Lighting measures took up almost half of the program funds in the first round, with showerheads and programmable thermostats making up another third of the program. The remainder of measures installed included water heating, appliances (refrigerators and clothes washers) and infiltration and pipe wrap measures. When the measures associated with the second round of funding are included, the proportions of measures increase for water heater measures (controllers).

First Year Program Operation – Deviations from Expectations

The authors conducted interviews with Board staff, Utility staff, and a sample of participant and non-participating energy service providers to gather information on the program's implementation and early stages of the operation of the program (interviews were conducted in August and September 1998). Besides program staff, the interviews included ESCOs, engineering firms, contractors, non-profit agencies, and retail establishments. Feedback on program design and delivery experience is summarized below.

- **Program administration**: It had been planned that at some point, program administration duties would be carried out by one (or possibly more) independent statewide administrators. However, timing for the first year of the program could not accommodate the selection process necessary, so the utilities were asked to serve as interim administrators for the program.

- **Program planning**: Program planning was conducted relatively quickly, considering the size of the program. The planning process included work by the CBEE and by utilities, with significant input from other actors, including a Technical Advisory Committee (TAC) to the CBEE, consultants, public comment, and others. Significant input (through the TAC and other mechanisms) came from firms that had strong financial interests in the program – who had the time and financial incentive to do so. The planning process was compressed and intensive, and input from groups with less financial interest had a harder time committing volunteer time to contribute to the process, so there was relatively less input by public interest groups, uninterested parties, and governmental and other agencies than was desired (although significant efforts were spent trying to encourage customers, governmental and other agencies to participate). In fact, several program participants (and non-participants) indicated that, although they would have liked to, they were not able to participate in the development of the program. One other factor related to program planning was that initial planning work concentrated on the commercial sector standard performance contract program – the residential sector program was planned very quickly and because of time limitations, the program largely copied the non-residential SPC. This introduced some program aspects that may not have been the best "fit" for the residential sector.

- **Application deadlines/timing and outreach**: Many of the interim administrators undertook significant efforts to notify potential program applicants about the program and funding, as well as about workshops to assist in explaining program applications. However, many firms that might have been appropriate applicants reported that they did not hear about the program, or did not hear soon enough to allow them to become active participants. There were concerns expressed that those firms that were "in the loop" (e.g., those that spent time involved in the planning process) had very distinct advantages in getting program funds, and this was a source of resentment. The

workshops received very positive comments from attendees, although some noted that in a couple cases there were only two days to two weeks between the workshop and the date that the applications were due.

- **Selection / lottery:** Many more applications were submitted than could be funded, and lotteries were used to select among the applications submitted on time. The fact that selection would be by lottery was known at the time applications were submitted, and review of the applications shows that multiple applications with various combinations of lead firms were submitted to increase chances of selection. A review of the un-selected applications that were retained shows that they included, in the majority, ESCOs, as well as electric, HVAC, or insulation contractors; retail firms; land development corporations, manufacturers, and others. There was unanimous agreement that the lottery was a poor process for selecting projects. Although it protected the utilities from concerns about "subjectivity", problems noted included lack of innovative projects, and "gaming", leading to only a very few really different programs being submitted for review. Suggestions for changes included introducing sub-allotments for certain types of projects or measures, and methods / criteria for reviewing firms and their qualifications. However, concerns with these approaches include the difficulty of establishing a process that avoids subjectivity in the review, and issues surrounding the quality/reliability of information submitted for review.

- **Application forms and manuals**: Application forms were generally thought well-suited to direct install projects, but poorly suited to those proposing retail programs. Certainly, there are distinct differences between information for the two types of projects, and separate forms were suggested. Most respondents praised the manuals (although some commented on the length), with the exceptions of portions that were repetitive, instances where figures and text did not match, and instances in which information was split between several sections. There was concern about the lack of uniformity of the program. This manifested in two key ways. Several thought it should be a uniform program across the state for a number of reasons including to simplify matching retail distribution networks to the program boundaries. Others were concerned with differences in the program and application process between the four interim administrator areas, increasing work and confusion for applications submitting in several territories.

- **Project size limits / minimums and maximums**: Project minimums were reported to be too high to allow the majority of engineering firms and contractors to participate in the process. Maximums were set high enough that only 4 projects could be funded in any territory. This reduced the number of firms that would be selected to deliver programs. However, there was also concern about making certain that projects were large enough to support the economies needed to conduct the outreach and fixed program costs.

- **M&V**: The M&V aspects of the program have not been demonstrated yet, as projects are not very far along. However, given that the major changes that occurred in the project submittals concentrated on M&V modifications, there are indications that additional work is needed in this area. Specifically, many changed from the measured M&V to deemed savings. Others were able to provide data to add measures to the deemed list. There were concerns and potentially misunderstandings of the requirements for measured savings under the program this year.

- **Project start-up timing:** Although applications were received and lotteries held in early spring, projects got a later start than initially anticipated. As of the end of September, 1998, only one retail program was underway, (in place since June/July), and two direct install programs have retrofitted a total of about 70 dwellings. No other projects were in the field at the time of the first round of interviews. The late start stemmed from a fairly extensive round of refinements and negotiations to turn the applications into contracts. Clarifications on requirements, on M&V, deemed savings values, and other modifications took several months. The most common changes in the projects between initial submittal and ultimate acceptance were: move to deemed savings from measured; and reductions in the list of measures included (e.g. elimination of duct measures that required higher M&V, among others).

- **Expected duration of projects:** Most of the projects are "back-loaded", and it will take 6-9 months for significant portions of the measures to be installed. The projects are expected to last 1-1/2 to 2 years, including M&V.

- **Match with program objectives and overall issues:** Throughout the interviews, concerns were repeatedly raised about the lack of link between the program's objectives and the design. Concern was expressed that because of a number of factors -- the "gaming", the compressed application deadlines, and the use of random, rather than qualification-type criteria in selecting programs -- the selected programs were largely similar to old types of programs and measures. In addition, it was suggested that the large project maximums reduced the ability of the program to help energize the field because the projects could go to a very small number of firms. Many felt this was not representative of the objectives of "market transformation", but that the program led to similar measures and delivery methods as past utility program efforts. Some suggested modifications to the program's design and objectives, including:
  - revisions to the setting of incentives for measures to provide preferences for projects and measures helping to achieve market transformation, upstream, and other objectives.
  - revisions to the M&V for higher priority measures. This might, for example, include research on appropriate "deemed" values for these measures, or shorter measurement or payment periods for programs that came closest to meeting objectives
  - avoidance of an "unfair and unreasonable" lottery for selection of programs, and substitution of a process prioritizing projects on their link to objectives.

Feedback on Program Strengths

Participants complimented the flexibility of the program. Issues that showed merit in the first year of the program, that they felt should be refined and retained included:

- incentive levels high enough to encourage participation.
- allowing retail projects as part of the program provides some opportunity for market transformation throughout this avenue.
- deemed savings *as an option* were considered a plus, allowing earlier reimbursement and less uncertainty. Some suggested expanding the list of measures that had deemed savings values
- the forms worked reasonably well for direct install projects, and the manuals and workshops were generally complimented.
- the program provides a mechanism to transition customers from thinking of utilities alone as their efficiency providers to providing credibility to other providers.

- many were adamant that the program should be continued and that there should be NO hiatus.[1]
- the utility staff were generally viewed as very helpful.

Program Needs and Preferences for the Residential Sector

Based on feedback and review, the initial program design, following the design developed for the non-residential sector, was not entirely successful. The Board determined to re-examine the program offering to the residential sector, and sought to consider programs that might get past some of the problems and provide a better "fit" to the residential sector. As input to that effort, the authors conducted a series of interviews with contractors in the field – important actors in the delivery of services to this sector -- to identify program elements and design that would meet contractor and residential customer needs, including:

- provide assistance that would help meet the needs and barriers contractors believed residential customers had,
- help contractors be more effective in getting additional efficiency equipment into the field, and
- help increase the health of the contractor and private energy service provider market.

Contractor Interview Process

Twenty six interviews were conducted, including a variety of contractors (providing services in HVAC, "all around efficiency", glazing, window, door, and other services), as well as several manufacturers and ESCOs. Firms ranged in size from 5-45 employees at the local level (some were larger, nationwide firms with many employees). Both open-ended and closed ended questions were included in the interviews. Overall, we note several factors that provide a context for the interviews. A majority of the firms that would likely be eligible for a program in these sectors are relatively small in size and scope, and are focused on day-to-day operations. They do not have staff to dedicate to program design or to significant paperwork. The firms are bottom-line oriented, and programs must clearly identify benefits that could accrue to the firms if they participated in a program. For many firms interviewed, lead generation is a primary focus. Finally, the ability to leverage through associations may be difficult, because membership in existing professional organizations is very fragmented (over a dozen organizations were mentioned), and many of the contractors belong to no associations at all.

Market Needs and Preferred Program Elements

The authors asked a series of questions to solicit information about the key "needs and barriers" that residential customers have related to purchases of more efficient equipment. Also, early in each interview, respondents were asked what types of services or incentives the CBEE could provide or facilitate that would enable their company's ability to sell more energy efficient products to residential customers. Reflecting the popularity of earlier programs sponsored by the utilities, the most common response to this was the suggestion of a rebate program. Many interviewees stressed the importance of

[1] Some recommended discontinuation of the program or hiatus to allow significant revamping, but the vast majority – including those complaining that there was not a good link to objectives -- suggested that the program should be continued and continued without hiatus. Many noted the extreme detrimental impacts to programs, customers, the learning process, and momentum from stopping and starting programs and projects. Program continuation was strongly preferred by many of the respondents.

keeping any program as simple and prescriptive in nature as possible. Broadly speaking, suggested program elements centered around the following three items:[2]

- financial incentives -- specifically rebates, tax rebates, low / no interest loans or delayed payments. It was suggested that fairly large rebates might be needed to get customers to move to much more efficient equipment;
- marketing -- specifically the provision of qualified customer leads to firms; another suggested that cooperative advertising budgets (potentially involving the Board, contractors, and manufacturers) would lead to a much bigger bang and a more integrated outreach strategy;
- education -- specifically general education, information packets, information about new energy efficient equipment; others suggested that information was useless if customers didn't have something direct to act on.

Reactions to Proposed Program Elements

Other parts of the evaluation project had conducted surveys of similar programs in other locations, as well as focus groups. After asking for unprompted suggestions about potential program elements, the next set of questions in the contractor interviews gathered feedback on a set of proposed elements, including: financial incentives; referrals and business leads generation; contractor directories; customer education; contractor certification; and contractor training. We tested the reaction of contractors to these program elements, and asked them to rank them on a scale of 1 to 5 (with five being the most favorable). Table 1 provides a summary of these rankings.

Table 1: Rankings for Pre-selected Program Elements

Program Element	**Score** (1=low;5=high)
Financial incentives	4.8 (range 3-5)
Referrals for EE contractors	4.0 (range 0-5)
Customer Education	4.0 (range 0-5)
Contractor Certification	3.9 (range 1-5)
Contractor Training	3.7 (range 1-5)

Financial Incentives

When asked, unprompted, what program elements would be most helpful to contractors in promoting energy efficient products, "rebates" were mentioned in nearly every instance. This reflects the experience of these firms with (1) utility-sponsored rebate programs, (2) their experience marketing to customers who are very price sensitive, and (3) the perceived simplicity (and reliability) of rebate programs. Rebates were preferred, but many interviewees also felt that low- or no-interest loans were also very favorable programs, especially to get customers to invest in large-ticket items.

The availability of financial incentives, it was noted, will almost always help sway the sale toward energy efficient equipment. Upon further probing, several contractors felt that it was more the

[2] Additional elements mentioned by individual firms, although less consistently, included energy audits, clearinghouses for certification, and assistance locating and selecting an independent laboratory for testing of new measures.

presence of an incentive, rather than the absolute value of the incentive itself, that is important.[3] Rather than factoring the incentive directly into the incremental capital cost analysis, the incentive often serves as an additional attribute or feature that can be linked to the purchase of a specific piece of equipment. This assessment corresponds with the fact that, for the most part, customer payback analyses are relatively informal and typically done with paper worksheets rather than more sophisticated (and possibly more precise) computer-based analyses.

Several contractors offered words of advice on incentives. One recommended making sure rebates are sent to consumers rapidly for greatest credibility and impact.[4] Another contractor recommended that, in order to prevent gaming, incentives should be paid directly to consumers and not to the contractor. One other suggested that separate payments to customers were best because it was too difficult to get customers to believe that the price "would have been" $50 higher without the program.[5] Two others mentioned refinements on incentives – one suggesting they be paid based on "balance of system", another suggested variations based on level of efficiency, and another felt rebates could be in the form of interest rate reductions. Some noted problems if installations and sizing were not appropriate rebate programs might not lead to the desired efficiency improvements. Another expressed concern that only measures appropriate to climate zones should receive incentives. Finally, as evidence of the effectiveness of rebate programs in transforming the market, one interviewee noted the example of washing machine rebates program. Key points in their opinion were providing a consistent and continuing program, good outreach at points of sale, and rebates that helped get past the "infant industry" issues to allow costs to come to levels that will allow the phase-out of incentives.

Referrals and Directories for EE Contractors

As noted above, lead generation is a critical activity for the businesses contacted for this survey. As such, any program element that either provides leads or increases the success of on-going sales prospecting activities is viewed as having great value to the contracting community. Past experiences with the PG&E/EGIA program, for example, was often referenced as a successful example of a program that benefited contractors in this manner. The most commonly- and positively-mentioned approach for useful referrals was to use a "bang-tail" (the "rip off" part of an envelope) on customer energy utility bills. The customer would then use a check mark to indicate whether they were thinking of making equipment changes, or services they might need, etc. These leads could then be forwarded to the utility, but then to a third party to assign leads out via a "fair" process to "qualified" firms. Two stages of contact – a package of information sent to the customer in response to their request, followed shortly by a call from contractors available to offer bids -- seemed to generate positive leads for the contractors involved in the program. There was strong opinion that the "bang-tails" generated more leads than later versions of the program that used a bill stuffer technique – much as they may seem an annoyance, contractors said that "making" customers deal with the bangtail generated more leads. This was a highly regarded program, and contractors suggested not "reinventing the wheel".

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[3] Of course, some held different opinions. Others argued that it takes large incentives to change decisions, and another felt that incentives were not deciding factors in the types of measures that he specified.

[4] They also suggested that if rebates are in two parts (e.g. part utility and part manufacturer) that a joint check be provided for biggest impact.

[5] However, a good point was made by another interviewee in the "participant" interview phase. Rebates provided higher up the chain (e.g. to manufacturers) can lead to even greater savings to the customer. This is because the succeeding percentage "mark-ups" are applied to this smaller initial cost. This can significantly improve the benefit cost analysis, but as the other respondent points out, rebates are more direct and may sometimes be more effective.

Contractor directories were viewed somewhat less favorably by contractors. Most concerns centered around how the information would get to customers efficiently, and comments that there is already so much information "out there". Some contractors were very favorably disposed to directories, and in some instances, directories or lists were the type of information mailed to customers in response to the referral process discussed above (solving the major concerns about directories).

Customer Education

Some contractors view this as a critical area for CBEE involvement. Those that see this as being important, feel that increased customer awareness of energy efficiency options is necessary in order for them to pursue a differentiation strategy based on energy efficiency. Other contractors, however, feel that customers (1) are generally already well aware of energy efficiency options and (2) are either interested in this attribute or are not interested in it. One comment that was raised several times is that the information needs to "compete" with the information customers get on a million other topics – the quality of outreach on efficiency needs to be raised considerably, and the outreach needs to include television and other more serious media.

Several contractors mentioned that it would be most helpful if consumers were simply educated in what to ask for when shopping for equipment and contractors. All too often, these contractors report, consumers assume that the only important decision is the equipment that is selected and that the quality of an installation provided by one firm is the same as another. If consumers were educated more in how to select a contractor, then this would allow firms to sell more effectively on the basis of energy efficiency as related to the quality of system selection and installation. Importantly, this corresponds with information gathered during focus groups in which customers voiced a need for more information on what to look for while selecting qualified contractors.

Although some still felt that general education was needed (one thought only 20% of customers were aware), another thought that the source that most customers relied on was that provided by the contractors. They suggested that additional information to contractors would be useful. Another thought that information along the lines of "Consumer Reports" would be useful education tools. One interviewee that was particularly involved in education felt that some of the "help lines" established by the utilities were a good resource, but were significantly hampered by the fact that the phone staff could not recommend, mention, or endorse specific equipment (brands, etc.) because of liability concerns. They promoted the idea of a neutral third party assistance line that could go further in providing even more useful information to interested customers.

Contractor Certification

Certification, as a possible program element, was received favorably by most of the persons interviewed. Certification is viewed as being useful to both the industry and to the customer. In particular, contractors saw certification as something the vast majority of "reputable" contractors would be in favor of, and would serve the customers by weeding out problem firms that "taint" the industry's image. In particular, the PG&E / EGIA program was referenced in many instances as an acceptable model for certification that the CBEE may wish to pursue. They liked the "third party" independence of the certification firm, and the clear review process and expectations that got firms on the list.

A wide range of possible certification criteria were mentioned during interviews, including: training; current business license; number of years in business; bonding status; advanced licenses;

providing some form of duct testing; periodic inspections of completed work; surveys of past customers; extended warranties; acceptable format / clauses in written contract with customers; appropriate insurance; set policies for installation practices, marketing and sales, and restrictions regarding use of names, etc.; and penalties for violations

It was stressed that, in order to be successful within the contracting community, certification must (1) be meaningful and have "teeth," and (2) be very strongly marketed to consumers so that it is recognized, leading customers to ask about it. Other attempts at certification have, it was felt, fallen short in this regard. The EPA Energy Star Program was cited as a potentially useful program that consumers really know very little about.

One program that provides a level of quality certification for consumers and was cited in several instances as having successfully marketed its brand to consumers was "ValueStar." As one element of the ValueStar promotion, a sample of 400 past customers is provided for a survey that is then administered by an independent agent. Importantly, ValueStar is marketed heavily to consumers through high-visibility mechanisms such as billboards and transit advertising.

Contractor Training

Contractor training – potentially covering installing HVAC, insulation, lighting, windows, weatherization, appliances, and other energy-related services -- received mixed enthusiasm. Several of the contractors specifically mentioned that training needed to be conducted by high quality people with hands-on experience, that "know the lingo" and know what is actually seen in the field. Several mentioned they had attended training sessions in which they felt they knew more than the instructors, and they did not feel their time was well spent.[6]

Importantly, many of the contractors with whom we spoke place a great emphasis on training and already invest considerable resources in this area each year.[7] Many felt their firms were "up to speed" and were generally more interested in program elements that would have a more direct impact on their financial bottom line. If training is provided, either as stand-alone programs or as part of the certification process, it may be valuable to highlight the importance of continuing education and point out areas in which even seasoned contractors may need additional training to maintain currency.

Areas in which training was received most favorably were those associated with utilizing duct testing equipment and, in some cases, computer-based analysis and sales tools. With respect to duct testing, some contractors recognized the potential for performing more rigorous analyses, but are skeptical that this is something that will be recognized by customers. An additional training element desired by one company that is worth noting is "how to do their installations more efficiently." In other words, how can they perform their installations, stressing energy efficiency, and still maintain competitive pricing for their services? Although this is not necessarily technical training per se, this type of training may legitimately aid in building an energy services industry since this will make the smaller firms more viable in the longer-term. Another felt that there was a very significant lack of understanding of "systems approaches" to building energy by specialized trade contractors, and that training or education in these issues (or "team approaches") would be very valuable in increasing energy efficiency in the residential sector.

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[6] The contractors generally expressed a preference for workshops over other possible methods of providing training. One, however, felt that the most useful method would be if on-site training at the contractor's place of business would vastly improve the value and cost-effectiveness of training from the contractor's point of view. Many interviewees also specifically praised the facilities at the Stockton Training Center.

[7] In fact, one respondent (not a contractor) felt that some reimbursement for attending training sessions might be an appropriate financial incentive for the program.

Existing Programs to Leverage

Several programs were mentioned during interviews as programs that should be considered when designing a residential contractor program. These programs, which include features that should be considered for either duplication or coordination by the CBEE, are described briefly below:

- **EPA Energy Star (appliance labeling and contractor listing):** Many of the contractors referenced the EPA Energy Star Program as one with which the CBEE should consider coordinating. The Energy Start program provides participating retailers with: free point of purchase and sales training materials; listing on Energy Star web-site; access to utility and manufacturer promotions; and leverage from ongoing national brand awareness program. Although the Energy Star has conducted a substantial media campaign to increase brand awareness, several contractors noted that customers do not really know what the Energy Star label means. One possible option for the CBEE would be to focus customer awareness of the Energy Star label on specific efforts and program elements that the CBEE is endeavoring to support.

- **PG&E / EGIA Program (contractor certification and referral):** Many of the contractors and others interviewed referred to this same, well-received Electric Gas Industry Association (EGIA) certification program as the model of the type of program they would like to see again. This program included several elements: lead generation (through bill stuffers and "bang-tails", with the latter being far more effective); lead distribution (via EGIA); certification through EGIA; financing; and rebates.

- **Energy Efficient Mortgage Program (long-term financing for energy efficiency):** A promising program that can be enhanced by CBEE efforts is the nationwide HUD program that encourages investment in new energy efficiency technology through the Energy Efficient Mortgages Program. This program, works through FHA/VA and conventional lenders and allows expenditures for retrofit of (new and existing) homes at the time of purchase to be incorporated into the mortgage as long as the improvements don't cost more (amortized over the period of the mortgage) than the monthly bill savings. This program provides strong opportunities to transform markets, since the program could work through fairly centralized groups (lenders) to affect the millions of homes that turn over every year in California. Many of the larger lenders are reportedly already in the program, including Fannie Mae.

- **Performance 4 Program (certification for older homes):** Another suggested program is a special certification program for older homes. This program would provide a special certification for homes that are retrofitted with a variety of efficiency modifications. Initial pilot testing indicates that these certifications are viewed well by households as well as appraisers, and that homeowners may be able to get full value back for the investments. Benefits are savings, design, and appeal, which appraisers like and incorporate into their valuations. One particular program example is "Performance 4" homes (stands for cleaner, quieter, more comfortable, and more energy efficient), which would be certified through the state. If a certain list of improvements are completed, certified, and inspected through a third party, then the home is "certified". [8] Initial pilot

[8] The "must do" items in this program are: insulating attics to R30, envelope sealing for 30% reduction, sealing and testing of ducts, and installing low flow showerheads. From a second list, two of seven items must be picked – wall insulation,

work on 20 homes has been conducted, and the California League of Homeowners – a non-profit consumer advocacy organization, has shown interest. Third party certification is identified as a key component of the program.

Summary and Proposed PY99 Directions

The evaluation of the program as offered in 1998 demonstrated that only a small percentage of the firms that were notified about the SPC program applied for any of the millions of dollars in project funds available for the program. In particular, despite a program objective to transform the market and enhance the range and number of firms providing service, few smaller, contractor-type firms submitted program applications.

The special contractor interviews provided guidance for refining programs to meet the needs of this subsector of the residential market. Programs in this sector are complicated by the fact the contractors are specialized, and there seems to be no one natural "umbrella" organization through which services can naturally "piggyback" (although efforts in that area are proceeding). However, we found there are many specific program elements that can support, and not supplant, efforts these firms are already undertaking, and can work with the array of contractor-type EESPs to enhance market transformation in the residential sector.

Overwhelmingly, a program similar to PG&E/EGIA's leads generation, certification, financing, and rebate program was the preference of the contractors and other firms contacted. This program was simple to administer, and the independence or the third party monitoring for certification was strongly preferred. Strong marketing of the certification – sufficient to get customers to ask about it – is considered an important component.

Concerns about simplicity were very important to this sector. Rebates were the number one, simple-to-understand/administer suggestion for assistance for the interviewees, followed closely by low- or no-interest loans. Leveraging some promising existing or beginning programs would also seem to provide significant opportunities for transforming the market in a way that includes the contractor segment of energy efficiency service providers – at potentially very reasonable cost.

- Helping promote the Energy Efficient Mortgage Program to customers and to contractors could help get efficient equipment into millions of homes in California by intervening at a convenient transaction point – purchase of homes.
- Working with infant efforts to establish a certification program for older homes, developing a "valued" identifier for older homes that have been retrofitted to meet efficiency standards.

Clearly, there was mixed feedback about the initially considered elements for the PY99 program. As this article goes to press, the key elements of the updated single-family PY99 program include: use of customer vouchers for payment; a set of relatively simple and consistent measure specific incentives (HVAC diagnostics and tune-up, and duct-testing and sealing); linking measure-specific incentive eligibility to diagnostic requirements; training requirements for contractor eligibility; and listing/directories of eligible contractors. Note that the multifamily component of the residential contractor program is different, and more closely mirrors the Small Business SPC program. Uncertainties remain about whether the new PY99 programs or residential programs in the future will include retail components, which some interviewees argued were important components of market transformation. The status of this program element is currently unclear.

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solar screens, water heaters with 62 efficiency or higher, etc. Any combination gives the "Performance 4" rating, and homeowner get a certificate.