SDG&E New Construction Process Evaluation Study Report

Final Report

Project No: 0714 SDG&E NC Process Eval 06-08

Date: August 12, 2008

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This study has been conceived as a special-purpose process evaluation, to inform the SDG&E new construction program managers about how well their current program processes are working for their customers, and for meeting their 2006-08 goals. This study is also to suggest possible improvements that could be adopted in the program design or operations. Based on discussions with SDG&E, the study scope was limited to SBD, along with a component of Sustainable Communities, and Advanced Homes.

Data collections activities included interviews with program staff to gain an understanding of program activities, issues, and goals, and focus groups or interviews with program participants to gain customer feedback. Study participants included thirteen staff members and 33 program participants.

Based on the interviews and focus groups we conducted, several consistent themes emerged that helped define recommendations for ways to enhance the programs. We also note these observations are based in part on experiences of builders who participated in the program one or more years ago, so some of the recommendations may have already been implemented or are underway. In these cases, conclusions from our research can further justify such program revisions.

1. Savings By Design Recommendations
    a. Provide Early Energy Charrettes - The objective of the charrette would be to review all of the potential energy efficiency aspects of the project, and to explore all feasible, “out-of-the-box” ideas at an early enough stage that they could conceivably be incorporated into the project.
    b. Push High Efficiency, Not LEED - Pparticipants were skeptical about LEED and its value, yet they all acknowledged that higher levels of energy efficiency were valuable. This led some to question why the utility would make LEED certification a requirement for higher level incentives, rather than simply providing higher incentives for higher efficiency.
    c. Expand Credit for Unconventional Efficiency Measures - As SBD becomes increasingly ambitious, it may become necessary to update the analysis methods to credit measures that lie outside the T-24 compliance domain.
    d. Establish Track for Cutting Edge Projects - Some of the designers, however, suggested that there be a track specifically established to encourage cutting edge projects that significantly diverge from conventional energy efficiency solutions, and which could demonstrate substantial new opportunities for advanced energy efficiency. The projects would likely be smaller scale projects with committed owners, but this option might help to point the way forward for the next level of efficiency.
    e. Provide Early Design Team Incentive Payment - Designers value the design team incentives and would like to have them earlier in the design process. Because the typical design team incentives arrive so late, often years after the extra design effort was expended, the link between the reward and the

behavior it encourages is lost. If it were easier for designers to receive a portion of the incentive earlier, it would likely be more influential and give SBD a more prominent role in their projects.

f. Encourage Public/Private Partnerships for Renewables - One of the school district participants used a model a public/private partnership for photovoltaics on their facility rooftops. It involved the district essentially leasing its roof area to a private investor, who paid for and operated a PV system. The school district shared in the energy savings dollars, and the investor was able to take advantage of the depreciation and tax credit incentives for the PVs, which would be wasted if the school owned the system. The utility could build upon this sort of innovative financing model, by actively encouraging and facilitating it to produce greater savings and renewables than would otherwise be possible.

2. Advanced Homes Recommendations

a. Program Components

- Institute more continuity in program offerings: Establishing a program label and requirements that are fairly constant and predictable over several years would likely increase participation and builder commitment.
- Leverage ENERGY STAR and LEED: Consider providing a range of ratings (such as ENERGY STAR and ENERGY STAR Silver, Gold, and Platinum) as ways to recognize various efficiency levels and leverage the LEED terminology.
- Continue to offer prescriptive options: Although simplification would justify reducing program options, the flexibility of a prescriptive program component could increase participation by bringing in builders who are unable to do comprehensive efficiency upgrades.
- Enhance demonstration/case study program component: These projects provide a vehicle for promoting and demonstrating advanced technologies and innovative designs.

b. Program Processes

- Program marketing materials should be improved: All materials should be at a quality level comparable to other professional marketing directed at builders and home buyers. The program Website should be reviewed and modified to increase its usability.
- Participants should receive recognition: Plaques for program homes or for participating builders to display could be useful for promotion. Recognition of rental properties in the program could help overcome the first-cost hurdle by informing renters their utility bills could be lower..
- Account Executives' role in recruiting and marketing should be enhanced: Account Executives are the main avenue for recruiting participants, but it appears turnover and other factors have disrupted their ability to work with potential participants.

c. Program Services

- Incentive amounts should be reexamined, taking into account current market conditions: Builders face a significant market downturn that could justify a short-term increase in incentives. Incentives should be examined, given recent trends in construction costs.
- Provide incentive options for architects, designers, engineers, and energy analysts: These industry members are key to helping builders select energy-efficient measures and incorporate them in their designs. Special analyses to examine additional measures increase design and analysis costs; so incentives for these activities could increase participation.
- Ramp up industry training and education while the industry is slow: The slowdown appeared to be a good time to develop and offer training on selected topics.
- Develop training modules available online: Specific training modules builders and others could access through Webcasts or at any time of their choosing would reduce travel costs and schedule disruptions.
- Focus training on benefits and costs of efficiency improvements: A common concern builders expressed was a lack of understanding about the benefits of efficiency improvements required by the program. Similarly, many said they were unsure what the most cost-effective ways were to meet program requirements.
- Provide training on compliance with the thermal bypass checklist: This ENERGY STAR requirement appeared to be a major obstacle for builders, but it is required to achieve ENERGY STAR energy savings. Programs and materials should be developed in conjunction with the industry to train builders and contractors on how to meet the requirements most cost-effectively.
- Produce information on comparative costs and energy savings of alternative measures: We suggest the utility work with the industry to determine the most useful format—for example, standard tables or calculating spreadsheets—for providing this information. Research would need to be conducted to compile cost ranges and energy savings of various energy-efficiency options. This information would need to be regularly updated to stay current.
- Provide a list of resources and contractors: Several builders said a list of information sources and contractors who could provide services required under the program would be very helpful. This could be provided on the program Website. Suitable screening processes and disclaimers would be required as would a process for removing resources and contractors from the Website.
- Provide access to a hotline: Various other energy-efficient and green building programs have developed hotlines for program and technical information, and they are usually well used. The utility should investigate the costs of providing such a service or linking into a similar hotline provided by another entity.

- Provide additional technical assistance and limited design assistance: The utility may have staff capabilities to assist builders with technical issues related to meeting program requirements. Account Executives could be more effective if they had training in technical issues or could link customers to utility employees or consultants who could provide the required assistance. The utility should be able to respond to designers and architects to provide access at least to limited design assistance.

d. Communications

- Outreach to architects, engineers, and HVAC contractors should be increased: Historically, the program has not reached out to broader groups in the residential market. Communicating with architects, engineers, and a range of contractors could help promote the program and improve participation and performance.
- Communications should be more timely: Given expressed concerns about frequent program changes and lack of builder awareness, greater effort is required to inform program target audiences about program changes. One option would be, whenever the program changes, sending emails to all past and current participants and to builders on lists developed by Account Executives.
- Internal communications should be frequent and timely: For Account Executives to be most effective, they need to stay current regarding program features and likely changes. Regular meetings with program managers and frequent internal electronic postings among all program staff would be useful for sharing lessons learned and new information that might affect future directions.

2. INTRODUCTION

As requested by San Diego Gas & Electric Company (SDG&E)), the HESCHONG MAHONE GROUP, INC. (HMG) and Quantec, LLC (Quantec)[1] submit this work plan describing the methodology for the process evaluation of Savings By Design and Advanced Homes. This work will be carried out under SDG&E contract number 5660009222.

2.1 Overview of Process Evaluation Objectives

This study has been conceived as a special-purpose process evaluation, to inform the SDG&E new construction program managers about how well their current program processes are working for their customers, and for meeting their 2006-08 goals. This study is also to suggest possible improvements that could be adopted in the program design or operations.

Due to the limited scope, budget and time for this study, the HMG team is foregoing many of the features of a more comprehensive process evaluation, such as random selection of survey respondents, surveys of non-participants, or detailed review of program tracking systems. These limitations have been discussed with the SDG&E project managers, and they have confirmed that the scope of this study is in conformance with their needs and expectations.

2.2 SDG&E New Construction Programs Overview

SDG&E's new construction programs include:

- Nonresidential
  - Savings By Design (SBD)
  - Sustainable Communities (SC, merged with SBD)
- Residential
  - Advanced Homes (including California Energy Star New Homes Program, Prescriptive Measures)
  - Third-party CHEERS Rating Program

Based on discussions with SDG&E, the study scope was limited to SBD, along with a component of Sustainable Communities, and Advanced Homes. CHEERS was removed from the study scope because its limited program intent and timeframe precludes it as a viable PY2009-2011 program offering.

[1] Quantec, LLC merged with the Cadmus Group in May 2008.

3. METHODOLOGY

This section discusses our approach in providing the requested services. The purpose of the evaluation is to provide a formative assessment of SDG&E's new construction programs based on staff and customer feedback.

3.1 Data Collection and Analysis (Nonresidential)

For the nonresidential new construction sector, the data collection effort consisted of two stages:

- Interviews of Savings By Design program staff to gain an understanding of program activities, issues, and goals
- Focus groups with SBD program participants to gain customer feedback

3.1.1 Staff Interviews

Key Savings By Design program staff (program managers, customer account representatives, and program engineers) were identified and recruited for an in-depth interview. Each interview lasted approximately 20 minutes and consisted of open-ended questions. The interviews guide is provided in the Appendix. The interview questions explored program staff's views on issues including:

- Customer acceptance of the whole building paradigm and the systems analysis alternative
- Role of design team incentives in encouraging participation and improving energy efficient design
- Role of owners incentives in encouraging more efficient buildings
- Perceived value of education and technical assistance
- Participation in broader goals of Sustainable Communities Program, including role of renewable energy (reasons for and against)
- Perceptions of program procedures (applications, energy analysis, incentive payments, verification, etc.)
- Consideration of customized program offerings for each product type
- Other ideas/suggestions for program improvement

The following individuals were interviewed for the study:

- Chip Fox - Manager SBD
- Lianna Rios - Supervisor SBD
- Bob Nacke - Senior Engineer SBD
- Roger Yamasaki - Senior Engineer SBD
- Chuck Poindexter -Senior Account Executive SBD

- Dan Schweizer - Account Executive SBD
- Marianne Sy - Account Executive SBD

3.1.2 Face to Face Focus Groups

As part of our process evaluation study, we gathered information from Savings By Design program participants through three focus group sessions. The purpose of the group discussion was to determine:

- The perceived value of energy efficient building design
- The building design process – key decision-makers and how the program can influence their choices
- The influence and role of SDG&E and Savings By Design in the nonresidential new construction market, in general, and in the participants' projects, in particular
- Opinions on the Savings By Design program process
- Program improvement suggestions

The recruitment intent was to gather active program participants who were knowledgeable about the program and could provide useful feedback. Thus, non-participants were not included in the study. Many of the focus group participants had been involved with SBD for many years over several projects, which allowed them to demonstrate a historical program perspective and a long working relationship with the utility.

The recruitment strategy for the focus group relied on SBD program representatives to enlist participants This was to take advantage of their established, working relationships with the invited participants, who were all busy professionals. We believe other recruitment approaches would not have been as successful. The focus group sessions were well attended, largely because of this recruitment approach. In addition, each participant was offered a $100 dollar honorarium for their attendance.

The focus groups were divided into separate sessions with architects, mechanical/electrical engineers, and owners/developers. The following tables provides the attendees for each session:

SBD Focus Group - Architects	Monday, September 10, 2007: 5:30 – 7:30 PM
Kathy Lord	HMC Architects
Alison Whitelaw	Platt+ Whitelaw Architects
Frank Ternasky	Delawie Wilkes Rodrigues Barker
Jim Gabriel	Hana Gabriel Wells
Scott Thomas	Zagrodnik Thomas Architects
Kevin Krumdeck	Carrier Johnson
Kevin Nivinskus	Studio E Arch
Sean Tracy	Pacific Cornerstone Architects
Jim Ferguson	Ferguson Pape Baldwin Architects
Joe Kelly	Sprotte Watson Architecture Planning
Beth Brummitt	Brummitt Energy Associates

Table 1: Architect Focus Group Attendees

SBD Focus Group – Developers & Owners	Tuesday, Sept. 10, 2007: 10:00 AM – 12:00 PM
Larry Young	Qualcomm
Evan Leslie	San Diego City Schools
Gerry White	UCSD; Facilities Design & Construction
John Heredia	Chula Vista Elementary School District
Bruce Rainey	Scripps Health
Harvey Rogoff	Harper Construction
Greg Hamann	Hamann Construction
Phoebe Hamann	Hamann Construction

Table 2: Developers and Owners Focus Group Attendees

SBD Focus Group - Engineers	Tuesday, September 11, 2007: 5:30 – 7:30 PM
Mark Bender	Bender Dean Engineering
Dale Franchak	ILA+Zammitt Engineering
Genko Ganev	McParlane
Al Jogoloff	Crown Construction
David Merrick	Merrick & Associates
Randy Minnier	MPE Consultants
Gene Walsh	Walsh Engineers
Frank Sharpour	SC Engineers
Chris Weixelmann	Randall Lamb
Ramona Bacula	Syska Hennessy Group

Table 3: Engineer Focus Group Attendees

The sessions were held at a professional market research facility, with a mid-sized conference room format. The location, in La Jolla Village, was conveniently centrally located, and free parking was provided. The facility provided refreshments and light sandwiches. Sessions were video recorded, and utility personnel were invited to observe from behind a one-way mirror. Chip Fox was the primary observer, and his feedback was solicited during the mid-point break, to assist in exploration of key program issues.

The focus groups were facilitated by Cynthia Austin. Douglas Mahone observed, took notes and occasionally pressed for clarification. A discussion guide was prepared in advance, and was used by the facilitator to ensure that all topics of interest were discussed (see Appendix for a copy of the guide). The conversations, however, were generally allowed to flow naturally between and among the participants. The facilitator intervened at key junctures to ask leading questions or to redirect the discussion to a new topic area.

The focus group guide is provided in the Appendix.

3.2 Task 5: Data Collection and Analysis (Residential)

For the residential sector, a similar format from the nonresidential data collection and analysis was laid out, with slight modifications. As agreed upon at the kick-off meeting, the study concentrated on the Advanced Homes programs for SDG&E The data collection effort consisted of two stages. In the first stage, Advanced Homes program staff were interviewed to gain an understanding of program activities, issues, and goals. In the second stage, focus groups or interviews were held with program participants.

3.2.1 Staff Interviews

In October 2007, Quantec staff conducted telephone interviews with the utility program implementers. Interviews included staff managing and overseeing the program, and

Account Executives providing direct contact with builders, developers, and other program participants. The interview guide is presented in the Appendix.

Overall, these interviews sought to gather utility staff insights about key process issues related to the program and to compile recommendations for potential program enhancements. Specific topics addressed in the interviews included:

- Respondents' roles and involvement with the program;
- Information on the demonstration/case study program component;
- Feedback on the prescriptive and performance program components;
- The role and effectiveness of program incentives;
- Perceived value of education and technical assistance;
- Participation in broader sustainability goals, including the role of renewable energy, and reasons for and against;
- Perceptions of program procedures: marketing; participation identification, recruitment, and selection; application process; quality assurance and field verification; and
- Possible program enhancements or improvements.

Six interviews were conducted with utility staff involved with the program. Two were program management staff. Three said their primary or secondary roles were as Account Executives, and the remaining person provided administrative support for the program.

3.2.2 Participants Focus Groups and Interviews

As part of our process evaluation study for the Advanced Home Program, we planned on holding two focus groups with participant builders, designed to elicit feedback on:

- The value of energy-efficient building design;
- The building design process—key decision makers and how to influence their choices;
- The influence and role of the utility and the Advanced Homes Program in the residential new construction market, in general and, in the participants' projects, in particular;
- Opinions on the Advanced Homes Program process; and
- Program improvement suggestions.

We had planned to convene two focus groups in San Diego in one evening. A contract was established with a facility to recruit participants and provide the facility and services. From program data provided by SDG&E, we selected a semi-random sample of more than 60 participants in the San Diego area. The facility went through the entire initial list with limited recruitment success. We then supplied additional names, ultimately providing the entire list of program participants to the facilities. The facility was able to recruit eight participants for a single group, scheduled to occur from 4:00 to 6:00 pm.

Builders were offered a $100 stipend to attend. The group was held April 16. Four of the eight people cancelled at the last minute, so only four attended.

Attendees were from the following companies: Cameo Development Company, Cornerstone Communities Corporation, Shea Homes, and Richmond American Homes of California. Characteristics of attendees and their projects are summarized in Table 4. The group provided a fairly complete cross-section of builder types.

Attendee ID	Job Title	Market Segments	Location	Type(s) of AHP Projects
Builder A	Purchasing Analyst	Single-family	San Diego and Orange County	Prescriptive measures, single-family
Builder B	Purchasing Director	Production builder, single-family, multifamily, communities	California, other states	Prescriptive measures, ENERGY STAR, single-family, multifamily,
Builder C	VP of Purchasing	Single-family communities, townhomes	San Diego area	Prescriptive measures, ENERGY STAR, single-family, townhomes
Builder D	President	Small volume, single-family	San Diego area	Single-family, ENERGY STAR

Table 4: Builder Attendees Characteristics

We moderated the focus group using an interview guide submitted to SDG&E for review and comment. The guide was structured around the following discussion topics:

- **Introductions and initial observations**: Introductions by the evaluation team and each participant, including: market segments targeted and types of AHP projects conducted; participant observations about the program and energy efficiency, sustainability, and green building and value in market.
- Program awareness and decision to participate.
- Perceptions about program procedures.
- Perceived value of program services.
- Program success and effectiveness: Demonstration projects, prescriptive measures, ENERGY STAR, and education components.
- Program effects: Outside of utility area, through partnering approaches, and in different market segments.
- How program has changed building practices.
- Suggestions for improving the AHP

The complete focus group guide is presented in Appendix.

4. RESULTS

4.1 SBD Staff Interviews

4.1.1 Whole Building Approach vs. Systems Analysis

The majority of projects use the whole building approach rather than the systems analysis. Staff indicate the major influence in projects choosing the whole building approach is early project involvement in the program and size of project. Likewise, projects in later design stages or projects that are only tenant improvements tend to use systems analysis. The whole building approach is considered superior over system analysis because of greater energy and cost savings over the life of the building

4.1.2 Program Incentives

Almost all program projects use both the design team and owner incentives. Only a small portion (<20%) apply for just the owner incentives.

The design team incentive underthe whole building approach is still considered a useful program feature. It makes up for additional modeling costs for larger buildings and encourages better communication between the design team and the owner. However, some project leads hand the design incentive directly to the owner/develop,r instead of dividing it up among the design team members, as a client appreciation gesture.

Staff members would like to see the removal of the incentive cap with the 2008 standards and lowering the threshold cap. It would bring in more projects by taking away the program limitations.

4.1.3 Program Procedures

Staff members felt program application procedures could be more streamlined, allowing for electronic signatures or online applications, and allow for multiple projects per single owner's letter of interest. The basis for these recommendations is to minimize customers' administrative burden, especially as building timeframes have shortened from prior years.

Because design teams do not always utilize their engineering consultants early enough on the process, energy analysis completed by Sempra staff should still be offered as a service to customers. However, the energy analysis procedure can be streamlined by creating one uniform template with plan check results, return on investments, and energy savings for each energy conservation measure.

The verification process could only be improved by improving the quality of inspections. Greater training for internal inspectors, and creation of quality assurance protocols and labeling documentations are recommended.

According to program staff, commissioning needs to be highlighted as a useful part of the building process. Staff believe commissioning helps ensure the long term program goals. Suggestions include granting commissioning incentives and creating commissioning guidelines to customers.

4.1.4 Sustainability goals as a Program feature

While the concept of sustainability has a growing presence in the building community, program staff differed in whether a separate sustainability program focus is needed. Participation in both Savings By Design and Sustainable Communities occurs for only a minority of participants (30%) who are looking at renewable options. One recommendation to encourage participation in both programs is to better coordinate paperwork for customers.

4.2 SBD Focus Groups with Program Participants

The following section presents our observations and analysis of the overall focus group findings (combining all three). .

4.2.1 SBD General Observations and Themes

Changes Over Time

Similar sets of focus groups have been conducted by Douglas Mahone and others at HMG, beginning as early as 1990, in relation to California's nonresidential new construction programs. One of the most striking aspects of these latest focus groups was the change in attitudes, regardless of professional capacity, which have occurred over that time. In the preliminary focus groups, there was a great deal of concern about the difficulty and cost of just meeting the (then relatively new) Title 24 requirements. There was confusion about why the utility would be encouraging its customers to use less of its product. There was little conviction that owners or clients cared about energy efficiency. In comparison, none of these issues was voiced in the current focus groups as the major problem, although echoes of these concerns could be noticed. Rather, there was widespread acknowledgement that energy efficiency was possible. Even more important and significant, owners and designers had embraced energy efficiency in principle, and usually in practice. There was greater awareness of sustainability, and even a strong undercurrent of pride that California buildings are so advanced in energy efficiency. This is a tidal shift in opinion from focus groups in the 1990s.

SBD Is an Influential Part of the Landscape

Another strong observation is that SBD is, at least amongst this group of practitioners, a firmly established player in the new construction landscape. The incentive dollars for the owners are seen as very influential in pushing building designs beyond Title 24, even though the dollars are not that significant in the overall construction budget. The credibility lent by the utility makes it easier to "sell" energy efficiency as a reasonable building practice. The long-term relationships that the utility has established within the building community are valuable, and SBD is credited with helping to advance both the Title 24 energy codes and buildings designed to exceed the code. SBD program reps are known and valued, especially the most experienced. It was evident those personal relationships need to be continued and valued within Sempra. All three groups felt that, if SBD were to end, construction practice in general would quickly revert to "just meet" Title 24 and not to go beyond. Also, SBD was praised for being relatively simple and easy to understand, especially in contrast to other government and utility program

offerings. As a side note, many customers continue to be confused by the similarity between SDG&E and the former SDREO (now the CCSE)

Beating Title 24 Will Become More Difficult

In the two focus groups for architects and building developers/owners, there was a "conventional wisdom" perspective that it will become increasingly impossible to design to efficiency levels significantly better than code, as the energy code continually becomes more stringent. When pressed, however, many acknowledged that they could design buildings to be significantly more energy efficient if owners could be persuaded to let them design less conventional systems, or if project financing could be less constraining (e.g. for school districts).

However, engineers held a different view. They readily admitted there were more opportunities for greater efficiency in building design. However, they felt their role in the design process was limited, and so they could not give input at the appropriate design process decision-making period.

Sustainability is Important; LEED Not So Much

Despite nearly universal awareness of LEED and sustainability issues among the focus group participants, there was significant skepticism that the LEED rating was worth the time and expense. All three groups cited the difficulty in documenting a project for LEED certification, stating that the process was time-consuming and expensive. They also noted various LEED requirements that were difficult or inappropriate in San Diego. Many cited projects which sought sustainability in the design, but did not find it worthwhile to through the LEED process. The architects were the most supportive of LEED, while most of the owners and engineers were wary of a LEED certification's value. The participants also observed that LEED is only one of several ways of defining sustainability and energy efficiency (e.g. CHPS, Title 24), although it is probably the most rigorous. There is confusion in the marketplace about the various rating requirements, which are not all compatible with each other.

Owners Are the Most Influential Drivers

All three groups pointed to the owners as the most influential drivers in SBD participation and in the decisions to design more energy efficient buildings. Architects were the second most influential, especially for projects with inexperienced owners, and as lead generators for SBD reps. But owners who were doing multiple projects over time would often declare SBD participation as part of the project goals from the outset, and would direct their design teams to work with the utility. The designers reported that owners did not always understand the technical aspects of energy efficiency, but they did know to ask for a percentage improvement beyond Title 24, as SBD requires. Engineers seldom are afforded the opportunity to participate in projects early enough to be the SBD initiators, although their recommendations and calculations often provide the necessary documentation. We note that these observations are unchanged since the focus groups we conducted in early days of SBD.

Recognition is an Important Motivator

All three groups said that the utility recognition given to SBD projects was at least as important as the incentive dollars. The value of the recognition varied. For designers, it helps them to win new projects. For builders, it helps them to sell their buildings. For owners, it helps enhance their company's public relations imag and to sell their projectse. Plus, the utility endorsement helps justify the efficiency investment. All of the groups spontaneously cited the value that SBD recognition provided.

Ambivalence Toward Design Team Incentives

Since the inception of SBD, there has been a degree of ambivalence within the design community about design team incentives. Most designers, and most thoughtful owners, acknowledge that the incentives are important in helping to motivate designers to "go the extra mile" for energy efficiency. They also acknowledge that incorporating more efficient building design does require extra effort and persistence. At the same time, designers do not feel that their incentives are substantial, and the incentive payments usually are paid late in the process that they do not significantly affect their design budgets. The design team incentives are viewed as more of a "goodie" after the project is mostly done. Some designers are still uncomfortable taking money from the utility to influence how they serve their clients, and few even hand over the incentive dollars directly to their clients. Others, however, express resentment toward clients who simply take the incentive check for themselves. These mixed sentiments have not changed since our first focus groups on SBD, and they do not suggest to us a need to significantly alter the design team incentive structure or amounts; indeed, we think it would be detrimental to remove them. The one request that should be considered, however, is to provide a portion of the design team incentives earlier in the process for all projects. Currently, this only happens when projects reach the 20% beyond Title 24 threshold and have LEED certification, under the Sustainable Communities option.

Program Processes Still Need Streamlining

The utility's SBD processes were acknowledged to have improved over time, yet there were multiple observations indicating that they still need to be further streamlined. A key complaint, which has not really changed over time, was the time required to get review and approval for a SBD application. Some projects did not participate because the approvals could not be obtained in time to meet the project schedule, with many fast track projects not even attempting participation for this reason alone. This is significant because many participants indicated that project timelines have been reduced to half the time available a few a years ago.

Some felt the delay in application approval process was due to the limited staffing and resources of the SBD engineering review staff. The engineering staff is well respected, and their experience/input is seen as valuable on projects, but it is apparently not available enough to always meet demand. Others pointed to some cumbersome aspects of the application process, such as the requirement to have multiple wet signatures on the application form (which can require a lot of time moving the form around between offices). Despite its existence in the SBD Participant Handbook, some participants asked if there could be a program process flowchart that would enable them to better understand where they were in the process. They also expect the SBD program reps to know where

projects are in the process and to contact them in a timely manner when actions need to be taken.

Utility Should Probably Run SBD

Participants were asked a final question about whether SBD should continue to be run by the utility, or whether it could be run as effectively by some other entity. Few of the participants had considered this possibility, and they seemed unsure how to respond. A few gave a quick answer to the effect that it didn't matter who ran the program as long as they delivered the incentive checks. Upon further reflection and discussion, however, the prevailing opinion seemed to be that the utility was the logical entity to run SBD, because it is well known and respected, and can lend more credibility to the program than a lesser known entity could. We had expected this answer, and so were more surprised by the initial response, especially since these groups of participants had long experience with SBD and the utility, and were selected by program staff. We take this as an indication that SBD needs to keep its offerings and processes effective and valuable to its customers, and that the customers must not be taken for granted.

4.3 Advanced Homes Staff Interviews

4.3.1 Staff Roles and Program Involvement

Program managers indicated their roles included: program design, developing processes and procedures, implementation, analysis, and addressing issues that came up in the field.

Account Executives served as the primary point of contact with program participants. Because of geography, some Account Executives worked with builders who constructed homes in both SDG&E's and Southern California Gas's service areas. For this report, findings from the Account Executives are reported for those working with builders operating primarily in the area served by SDG&E.

The most common roles Account Executives cited playing were: educating builders about energy efficiency, informing them about the program, and assisting them in enrolling. One Account Executive noted she prepared the application for participants because it saved time by preventing applicants' mistakes. A supervisor indicated she was responsible for assigning both single-family and multifamily home builders to Account Executives. Specific functions Account Executives identified included:

- Promoting the program;
- Describing potential incentives;
- Making presentations to builders on ways they could improve energy efficiency, including the specific methods under the program;
- Reviewing Title 24 with participants and making them aware of any changes;
- Facilitating information-gathering from participating builders;
- Visiting job sites to meet with the job superintendent and review project aspects, such as the Quality Insulation Installation (QII);

- Resolving any issues coming up in projects and making sure projects stay on schedule; and
- Delivering incentive checks.

Program staff were asked what types of housing projects they typically worked with. For the overall program, the manager described project inventory as a good mixture of single-family attached and detached homes, low- and medium-rise multifamily housing, some affordable housing, and some high-rise projects (four stories or more).

It appeared Account Executives tended to focus on certain types of housing more than others. One said the majority of his projects were low-rise multifamily, with a few single-family and high-rise multifamily. Another concentrated on low- to medium-rise multifamily (60%), with the remainder single-family (40%). Another had done almost exclusively single-family projects in the past, but his projects now were about evenly split between single- and low- to mid-rise multifamily. One commented high-rise buildings had been targeted more in the past, but, because they frequently came up short of the required 15% improvement of Title 24 (due to steel framing and central air-conditioning systems), there were fewer of them now.

4.3.2 Demonstration/Case Study Projects

The program's demonstration/case studies component works with design teams, holds eco charrettes, and provides design recommendations and analyses for these projects. Demonstrations are open to all residential building types (e.g., mixed use high-rise with market-rate condos to gut rehabs of single-family housing). In the SDG&E territory, the program has worked with developers, architects, contractors, and builders. Projects have included a large master-planned sustainable community development, and they are looking at a single-family home destroyed in recent wildfires. The intent is to create a program option that "fits the project and gets away from the project having to fit the program."

The demonstration projects are more advanced than projects participating through the other program venues. Account Executives are usually not involved in the demonstration projects. Demonstration projects expand the program approach by allowing integrated and innovative projects. Demonstrations often include green building projects participating in other programs, such as LEED or GreenPoint Rated. They provide a venue or platform for exploring future projects and the potential for each product type. For example, high-rise housing is not the same as single-family housing. The utility is seeking a good high-rise, mixed-use project to explore future directions and elements that might be impacted. They are also expanding to cover joint utility projects that could include municipalities and municipal utilities, metropolitan water agencies, and so on.

These projects will be leveraged to disseminate information they generate. They will be marketed and showcased in the media and will have case studies developed for them.

The only disadvantage interviewees identified for demonstration projects was that industry was still not used to seeing a utility so involved and engaged in providing services and ideas at a project's early stage. To improve success of this program aspect, respondents indicated more marketing and outreach should help overcome the industry's initial response to the utility's role.

4.3.3 Prescriptive Program Component

About 75 prescriptive projects have been conducted in the SDG&E area. Each Account Executive typically handled 12 to 30 of these . Account Executives described their project roles as:

- Presenting the program to customers;
- Working with trade allies and site superintendents;
- Gathering needed documentation, including the program agreements;
- Overseeing and monitoring the inspection process; and
- Delivering the incentive check.

Program staff listed several advantages to this program component:

- Increased use of high-efficiency HVAC and water heating equipment.
- Promotion of Title 24.
- Lower costs to builders than the performance approach as rating costs were covered by the utility and prescriptive measures could be less costly.
- Energy savings in cases where builders had difficulty using the performance approach: “If a customer can't qualify on a performance basis, the prescriptive program still gives us the opportunity to sign them up for a particular measure. They may only reach 10% savings beyond Title 24, but we can still get some savings.”
- An opportunity to transform the market: “[The prescriptive approach] gives an opportunity for builder to transform the market by making contractors raise the bar. Quality becomes standard—for HVAC contractors in particular.”

On balance, staff comments suggested the disadvantages of the prescriptive approach outweighed its advantages. Prescriptive component disadvantages cited by the utility staff included:

- Less opportunity for utility staff to influence projects, which raised concerns about freeriders.
- Difficulty selling the approach to multifamily projects (e.g., one Account Executive stated, “It is harder to convince high-rise project builders or other multifamily projects to participate when measures like QII cost more and [the builder] may be getting only $50 to $100 per unit.”)
- Energy savings are relatively small for the utility as a whole.

- Utility program staff were asked whether the prescriptive approach worked better for certain housing types. Program managers noted a mix of single- and multifamily projects had participated, but it was more difficult for multifamily projects because of duct tests and QII requirements. They also noted tankless water heaters were more difficult to implement in multifamily projects because of venting needs. One Account Executive believed this approach worked well with single-family housing and some multifamily buildings, but it was not well suited to housing with six stories

or more. This was largely because framing costs of meeting the requirements rose considerably. Utility staff were asked about how the prescriptive approach could be made more effective. A project manager suggested it would be useful to go back to the energy-efficiency measure potential study to ensure market segments identified there were being covered in the program. The major suggestion was to increase incentives, particularly in connection with the QII measure. One Account Executive stated: "We're really pushing QII, for example. This concept is relatively new to the industry. Some insulation contractors simply do a better job with less leakage. This takes more time and skill, and they need to coordinate with the drywall person. QII slows the process down. We need to promote it more and give more incentives."

4.3.4 Financial Incentives

Financial incentives differed between the prescriptive and performance program components, with prescriptive incentives based on a product installed, and performance incentives based on energy savings. Program managers indicated prescriptive incentives were designed to cover about 60% of the incremental measure cost.

Overall, Account Executives felt the incentives had been effective in promoting the program and recruiting participants. They all indicated participation could be increased with larger incentives, but some noted the tension between the utility's need for program cost-effectiveness and the builders' desires for larger incentives. One noted costs and savings of individual measures should be analyzed to determine the appropriate incentive level, and another restated the concern about costs of the thermal bypass checklist requirements.

4.3.5 Performance Program Component

The performance program component has been based on ENERGY STAR, and utility staff were asked how effectively the program supported ENERGY STAR. Program managers noted problems occurred using ENERGY STAR because the utility's program was implemented before ENERGY STAR program requirements were fully defined in California; in particular, there was lack of clarity from EPA on the thermal bypass checklist, and many iterations were required between the California Energy Commission (CEC) and the EPA to resolve these issues. This uncertainty lowered initial participation in this component of the Advanced Home program, but managers noted the number of ENERGY STAR homes has grown considerably, as has use of the HERS rating system. Account Executives echoed the same concerns about difficulties caused by the thermal bypass checklist requirement of ENERGY STAR. Respondents were asked what ways the program had been most effective. Overall, program managers' said the program had been effective in promoting and pushing industry efficiency efforts. They highlighted its effectiveness in educating builders and energy analysts as well as in providing information on actual incremental costs. Account Executives had reservations about the program's effectiveness, mostly because of concerns regarding the thermal bypass checklist requirements. Finally, we asked utility staff how the program's support of ENERGY STAR could be increased. The program managers emphasized the need for and their plans to offer more training. One area where they felt more training could be especially useful was for HERS raters. Account Executives mentioned larger incentives would be helpful, along with providing more technical assistance. The most common

suggestion, though, was the thermal bypass checklist requirement should be modified or possibly eliminated. One person recommended working with EPA to address this issue.
Education and Technical Assistance

Program managers described education and training as being provided in two ways: through Account Executives working with clients, and through formal training and workshops at the Energy Resource Center on Title 24 and efficient technologies.

Account Executives described the training similarly, but commented that training activities recently had tapered off. For example, HVAC design classes and duct systems training had been offered, and the building community had liked these classes, but they were no longer available. One Account Executive mentioned an annual class schedule had been published but was no longer. He also noted utility internal staff training had declined; individual meetings were now scheduled only as needed.

Managers thought training was effective and adequate for HVAC, water heating, and envelope measures as provided to engineers and consultants. They had concerns, however, about a lack of training for architects, landscapers, and other industry members. Program managers felt more could be done to integrate the design community into the program and address design issues. They felt training was effective at reaching builders, but improvements were needed in training subcontractors.

Account Executives described the training as proactive, but some felt it was inadequate. One commented, “We need to coordinate with industry, promote educational opportunities, solicit industry and do more ‘to get them into the chair’ at training classes.”

Program managers said past program technical assistance had focused on ways to reach 15% performance-based efficiency improvements and things such as meeting Title 24 using efficient water heating systems, etc., to keep incremental costs low. This has shifted to looking at more advanced technologies, such as microturbines in the demonstration home projects.

Account Executives had mixed views about technical and design assistance the utility was able to provide. Their experts provided assistance on subjects such as the best way to achieve the required 15% energy savings. Some felt the assistance quality was very good, but others were concerned how long it took. The biggest concern voiced by Account Executives was the design assistance team was in Los Angeles, and assistance had to be provided by phone or e-mail.

Program managers felt technical assistance could be improved the same way as training (i.e., by reaching out to industry partners beyond the builders). Account Executives felt the best way to improve technical and design assistance was to increase the number of staff who could provide these services, and have staff located in San Diego who could work with builders in person. One respondent thought the number of Account Executives and technical assistants should be increased to allow them to spend more time assisting participants.

4.3.6 Linkage to Broader Sustainability and Renewables Goals

We asked utility staff a series of questions related to program participants' awareness and understanding of sustainability, energy efficiency, and renewable energy, and the program's influence in this area. Program managers stated that though most had heard of sustainability and green building, few builders really understood the concepts. They observed those knowledgeable about sustainability tended to be smaller builders; within production builder firms, awareness of sustainability and green building was usually quite limited unless someone within the company was a strong proponent. Builders also had a tendency to see energy efficiency as something by itself and separate from sustainability, and few had a comprehensive understanding of issues such as low emission building products. The industry also appeared to not distinguish energy efficiency from renewables, such as photovoltaics (PVs). Though first costs were still viewed as an impediment to use of renewables, managers noted PVs and solar water heating were becoming more common, largely because of state incentives. Program managers thought more training and education were needed to educate the industry about sustainability, and industries, such as solar energy businesses, needed to be more engaged. Overall, managers felt coordination and cooperation with other organizations—the American Institute of Architects (AIA), the U.S. Green Building Council (USGBC), other utilities, etc.—had been quite effective.

Account Executives stated levels of understanding sustainability and green building varied among the building community, with most builders having little real understanding. One exception noted was affordable housing builders because of requirements they must meet to obtain funding. One commented that awareness was gradually growing among developers, with more asking "What's this green thing?" The perception was builders did not generally see the link between energy efficiency and sustainability. Account Executives noted there was increasing interest in the use of renewables, and builders saw a trend developing to push for more use of solar, but cost remained an issue, and many builders did not see how they could incorporate solar and be profitable. As with energy efficiency, one respondent noted use of solar technologies was getting more attention in the affordable housing sector. The Account Executives pointed out other SDG&E activities and programs encouraging the renewables market. They felt the program had not done much to increase understanding of sustainability among builders, but recent, modest efforts would have an effect. These efforts included breakfasts with builders, meetings with the building industry association, and the solar home partnership. Account Executives indicated they did not do much involving direct coordination with sustainability and green building organizations, but SDG&E's sustainability staff person did become involved with such groups.

4.3.7 Program Procedures and Processes

Utility interviewees were asked for their feedback on ways that program procedures and processes might be improved. Program managers noted they had been in the process of changing the program's direction and were increasingly emphasizing the performance-based program component. They felt there had been a lack of outreach on residential new construction; so they saw a need to increase this effort. In particular, they felt it would be important to focus marketing/outreach materials to target specific groups such as architects and HVAC contractors. To have more influence, they felt recruitment should

involve getting into builders' and architects' offices earlier, and this would entail increased education of Account Executives to involve them more in these early project stages. One manager commented the program should expand to attract more builders who had not participated yet and cover a wider geographic area. Managers also felt the application process should be simplified and moved to an electronic or Web-based application. One noted: "…this will take away some field rep involvement, but field reps could do follow-up with the applicants. I'd like to reduce the footprint of the program by reducing paperwork." For ways training and education could be improved, the managers suggested there should be more training beyond HVAC systems, and keynote speakers, including contractors with special expertise, should be brought in to assist with training. They felt HERS raters could play a larger role in both training and quality assurance (QA), but they expressed a few concerns about the proficiency of some HERS raters.

Account Executives all agreed program marketing (especially marketing materials) needed improvement. One said materials should look more professional and overall quality should improve. Another specifically suggested: "We need to have some materials ready that can demonstrate the calculations for increased efficiency."

To enhance recruitment, Account Executives provided a few suggestions. One reiterated the need for materials that could calculate and demonstrate savings from increased energy efficiency. One benefit of such materials would be: "…we [would] be able to help our customers sell their homes and take advantage of energy efficiency features." A broader comment was that communications and linkages within the utility needed improvement. This was described as "a need to be linked more to the program managers in the planning department within the utility to be part of the residential program team" and inadequate communication to the sales team (Account Executives), which prevented them from "marketing the advantages of energy efficiency" effectively.

Account Executives' views were somewhat mixed on the need to improve the application process. One noted the application process for the prescriptive component was quite easy, but the process for the performance component could be cumbersome, though he understood why all the information was needed. He thought the plan to move to an electronic application was a good one. Another stated: "We need to simplify this process and reduce the number of documents requested. The process is frustrating to customers; it's expensive to order additional [building] plans. The auditors say we need all these documents but it has never been explained why."

Regarding education and training activities, Account Executives all thought improvements could be made, the most basic being the reestablishment of previous training and adding additional components. One suggestion was to hold breakfast meetings; another was to expand involvement with the local Building Industry Association. Another Account Executive felt the utility needed to do a better job letting builders know when the program was going to change.

These same staff also thought the QA process could be improved, including expanding the number of staff available to conduct inspections. One said inspectors needed to inform the project superintendent directly about recommended changes. Another said field verification needed to be more timely and flexible as builders were on tight timelines. This Account Executive also said inspections should not just be pass/fail, and the process should be more collaborative. One thought Account Executives should get more involved in providing inspections.

4.3.8 Other Observations and Recommended Program Enhancements

Observations

We asked program managers and Account Executives for any additional overall observations as well as recommendations for enhancing the program. One respondent saw the utility as playing an important role in helping the building industry make a change, and that, ultimately, the regulatory bodies would be involved; so it was crucial to work with regulators to promote the program and make it succeed.

Several respondents emphasized the importance of working closely and communicating clearly with builders. Specific comments included:

- The program has done pretty well at providing resources; targeted market segments and community-wide development now need to be addressed.
- The measure approach was very effective at helping builders prepare for Title 24 changes; the performance (ENERGY STAR) approach may not be as effective at achieving that outcome.
- The program needs to become involved in projects earlier in the design process; so it can have an influence before major decisions are made.
- With the building market slow, builders are looking for more and better marketing materials, which the program could provide.
- Recognition of participating builders (e.g., by providing a plaque), would help recruit builders and promote the program.
- The program appears to favor larger builders as they tend to be able to better afford added costs and program outreach through the major builder associations, which may exclude smaller builders.

Recommendations

Interviewees provided a range of program recommendations. They are summarized below by category.

Demonstration Projects

For the program's demonstration component, program managers recommended expanding the scale and making the program design flexible enough to meet the projects' needs instead of restricting projects too much to meet program needs.

We note many of the issues identified for other program venues (e.g., the need for early utility involvement in the design process, flexibility, etc.) appeared to be addressed by the design of the program's demonstration component. We believe it will be important to ensure lessons learned from the demonstration projects are effectively leveraged and communicated to enhance other program components.

Marketing and Early Involvement

Several respondents noted the program could not have much effect on projects if participants enrolled after project designs and plans were completed. Consequently, several recommended the program find ways to become involved in new projects earlier in the cycle. One way to further this goal would be to increase contacts with designers and architects.

Given the common perception that program marketing materials were inadequate, several interviewees recommended improving these materials. In general, respondents thought materials could be more professional looking and well thought out.

Incentives

Numerous staff members recommended changes to incentives to increase participation and program effectiveness, primarily:

- Provide incentives to fund energy analysts (rather than the utility providing free energy analysis internally). This would lead to better customer service and relationships with the energy analyst community.
- Provide design incentives for architects and engineers (this was being developed while our interviews were being conducted).
- Increase incentive amounts.
- Provide new or bring back prior incentives; examples include solar technologies and tankless water heaters.

Services

Two related recommendations were made about services the program should provide. One was in the area of technical and design assistance: the program should offer both more design and technical assistance. We note, however, some respondents were concerned this might raise objections among consultants who were already providing such services to builders.

The second service recommended was providing tools to allow builders to quickly estimate and demonstrate energy and cost savings as well as added construction costs, from building to program requirements. Though a concern was raised about possible liability issues if estimates were not completely accurate, such tools would meet an important program need; one Account Executive said: “This is one of the biggest things we’re missing.”

Program Design

Several program design changes were recommended, ranging from fundamental design and program scopes to targeted changes.

At least two interviewees commented the program’s greenhouse gas benefits should be analyzed and highlighted. One commented: “Let’s not debate it; let’s do it.” Along the same lines, one noted sustainability and “green” program should be emphasized.

Other recommendations addressed ways to make the program more flexible and efficient. One person said red tape should be reduced. Two people suggested builders should be given the flexibility of qualifying some of their homes in a project rather than requiring all their homes meet the program requirements. Another recommended offering measures-based and performance-based programs simultaneously; so builders could choose their preferred approach.

Internal Changes

A few recommendations were made about ways to improve the program through internal changes. Some Account Executives thought they should be responsible for fewer builders and projects so they could devote more attention to each.

Following on several comments discussed earlier, there were recommendations to improve training and knowledge of Account Executives, so they could be better prepared to inform builders. They also thought it would be effective to educate the builders' sales force, so they could communicate the advantages of green buildings to clients.

Finally, a few Account Managers noted it would be beneficial to improve some aspects of internal communications (e.g., it would be helpful to know more about program managers' activities and likely program directions). One Account Manager stated: "I think the program managers asking Account Executives for our input [through these interviews] is very valuable."

4.3.9 Green Buildings, Program Awareness, and Decision to Participate

The four San Diego builders' observations about green buildings and the program were largely colored by the market downturn. All felt there was value to green and energy-efficient homes in terms of customer appeal, but most expressed concerns about adding any costs to their homes through incorporating green and energy-efficiency features. One builder noted his company was offering green features, but they were only presented as options shown in their home gallery. Under better market conditions, this builder suggested some of these options might be standard offerings in their products. Builder D noted: "We are an ENERGY STAR certified builder. The push right now is to be a green builder. If I was building more, I would push toward that marketing scheme." Another said buyers were definitely more aware of energy-efficiency and green buildings, but he was unsure if they were really willing to pay more. Other builders agreed with this observation.

Though all four builders were aware of the program, their knowledge was limited. The link between the program's benefits and their decision to participate was summarized by Builder B who observed: "We recognize it [energy efficiency and green building] is an important feature and marketing tool. At this point, though, we don't want to spend too much money to comply with just any program out there." Along with other participants, this builder suggested he valued the benefits, but a program had to meet certain criteria for this company to be willing to incur the added costs to participate. The criteria became clear as the group discussion continued.

4.3.10 Program Procedures

Recruitment, Marketing, and Marketing Materials

The San Diego builders typically heard about the program through their account representative, who essentially recruited them to participate. Several had been involved in various utility programs over the years, and the AHP was perceived as the next generation of programs from the past. The lack of distinction and clarity about how the AHP differed from previous programs and non-utility programs was a theme that emerged throughout the discussion. One builder commented: "It's very important that, with the programs, there are just too many. SDG&E has a lot of pull; if they could get a consensus between all the different programs just to go in one direction, that would help the industry more than anything. Right now, it's very hazy; you have to decide which program you want to comply with." Most builders were unclear what AHP was relative to ENERGY STAR; Builder C said simply: "Advanced Homes means nothing to me." Another commented: "With ENERGY STAR going away, this was our replacement."

Feedback on their utility account representatives' responsiveness was mixed. Builder C said: "Our account rep would come in and talk, and not give guidance on what to actually do with these programs. Since our rep left over a year ago, no one has come to talk to us yet. We are building more than any other builder in the county; you would think they'd want to tap into that." Builder B, however, said: "Our rep has been great. We rely on her for knowledge." As noted later, this builder did note there appeared to be a problem with reps not always having the latest information on the program.

The San Diego area builders had few comments about program marketing or marketing materials. Most could not recall seeing any marketing materials. The only marketing activity identified was related to a seminar put on by the California Building Industry Association (CBIA) on energy efficiency and green buildings, and it was unclear whether this was connected with the utility program.

Program Application Process and Energy Analyses

When asked about the process of filling out the applications, Builder B said account representatives made the process easy: "We just sign our names for the Advanced Home Program. It's so easy." Two of other builders agreed. Builder C, however, expressed difficulties with several program procedures that limited their participation recently, so the application process had not been tested yet.

The builders could not recall the utility providing any energy analyses for their projects.

Incentive Process and Verification

Builders said there were no problems with the incentive process itself. The only concern was about the verification inspection process required to receive incentives. Builder B stated: "[The inspections] seem to be going smoothly, but it's too early to comment on. We haven't been able to pass [ENERGY STAR] inspections three times now, so we are losing money [on that project]." Referring to the inspection process, Builder D brought up another frequent comment participants made about types of material from SDG&E that would be most helpful: "Is there a defined published thing that says, for this type of

home, this size, you have to do this, this and this, to meet inspection?" None of the other builders commented on the inspection process.

4.3.11 Program Services

Builders were asked about their perceptions of the services provided by the program in areas of education, design/technical assistance, and financial support. Builders could not recall any recent education provided by the utility; one commented she had attended a seminar at one point, but the information provided was vague. Builder D noted: "With things changing so rapidly, we have to stay on top of education. Since our account rep is no longer with us, we haven't been involved. Today I got a phone call from [our new rep] hill to check up on previous accounts."

These builders said they had received little technical or design assistance from the utility. One noted he did work with the utility's program consultants, but he said they were not providing technical or design assistance. Builder D described the process as: "We put everything together, then they (SDG&E] come back to us and tell us what we need to change and then we cost it out and see if it's worth it." Another builder agreed with this description of the process.

We asked whether the program's financial support helped builders try out costlier, green/energy-efficient technologies. Builders acknowledged it provided the opportunity to do so, but there were two concerns. One was the pressure to keep costs down, especially in the declining housing market. The other was they would like the program to provide more guidance about costs and benefits of various design choices, so they could make informed choices. This view emerged several times throughout the session, including when we asked for recommendations.

4.3.12 Program Effectiveness and Effects

To get builders' views on the program's effectiveness and effects, we asked about four program components:

- Demonstration projects: emerging technologies and low-impact construction practices.
- Support for the ENERGY STAR homes label.
- Prescriptive measures: maximum cooling capacity, verified duct systems, Quality Insulation Installation, and high-efficiency water heaters.
- Industry education on Title 24 changes and technologies.

We also inquired about the program's relationship to other programs, changes in their building practices, and different housing types.

Demonstration Projects

When we asked whether any of the builders had done demonstration projects under the program, most had not heard of this option. Builder D said he had participated, but the project had involved only special glazing; "All had to use low E. Some had [a special]

coating though that we had to use; that was the only kind of demonstration we did though."

ENERGY STAR

When the builders were asked about the ENERGY STAR component, responses indicated there was considerable uncertainty about its relationship to the AHP. Builder B stated: "ENERGY STAR and Advanced Homes are completely different things." Builder B indicated there were some tough spots when the ENERGY STAR program was being introduced: "In the beginning the reps weren't getting the information, so that was confusing."

There was, however, awareness of ENERGY STAR. Several builders noted a number of ENERGY STAR products existed, and there was good recognition of the ENERGY STAR label. Builder C said: "ENERGY STAR has recognition with the program, but I don't even know about the other [program components mentioned] and I'm in the business. If they attached ENERGY STAR to other things, then that would help make it common place." The builders liked the flexibility provided by ENERGY STAR that allowed them to make tradeoffs to comply. Builder D commented: "It's all tied into that name [ENERGY STAR]. It's marketing. The program will not work if the money that could be spent on it is spent trying to market all the new programs."

Builder C was very supportive of the idea of emphasizing ENERGY STAR: "Call everything ENERGY STAR. Call it ENERGY STAR water heaters, call it ENERGY STAR windows." But she noted that overall, it had not been a selling point so far, and: "In the public's mind, if you don't put a flyer out to the public letting them know what ENERGY STAR does, it's useless."

Prescriptive Measures

When we asked about the effectiveness of the prescriptive program component, one builder stated the duct tightness requirement had gone smoothly, and there was an advantage in that: "For the trades we work with, it's because [with better sealing] they don't have issues for good customer service." The other builders provided no additional comments on the prescriptive requirements.

Education on Title 24 Changes and Technologies

Builders indicated the program had not provided any significant education or training about Title 24 changes or technologies. Generally, they perceived the program as just setting requirements they had to meet.

Other Effects

Builder B said his firm participated in programs promoted by organizations in addition to SDG&E: "We take part in water conservation programs. We take advantage of state programs when we can use them (such as solar and water heaters). Chula Vista manages one [city] program we use."

As comments throughout the session suggested, builders who built multifamily rental properties found it harder to participate in the program because: "Renters don't care if it's

green, they want their stuff to work and want it cheap." However, concerns existed about how difficult it was to meet program requirements in certain climate zones where achieving Title 24 was more challenging.

4.3.13 Suggestions for Improving Program

Overall, San Diego builders were supportive of the program and recognized the potential marketing benefits. However, as Builder A said: "It really boils down to the cost. If we can use it as a marketing tool at a wash [in cost], we will, but we can't pay extra." All builders said they would participate in the program if it was cost neutral or cost just a small amount more.

The suggestion participants made most frequently for how to improve the program was to provide them with more information to help identify the most cost-effective ways to meet program requirements. As Builder B put it: "It all goes back to what Builder C was saying about having clear scopes of work and costs so that we could understand whether we should do it. Even if it came to cost neutral, we would do it." Builder D added the information should be provided by housing type, such as single-family and multifamily. Builder C said she had tried to get information from the utility representative and he: "…didn't know if it was even $50 or $500. No idea. Even a ballpark would help."

The distinction made by builders was the program requirements were fairly clear, but they needed more objective information about costs to know which measures to use. The situation was aggravated by the market slowdown, which led all of them to reduce staff, thus making it harder to do the research needed.

Builder D suggested the utility work with their own group of installers and: "…say if you work with our people, it's going to cost you this much. They would have a list of contractors and their rates. It would show you, if you change from the standard to an upgrade, this is how much it will cost you. This is something we would use and could show homeowners to get them to decide."

One builder stressed the need for simplicity too because he had to let staff go. He noted: "If all it takes is a signature, I would do it. We have all cut back on staff and don't have extra time to fill things out."

Another common concern was the various programs varied by climate zones or across utilities. Builder B said they needed some clear direction and consistency from the utilities about the different programs.

Builder B also said a brochure or training provided to their salespeople would be very helpful. Builder C stressed consistency in messaging was important, saying: "They could come up with a slogan and keep running with the same slogan. It would become commonplace for the public; they would be able to appreciate it." As noted earlier, there was considerable support in this group for using the ENERGY STAR label as much as possible.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the interviews and focus groups we conducted, several consistent themes emerged that helped define recommendations for ways to enhance the programs. Our conclusions and recommendations are presented below by program We also note these observations are based in part on experiences of builders who participated in the program one or more years ago, so some of the recommendations may have already been implemented or are underway. In these cases, conclusions from our research can further justify such program revisions.

5.1 Savings By Design Recommendations

5.1.1 Early Energy Charrettes

There was widespread agreement with one of the fundamental goals of SBD, that intervention was needed at the earliest possible stages in the project in order to be most effective. Despite this, there were many examples cited where the owner and/or architect had made fundamental design decisions that had substantial energy implications, before the SBD energy efficiency involvement had occurred. Engineers, especially, felt that most of the options they could have recommended were no longer applicable by the time they were consulted. This led to the suggestion that SBD push owners to convene an energy design charrette[1] at the earliest possible moment in their project development. This charrette would be attended by the owners and the full design team, including the mechanical and electrical engineers, as well as by a team of nationally recognized energy efficiency experts. The objective of the charrette would be to review all of the potential energy efficiency aspects of the project, and to explore all feasible, "out-of-the-box" ideas at an early enough stage that they could conceivably be incorporated into the project. The process could last from a half-day to perhaps three days, depending on the complexity of the project. Such a charrette would be paid for by the SBD program. Although this would pose some risk to the program, because not all projects progress to completion, it would be the only way to push many projects beyond the "business as usual" approach to design. Clearly not all owners would be interested, but for those who are, the charettes could be dramatically influenced toward much higher levels of efficiency.

5.1.2 Push High Efficiency, Not LEED

The highest incentives are paid for participation in the Sustainable Communities (SC) program provides an additional 20% incentive for buildings that exceed Title 24 by 20% and achieve LEED certification. As observed above, many participants were skeptical about LEED and its value, yet they all acknowledged that higher levels of energy efficiency were valuable. This led some to question why the utility would make LEED

[1] Charrette: An intensive design process that involves the collaboration of all project stakeholders at the beginning of a project to develop a comprehensive plan or design

certification a requirement for higher level incentives, rather than simply providing higher incentives for higher efficiency. They could understand a utility pushing for higher efficiency, but were less clear why a utility would push for the other sustainability goals of LEED. Also, as much of this discussion took place in the context of the Sustainable Communities option, we note that even experienced participants confessed confusion about the relationship/distinction between SBD and SC. This confusion is counterproductive; either the distinction needs to be greater or one of the program names should be abandoned (probably SC).

5.1.3 Expand Credit for Unconventional Efficiency Measures

The more energy-sophisticated participants were aware of many of the limitations of incentives tied to Title 24 requirements. Because T-24 is built around code compliance, there are a number of measures that affect building efficiency that are not allowed; measures that are subject to gaming, measures that may not be reliably enforceable, measures for which a baseline is difficult for a code official to verify, etc. Examples of this include building orientation or massing changes, lack of air conditioning, inclusion of improvements in outdoor lighting or unconditioned space, co-generation, etc. The existing ACM simulation tools do not readily accommodate many measures that could save substantial amounts of energy. As SBD becomes increasingly ambitious, it may become necessary to update the analysis methods to credit measures that lie outside the T-24 compliance domain. There are no technical reasons this could not be accomplished within the CA evaluation context, provided the savings credits are well documented and defensible, but the practical issues would need to be thoroughly addressed to ensure reliable savings and to prevent gaming.

5.1.4 Establish Track for Cutting Edge Projects

Currently, the Sustainable Communities program is the mechanism established for demonstration projects. Some of the designers, however, suggested that there be a track specifically established to encourage cutting edge projects that significantly diverge from conventional energy efficiency solutions, and which could demonstrate substantial new opportunities for advanced energy efficiency. The projects would likely be smaller scale projects with committed owners, but this option might help to point the way forward for the next level of efficiency.

5.1.5 Provide Early Design Team Incentive Payment

Despite the ambivalence toward design team incentives discussed in the previous section, most designers value them and would like to have them earlier in the design process. Currently, the only way a partial design team incentive can be paid earlier than the project completion stage is under the Sustainable Communities option, which requires very aggressive efficiency levels and LEED certification. Because the typical design team incentives arrive so late, often years after the extra design effort was expended, the link between the reward and the behavior it encourages is lost. Reluctant designers may not even view the incentive as interesting. If it were easier for designers to receive a portion of the incentive earlier, it would likely be more influential and give SBD a more prominent role in their projects. Of course, there's greater risk to the utility that the project will not proceed and the incentive would be "wasted", but this risk may be offset

by the greater interest and influence the program would engender in the design offices. Any losses could be offset by higher savings levels and/or greater SBD influence on other projects.

5.1.6 Encourage Public/Private Partnerships for Renewables

The school districts represented in the focus groups described a variety of budgeting constraints that make it difficult for their projects to go much beyond code, especially if substantially higher capital investments were needed. One of them described a public/private partnership for photovoltaics on their facility rooftops. It involved the district essentially leasing its roof area to a private investor, who paid for and operated a PV system. The school district shared in the energy savings dollars, and the investor was able to take advantage of the depreciation and tax credit incentives for the PVs, which would be wasted if the school owned the system. The utility could build upon this sort of innovative financing model, by actively encouraging and facilitating it to produce greater savings and renewables than would otherwise be possible.

5.2 Advanced Homes Recommendations

5.2.1 Program Components

Both builders and utility staff indicated there were confusion and uncertainty about the different components of the program: case study projects, prescriptive measures, and ENERGY STAR. One issue was that the emphasis has changed over time, and this has created confusion among both builders and Account Executives charged with informing and recruiting participating builders. Many builders were not very familiar with the overall program name—Advanced Home Program. Most, however, were familiar with the ENERGY STAR name and felt their buyers were also. A few mentioned LEED and associated it with green and energy-efficient homes.

Several respondents liked the flexibility of different program offerings though. Given the challenges posed by ever-more stringent Title 24 standards, many builders were discouraged by the difficulty of exceeding the standards by any significant amount.

To address these issues, we offer the following recommendations:

- **Institute more continuity in program offerings**: Establishing a program label and requirements that are fairly constant and predictable over several years would likely increase participation and builder commitment.
- **Leverage ENERGY STAR and LEED**: ENERGY STAR is well recognized among both builders and consumers; LEED is becoming better known among builders. Consider providing a range of ratings (such as ENERGY STAR and ENERGY STAR Silver, Gold, and Platinum) as ways to recognize various efficiency levels and leverage the LEED terminology.
- **Continue to offer prescriptive options**: Although simplification would justify reducing program options, the flexibility of a prescriptive program

component could increase participation by bringing in builders who are unable to do comprehensive efficiency upgrades. A prescriptive option could be used to target specific measures that would be considered for future Title 24 revisions.

- **Enhance demonstration/case study program component:** These projects provide a vehicle for promoting and demonstrating advanced technologies and innovative designs. They should continue and, where possible, be linked to other programs (such as municipal green building programs or programs like Sustainable Communities) that address broader impacts (e.g., water usage) and less commonly applied technologies. The information from these projects should be well documented (e.g., in case studies) and both utility staff and outside parties should be informed about their progress and results.

For the program's demonstration component, program managers recommended expanding the scale and making the program design flexible enough to meet the projects' needs instead of restricting projects to meet program needs.

5.2.2 Program Processes

The most prevalent concern about program processes involved marketing and recruiting activities. Most respondents either felt the quality of program marketing materials was not very good or they were not even aware of any such materials. Participants typically became aware of the program through Account Executives, but contacts with Account Executives had been fairly erratic or inconsistent for some builders in the recent past.

Based on the observations provided by utility staff and builders, we recommend the following:

- **Program marketing materials should be improved:** Focus groups should be held with builders and their sales staff to identify the best type of materials to provide, the most effective content, and the preferred messaging. All materials should be at a quality level comparable to other professional marketing directed at builders and home buyers. The program Website should be reviewed and modified to increase its usability.
- **Participants should receive recognition:** One frequent builder comment was the need to communicate the value of participating homes to buyers. Plaques for program homes or for participating builders to display could be useful for promotion. Recognition of rental properties in the program could help overcome the first-cost hurdle by informing renters their utility bills could be lower. The utility should consider recognizing participating builders on the Website.
- **Account Executives' role in recruiting and marketing should be enhanced:** Account Executives are the main avenue for recruiting participants, but it appears turnover and other factors have disrupted their ability to work with potential participants. It may be appropriate to increase the number of Account Executives, so each can spend more time with fewer builders to work through participation issues, fill out

paperwork, etc. Also, the training and timely program information they receive should be increased, so they can keep their customers up to date on program features.

- **Coordination with other organizations to market program should be expanded:** Efforts to work with organizations such as the CBIA, USGBC, and others that reach a large number of builders should be enhanced to leverage their connections to recruit builders. Joint marketing with builders should be explored.

Several builders commented on the inspection or QA process. Many noted the program added to a growing list of inspections their projects were subjected to. Although we do not believe program QA inspections should be dropped, we recommend steps to make them more effective and less burdensome:

- **Enhance Account Executive involvement**: Account Executives can provide useful continuity with builders by participating in QA inspections. Also, the Account Executives' effectiveness can increase if they learn more about the inspections.
- **Minimize the burden on builders:** Inspections can take time away from construction activities; so it is important to be flexible in scheduling them and sticking with a schedule. Having more staff available to conduct inspections could help meet these needs. Also, to the extent reasonable, the process should be relatively collaborative.

5.2.3 Program Services

Builders and Account Executives considered program incentives to be relatively important, and they appeared to be increasingly important now that the housing market has slumped and builders are cutting their costs. On the other hand, participating builders interviewed typically did not say the incentive amount had to be very large for them to participate; as long as they could nearly cover their added costs, most thought they would want to participate. Utility staff noted that if the incentives became too large, they could affect program cost-effectiveness. Based on the comments received, we provide the following recommendations:

- **Incentive amounts should be reexamined, taking into account current market conditions:** Builders face a significant market downturn that could justify a short-term increase in incentives. Incentives should be examined, given recent trends in construction costs.
- **Provide incentive options for architects, designers, engineers, and energy analysts:** These industry members are key to helping builders select energy-efficient measures and incorporate them in their designs. Special analyses to examine additional measures increase design and analysis costs; so incentives for these activities could increase participation.[1]

[1]We understand the utility was working on adding such incentives at the time we conducted our interviews.

Most respondents noted several shortcomings in training and education. Many said they were unaware of recent training. Most interviewees felt training and education could be used effectively to improve the program. Thus, we offer the following relevant recommendations:

- **Ramp up industry training and education while the industry is slow**: The slowdown appeared to be a good time to develop and offer training on selected topics.
- **Develop training modules available online:** Specific training modules builders and others could access through Webcasts or at any time of their choosing would reduce travel costs and schedule disruptions.
- **Focus training on benefits and costs of efficiency improvements:** A common concern builders expressed was a lack of understanding about the benefits of efficiency improvements required by the program. Similarly, many said they were unsure what the most cost-effective ways were to meet program requirements.
- **Provide training on compliance with the thermal bypass checklist**: This ENERGY STAR requirement appeared to be a major obstacle for builders, but it is required to achieve ENERGY STAR energy savings. Programs and materials should be developed in conjunction with the industry to train builders and contractors on how to meet the requirements most cost-effectively.

As noted earlier, one of the most commonly requested services was a tool that builders could use to compare different ways of meeting the program requirements based on energy savings and costs. Many builders said they did not know where to start comparing different ways of meeting the requirements. In addition, there were other suggestions for types of information builders would find useful. Based on comments from the builders and several Account Executives, we provide the following recommendations:

- **Produce information on comparative costs and energy savings of alternative measures:** We suggest the utility work with the industry to determine the most useful format—for example, standard tables or calculating spreadsheets—for providing this information. Research would need to be conducted to compile cost ranges and energy savings of various energy-efficiency options. This information would need to be regularly updated to stay current.
- **Provide a list of resources and contractors:** Several builders said a list of information sources and contractors who could provide services required under the program would be very helpful. This could be provided on the program Website. Suitable screening processes and disclaimers would be required as would a process for removing resources and contractors from the Website.
- **Provide access to a hotline:** Various other energy-efficient and green building programs have developed hotlines for program and technical information, and they are usually well used. The utility should investigate

the costs of providing such a service or linking into a similar hotline provided by another entity.

Several builders and program staff said technical and design assistance was needed. The utility had provided some limited technical assistance in the past, but this service had declined. Our recommendation in this regard follows:

- **Provide additional technical assistance and limited design assistance:** The utility may have staff capabilities to assist builders with technical issues related to meeting program requirements. Account Executives could be more effective if they had training in technical issues or could link customers to utility employees or consultants who could provide the required assistance. The utility should be able to respond to designers and architects to provide access at least to limited design assistance.

5.2.4 Communications

Several respondents identified types of communications that should be enhanced to improve the program. Based on these observations, we make the following recommendations:

- **Outreach to architects, engineers, and HVAC contractors should be increased**: Historically, the program has not reached out to broader groups in the residential market. Communicating with architects, engineers, and a range of contractors could help promote the program and improve participation and performance.
- **Communications should be more timely**: Given expressed concerns about frequent program changes and lack of builder awareness, greater effort is required to inform program target audiences about program changes. One option would be, whenever the program changes, sending emails to all past and current participants and to builders on lists developed by Account Executives.
- **Internal communications should be frequent and timely**: For Account Executives to be most effective, they need to stay current regarding program features and likely changes. Regular meetings with program managers and frequent internal electronic postings among all program staff would be useful for sharing lessons learned and new information that might affect future directions.

6. APPENDIX

6.1 Nonresidential Staff Interview Guide

The purpose of these interviews is to give Sempra directly-applicable information on:

- Which existing services and potential new services are most highly valued
- Where improvements should be made.

The questions are designed as open-ended. This is an interview guide and not a survey, so the interviewer should explore additional relevant topic threads that interviewees may bring up. The interviews will also give Savings By Design staff an opportunity to give their frank opinions, anonymously, to the evaluators.

6.1.1 Introduction

Hello, this is _____ from the Heschong Mahone Group. I'm calling to ask you some questions about Savings By Design, which should take 15 minutes. Is now a good time? If not, when should I call you back?

The answers you give may be used in the report we submit, but your answers will be anonymous.

6.1.2 Personal Details

First I'd like to confirm some details about you:

1. What is your job title?
2. What do your job duties for Savings By Design typically involve?

6.1.3 Whole Building Paradigm vs. Systems Analysis

3. How many Savings By Design projects that you have been involved with used the whole building approach for program incentives vs. the system analysis? (percentage or number)
4. Do you see any differences between the projects using the whole building approach in comparison to projects using the system analysis? (*If needed, prompt by asking for differences in building types, building size, measures used)*
5. Do you feel that there is extra value derived by the design team from the whole building approach, and is worth extra effort and expense? If so, what type of value? How (or how not) is it worth it?
6. Do you feel that there is extra value derived by the owner from the whole building approach, and is worth extra effort and expense? If so, what type of value? How (or how not) is it worth it?
7. Would you make any changes to the structure for the whole building approach? (*If needed, prompt by asking about incentives, bldg types, software, etc)*

6.1.4 Program Incentives

8. How many Savings By Design projects that you have been involved with take advantage of only owner incentives? (percentage or number)
9. How many Savings By Design projects that you have been involved with take advantage of both design team and owner incentives? (percentage or number)
10. Do you feel the design team incentives promote added value to the building design process, for the design team and/or the owner? If so, what type of value?
11. Do you feel the owner incentives promote added value to the building design process? If so, what type of value?
12. Would you make any changes to the incentive structure for the design team or owner?

6.1.5 Program Procedures

Do you feel any changes should be made in the following program procedures:

13. Applications?
14. Energy analysis?
    a. How valuable is the service?
    b. Should the service be completed by the program staff or provided by energy consultants?
15. Incentive payments?
16. Verification?
17. Commissioning?
18. Other procedures?

6.1.6 Sustainability goals

19. Do you think the nonresidential new construction sector views energy efficiency as part of a larger sustainability goal or as a separate objective?

20. How many Savings By Design projects that you have been involved with are also part of the Sustainable Communities program? (percentage or number)

21. For those that participated, how did Sustainable Communities influence the projects? Are there other ways that Savings By Design could promote greater environmental objectives beyond energy efficiency?

22. How can Savings By Design better integrate with Sustainable Communities, LEED, or other Green/Sustainable programs and goals?

6.2 Nonresidential Focus Group Outline

1) Introductions & Round of Questions (15 - 20 mins.)
   a) Who we are and why we called you here.
   b) Who you are?
      i) Is energy efficiency important to you?
      ii) Why or why not?
   c) What will help make buildings more energy efficient?
   d) What needs to change to make energy efficiency more sustainable?
2) NRNC Market (20 – 30 mins.)
   a) Who is responsible for energy efficiency recommendations?
   b) Who is responsible for energy efficiency decision making?
   c) Does energy-efficiency work in this type of arrangement? Why or why not
   d) What role does SDG&E play in your design decisions? In the buildings market?
   e) Other possible questions or topics
      i) role of builders
      ii) role of Value Engineering
      iii) role of O&M staff / role of Cx
      iv) role of energy code
      v) (designers only) Discussion of optimized energy design
      vi) (designers only) educating owners
      vii) (owners only) how your designers present energy options
3) SBD Program (60 mins)
      a) Are you aware of the SBD program?
      i) How did you learn about it?
      ii) Have you participated? In what role? How often?
      iii) How favorable/unfavorable is your impression of SBD?
   b) SBD influence on your projects
      i) Did you change your design as a result of SBD influence? How?
      ii) How influential was SBD technical assistance?
      iii) How influential were the design team incentives?

iv) How influential were the owner incentives?

v) Were there other influences?

c) SBD program processes

i) How were your working relationships with the SBD program reps?

ii) How was the application process?

iii) How was the verification process?

iv) How was the incentive payment process?

d) Sustainable Communities (SC)

i) Are you aware of the SC program?

ii) How have you been involved with it?

iii) How did it influence your project(s)?

iv) How well did the process work for you?

4) Program Suggestions (10 mins)

a) What could SDG&E do to make SBD more effective for you?

b) What elements of the program should be dropped?

5) Ending Questions and "What Else?" (10 mins)

a) Other benefits of energy efficiency – productivity, increased comfort

b) If the programs went away, would you change your design practices?

c) If the standards or enforcement were relaxed, would you change your design practices?

6.3 Residential Focus Group Outline

We note that building practices and market actors differ between high rise and mid/low-rise multifamily housing and these differ from those for the single-family home building market. Consequently, each focus group will target one of these and the guide will be tailored, as needed, to the specific market segment. Focus group conversations will proactively draw out the differences and barriers each group experiences. It is also noted that builders may be more familiar with one participation channel or technology than another (e.g., Energy Star performance approach or prescriptive technology) so experiences specific to the technology or channel will be drawn out and highlighted.

1) Introductions & Round of Questions (15 - 20 mins.)

a) Who we are and why we called you here

b) Who you are

i) Role in industry, types of buildings (single- and multi-family), volumes, etc.

ii) Perceptions, attitudes, knowledge about energy-efficient and green and sustainable building practices and measures and value of these to your business

2) Advanced Home Program discussion (75 minutes)
   a) How did you learn about the Advanced Home Program?
      i) How would you describe it?
      ii) Why did you decide to participate?
   b) Perceptions about program participation procedures (recruitment, applications, energy analysis, rebates, verification, etc.)
   c) Perceived value of education (sustainable design and construction, green building practices, emerging technologies), design and technical assistance, financial support
   d) Review of program's successes and effectiveness in its four major activities:
      i) demonstration projects
      ii) support for Energy Star homes label
      iii) prescriptive measures (HVAC, insulation installation, DHW)
      iv) industry education on changes to Standards and technologies
   e) How was learning from program participation transferred to other areas in California?
   f) Was the program successful in engaging and partnering with other programs inside and outside the utility? How was it successful or not successful?
   g) Are there broader issues that need to be considered? For example, are there statewide or cross-utility consistency issues?
3) Program Suggestions (10 mins)
   a) What could SDG&E and SCG do to make the Advanced Home Program more effective for you?
   b) Are there elements of the program that should be dropped?
4) Ending Questions and "What Else?" (10 mins)
   a) If the program went away, would you change your building practices?
   b) What will you do with what you got out of this program?