

# Evaluation of the 1998 California Non-Residential Standard Performance Contracting Program: A Theory-Driven Approach

*Mike Rufo, XENERGY Inc.*

*Ralph Prah, Prah and Associates*

*Pierre Landry, Southern California Edison Company*

## Abstract

This paper describes a comprehensive, statewide evaluation of the Nonresidential Standard Performance Contract (NSPC) program implemented by the three major investor-owned electric utilities in California in 1998. The 1998 NSPC is a new program designed to meet the energy-efficiency goals of the California Public Utilities Commission and the California Board for Energy Efficiency (CBEE). In its first year, the NSPC was the largest, single program element in California. The basic objectives of the evaluation were to conduct a statewide assessment of the baseline characteristics of the current nonresidential retrofit market for performance contracting and related energy-efficiency services, and to conduct a broad statewide process, market, and impact evaluation of the 1998 standard performance contract programs. A theory-based evaluation approach was used to develop program hypotheses, market indicators, and an assessment of near-term market effects. The evaluation was conducted on a close to real-time basis and had a major impact on the program design features for 1999 and 2000. The study also included a baseline survey that was used to compare the characteristics of program participants with the broader population of customers in California and throughout the United States. The baseline data will also be used as the foundation for future market effects studies of the NSPC. In this paper, we focus on the development of the program theory and the results of our assessment of the Program's near-term market effects.

## INTRODUCTION

As part of a broader restructuring process aimed at enabling a competitive energy industry in California, the California Public Utilities Commission (CPUC) and the legislature recently changed the nature of continued intervention in energy efficiency markets. These changes included the abandonment of IRP and utility-based least-cost planning; a move toward independent administration of energy-efficiency programs to be completed by 2001; and the explicit elevation of a competitive, energy efficiency industry as an objective for achieving energy efficiency goals during this industry transition period. As part of this process, the CPUC also explicitly supported development and implementation of a *standard performance contracting program* as a strategy for supporting the development of a competitive and self-sustaining energy efficiency industry. In response to these changes, California's three major electric IOUs implemented nonresidential standard performance contracting (NSPC) programs in their respective service territories. Although technically three separate programs, the three

utilities NSPC programs were designed to be virtually the same and function as a statewide program, which they did. Therefore, in the remainder of this paper we refer to the California NSPC Program in the singular.

## **PROGRAM DESCRIPTION<sup>1</sup>**

Under the 1998 NSPC program, the Program Administrators (utilities) offered a fixed price incentive to energy efficiency service providers (EESPs)<sup>2</sup> for measured kilowatt-hour (kWh) energy savings achieved by the installation of an energy efficiency project. The fixed price per kWh, performance measurement protocols, payment terms, and all other operating rules of the program were specified in a standard contract. The role of the Program Administrator was to manage the program in a fair and nondiscriminatory manner, promote the program, educate customers and EESPs on the program, and enter into contracts with applicants to pay for measured energy savings.

The 1998 NSPC was a "pay-for-performance" program. With traditional utility rebate programs, the utility pays an incentive directly to its customer based on an estimate of annual savings from a project. However, with the pay-for-performance NSPC program, the utility pays a variable incentive amount to a third-party EESP, or to a customer acting as their own EESP, based on measured energy savings. The NSPC is also different from traditional utility rebate programs in that the total incentive is paid over a two year performance period. During the performance period, the EESP must measure and verify the energy savings actually achieved using a mutually agreed upon measurement protocol. The incentive levels for the 1998 program were as follows:

<u>Measure Type</u>	<u>Price/kWh Saved</u>
• Lighting	\$0.075
• HVAC&R	\$0.210
• Other	\$0.110

In Table 1, we provide a summary of the program participation indicators for the 1998 NSPC, *as of October 1998*.

---

<sup>1</sup> The program description provided in this paper is extremely brief. The program has a number of detailed requirements. Interested readers should refer to Appendix A of the full NSPC evaluation report, or to the utilities' procedure manuals which are available via the following websites: Pacific Gas and Electric Company - <http://www.pge.com/spc/>; San Diego Gas and Electric - <http://www.sdge.com/spc/>; Southern California Edison - <http://www.scespc.com/spc.nsf/>.

<sup>2</sup> In the context of the program, an EESP can be any company, organization or individual that contracts with the administrator to receive payment for measured energy savings resulting from an energy efficiency project. In the 1998 SPC Program, a customer can act as an EESP by contracting directly with their utility and installing and measuring savings from an energy efficiency project at their own facility. Within the context of this paper, however, we refer separately to self-sponsoring customers and EESPs. Our references to EESPs in the remainder of this paper refer to third-party firms, not customers.

**Table 1. Summary of 1998 NSPC Program, as of October 1998**

<b>Activity Level</b>	<b>Figure as of 10/98</b>
Total number of unique customers	92
Total number of applications	144
Total number of sites	605
Total amount of incentives applied for	\$33.8 million
Total number of unique third-party EESPs	26
Percent applications represented by third-party EESPs	56%

## **NSPC EVALUATION OBJECTIVES AND TASKS**

The objectives of the NSPC evaluation were to: 1) Conduct a **statewide assessment of the baseline characteristics** of the current nonresidential retrofit market for performance contracting and *related energy-efficiency services*; and 2) Conduct a broad **statewide process, market, and impact evaluation** of the **1998 NSPC Programs**. The second element of the evaluation focused on reviewing and integrating the results of utility tracking, monitoring and measurement activities; characterizing how the programs actually worked in 1998; refining hypotheses regarding the potential market effects of the programs; and providing timely feedback for use in improving future NSPC Programs.

While this paper outlines the evaluation plan and overall results, the main focus is on the program theory and assessment of near-term market effects. There are a wealth of important findings from the baseline end user component of this study that will be published in a separate, future paper. Similarly, the results of the process evaluation component of this study warrants an additional paper and are not included here. Some findings from this evaluation's interviews with energy-efficiency service providers are summarized elsewhere in these proceedings.<sup>3</sup>

In Table 2, we present the key evaluation tasks conducted for this project. These tasks were developed to support the methodological approaches enumerated above. Note that all of the activities listed in the table were conducted *during the program's first-year of implementation*.

---

<sup>3</sup> Skumatz, L., Bordner, R., and Rufo, M., "Market Transformation Through Non-Residential Standard Performance Contract Programs – What Drives The Participation Decision?," 1999 International Energy Program Evaluation Conference, Denver, Colorado. August 1999.

**Table 2. Key Data Collection Activities**

<p><u>Initial Interviews with Utility Staff on Program Administration and Outcomes.</u> At the outset of the study, interviewed utility employees to get a good understanding of how the program was being administered; this was done to determine how modes of administration affect program outcomes and to identify process- and policy-related issues.</p>
<p><u>Initial Interviews With Participant EESPs.</u> Interviewed a sample of 22 EESPs that participated in the 1998 NSPC to obtain feedback on process-related issues and collect information that can be used to develop a baseline of existing business practices and characteristics.</p>
<p><u>Initial Interviews With Non-Participant EESPs.</u> Interviewed a sample of 17 EESPs that were <u>not</u> participating in the 1998 NSPC to collect comparative information that can be used to develop a baseline of existing business practices and characteristics and ascertain reasons for non-participation.</p>
<p><u>Customer Baseline Surveys, California.</u> Surveyed a representative sample of 500 California customers' to establish baseline awareness, knowledge, attitudes, and practices regarding EESPs, performance contracting, and general energy-efficiency related decisions.</p>
<p><u>Customer Baseline Surveys, Comparison Area.</u> Administered the same survey developed for CA to a sample of 500 representative end users drawn from comparison area(s) outside of California, to assess whether any pre-post trends are due to SPC programs or to broader trends in the energy efficiency industry.</p>
<p><u>Survey Participating Customers.</u> Surveyed a sample of 41 participating customers to assess issues such as free riding, customer satisfaction, validation of marketing methods reported by EESPs, and the extent to which these marketing methods are addressing perceived market barriers.</p>
<p><u>Re-interview EESPs.</u> Re-interviewed a sample of 14 participating EESPs about: (a) the actual marketing approaches they used; (b) any new information regarding program process issues; and (c) how participation in the NSPC program affected their business practices, their marketing approach, and their financial health.</p>
<p><u>Re-Interview Utility Staff on Program Administration and Outcomes.</u> Obtained updated information on process related issues at the end of the first year of operation.</p>
<p><u>Developed Statewide Program Database.</u> Integrated the three utilities program tracking databases into a statewide database to characterize participation.</p>

## METHODOLOGY

One of the first tasks of this study was to develop initial program theories and hypotheses that could be used to form the basis of our evaluation. Theory-based evaluation is a broad descriptor of an evaluation approach that has been used in a number of policy fields for some time. According to Weiss,<sup>4</sup> the idea behind theory-based evaluation (TBE) is that:

...the beliefs and assumptions underlying an intervention can be expressed in terms of a phased sequence of causes and effects (i.e., a program theory). The evaluation is expected to collect data to see how well each step of the sequence is in fact borne out. This approach to evaluation offers a way in which evaluation can tell not only how much change has occurred but also, if the sequence of steps appears as expected, how the change occurred. If the posited sequence breaks down along the way, the evaluation can tell at what point the breakdown occurred.

<sup>4</sup> Weiss, Carol H., "How Can Theory-Based Evaluation Make Greater Headway?," Evaluation Review, Vol. 21, No.4, August, 1997, 501-524.

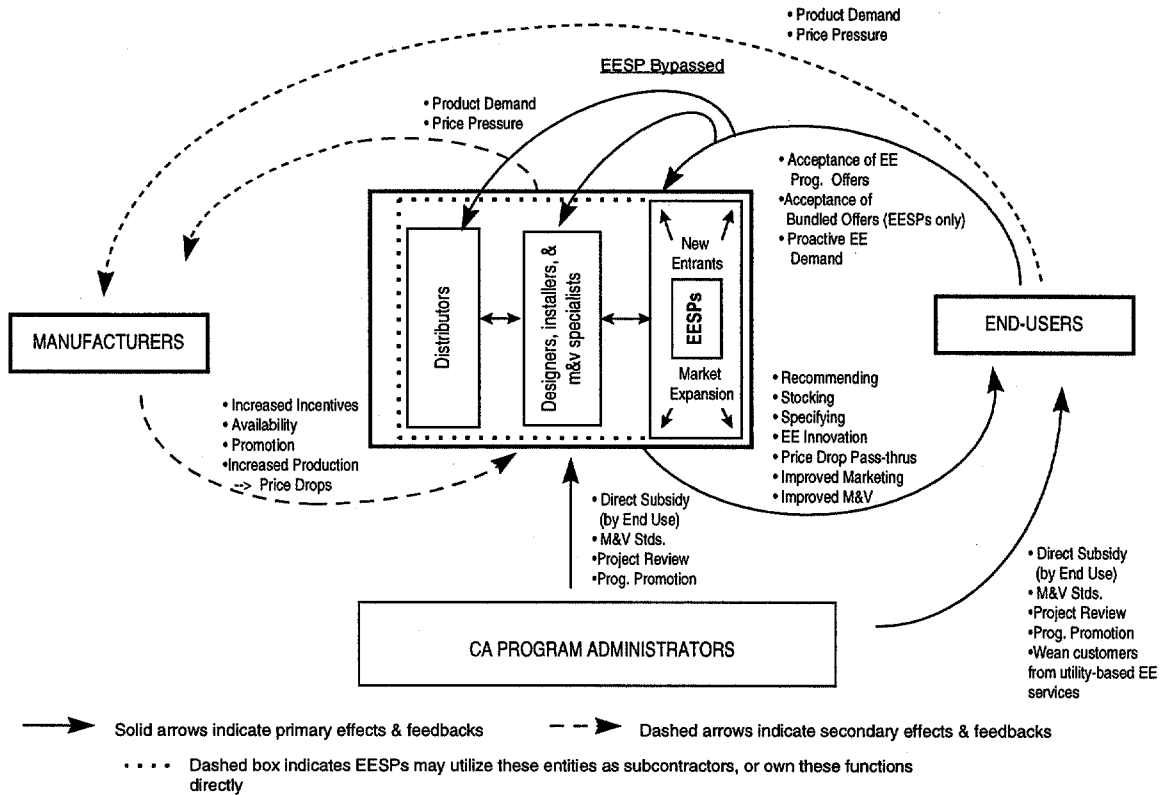
Theory-based evaluation provides a critical framework to evaluation of programs that seek to cause lasting structural changes in social or economic systems. The first lesson of TBE is that a useful evaluation must be fully informed by the causal theory that underlies the program intervention. In particular, for this NSPC evaluation a detailed exploration of program theories and hypotheses was necessary to inform development of data collection instruments, to establish appropriate baseline benchmarks, and to provide a framework for assessing both short- and long-term market effects.

The program theory was focused on the market assessment portion of our evaluation and thus explored the ways in which the NSPC might lead to causal changes in the marketplace that ultimately result in long-term market effects. In developing the initial theories and hypotheses that follow, we also used the *Market Transformation Scoping Study* (Eto, et al., 1996) as a key source for definitions and analytical frameworks.

### **Importance of Market Dynamics to Development of Program Theory**

Our program theory analysis was driven by our overall perspective on the *big picture* relationships between suppliers and consumers of energy-efficiency products and services. In order for energy-efficient products and services to be self-sustaining in the marketplace, both supply-side and demand-side interests must become aligned with respect to the value of these products and services. On the supply side, it is critical that the products and services are available, that vendors are aware and knowledgeable about them, and that they stock, promote, and specify them in their business interactions with end users. On the demand side, it is equally critical that end users are aware and knowledgeable about the products and services. In addition, most end users must be able to justify their purchases based on some level of analysis or judgment that demonstrates that the incremental costs, if any, are justified based on the monetary value of the energy savings obtained, plus the value of any other non-energy benefits. If the large majority of end users' investment criteria are not met (which could be because a measure is genuinely uneconomic or because the end users' investment criteria are inappropriate or nonexistent), or if end users have significant concerns about the product or service's features, quality, reliability, or other characteristics, then it is unlikely that enough demand for the products and services will occur to create significant self-sustaining markets.

As first steps in our process of further developing the theories and hypotheses necessary for evaluating the NSPC, we drafted a number of diagrams that graphically present the interplay between the variety of market forces, market actors, and interventions relevant to the Program. In Figure 1 below, we present the positive causal feedback loops that the Program's designers and proponents seek to engender. This diagram focuses on the relationships among the market actors and administrators. Key aspects of this diagram of which to take note include the following:



**Figure 1. Possible Market Feedback Mechanisms Initiated by NSPC Interventions**

- The feedback relationships between end users, EESPs, and other supply-side actors (most notably, designers, contractors, distributors, and M&V specialists) are complex and dynamic. For example, any of the following or combination of the following may occur:
  - ⇒ Customers may work with EESPs who provide turnkey efficiency services. In this scenario, the EESP may also procure products and services from mid-stream supply-side actors, however, the EESP takes the lead in all dealings with the end user (the is the preferred role of ESCo's).
  - ⇒ Customers may choose to *bypass turnkey EESPs* and work directly with the traditional downstream supply-side actors themselves.
  - ⇒ Some customers may even choose to avoid almost all mid-stream actors and procure their efficiency products directly from manufacturers.
- One of the effects postulated is that the program leads customers to prefer providers that bundle energy-efficiency services along with their energy commodity; thereby making energy-efficiency a key driver in the choice calculus of private market actors. Of course, demand for energy efficiency services need not be limited to bundled offers. A related hypothesis is that customers respond positively to program-induced changes in private sector energy efficiency offers more generally, which simply initiates a positively reinforcing cycle of supply and demand for such services. An important indicator of such

a positive feedback mechanism would be increases in the size of the market for EESPs' services.

- We differentiate between primary and secondary order effects of the program based on its current design. Primary effects are those that involve the demand for efficiency services that occurs between end users and mid-stream supply-side actors. Secondary effects are those that occur between upstream supply-side actors (i.e., manufacturers) and mid-stream supply-side actors, and to an even lesser extent, between manufacturers and end users. We hypothesize these as second order effects because of two factors:
  - ⇒ The current program design does not explicitly involve or target manufacturers.
  - ⇒ The current program sends end-use incentive signals, not measure-specific signals.

At the macro-level presented in Figure 1, the primary hypothesized effect of the Program is to stimulate and reinforce a positive feedback relationship between customers and mid-stream suppliers of energy-efficiency products and services. One intended aspect of this process is to wean customers from obtaining all of their efficiency services from regulated utilities. An explicit goal of the NSPC is to encourage customers to obtain and procure efficiency services directly from private sector actors. Increased customer demand for private sector efficiency services may then support existing EESPs, encourage new entrants, and lead to greater competition among service providers, reductions in efficiency product and service costs, improved EESP marketing and sales practices, and energy-efficiency product and service innovation. Secondary effects between downstream suppliers and upstream manufacturers of efficient products may result as well. These potential supply-side improvements may then lead to further increases in customer demand for efficiency services. Thus, one formulation of the goal of the Program is that it should contribute to the creation of a *self-sustaining market* for energy-efficiency products and services that captures *all, or a portion, of* the cost-effective opportunities in end-user facilities.

It is important to recognize that any program intervention may initiate negative as well as positive market feedback mechanisms. Examples of negative market feedbacks that one can hypothesize from the NSPC program include the following:

- Suppliers for whom energy efficiency is not a core competency may respond to the intervention by selling even more aggressively to those customer practices, such as first cost minimization, that favor their products. Rather than responding to the program incentives to promote energy-efficiency products and services, such suppliers might chose to “fight” rather than “switch”. This phenomenon is likely to be dynamic in that some firms may continue to promote inefficient energy solutions initially, but convert over time as the market shifts to demanding higher efficiency products and services.
- The program may support EESPs that seek public intervention funds at the expense of EESPs that are already focused on providing efficiency services without subsidy and do not invest resources in seeking such funds. If, for whatever reason, firms that chose *not* to seek such funds had more attributes that would lead to successful promotion of energy-

efficiency in the absence of public intervention, it is possible that the program could support less effective providers at the expense of these other firms.

- Lastly, if the availability of program funds increases demand beyond the supply capability of established market players, or simply makes it too easy for new entrants to gain market share, there could be a decrease in the overall quality of EESP services. This could result if the program supported firms with poor business practices that would not otherwise succeed in an unsubsidized market.

## **Hypothesized Market Effects**

The principal interventions of the NSPC are focused on EESPs and end users. The principal direct interventions are the provision of financial incentives for energy savings delivered according to the program's rules, the requirement that project sponsors engage in a performance contract with the program administrator, and the use of standardized M&V protocols for determining the actual savings that result. Though not a requirement, most of the program's designers sought to encourage customers to work with EESPs on projects.<sup>5</sup> Program stimuli for other market actors are more indirect. As part of our program theory, we developed the following hypotheses for which we developed measurement indicators for this evaluation:

### **Potential EESP Effects**

- Development of improved marketing and sales skills.
- Changes in business strategies and new market entrants.
- Energy-efficiency product and service innovation.
- Changes in breadth and depth of EESP industry. Number of EESP service providers. Increased market share relative to firms not promoting efficiency. Increases in market valuation and investment. Improved financing terms.
- Improved measurement and verification
- Increased interest in the importance and viability of performance contracting as a long-term business strategy

### **Potential End User Effects**

- Improved confidence in EESPs as credible energy-efficiency service providers.
- Increased confidence in measure savings.
- Increased awareness and knowledge of the benefits of non-lighting energy-efficiency opportunities.

---

<sup>5</sup> It was expected that most of the project sponsors would be EESPs represented end user hosts. To date, however, a large percentage (roughly half) of sponsors have been end users submitting projects on their own behalf.



- Increase in role of energy-efficiency in energy-related procurement practices
- Increased demand for EE products and services, especially non-lighting
- Increased knowledge and awareness of performance contracting

## **ASSESSMENT OF NEAR-TERM MARKET EFFECTS**

Under our theory-based approach, it is critical to focus on whether there is any *early* evidence at all for the hypothesized changes in the market. As time goes on, however, the standard of proof by which the program is judged should be set higher and higher such that in order to claim a market effect, evidence must clearly show a market change has occurred, the change must be shown to be attributable to the program, and evidence must support the likelihood that the change will be durable (i.e., it will last after the intervention is removed or modified). Rather than waiting several years to exhaustively assess whether a program has had any particular market effect, theory-based evaluations must utilize early and frequent measurements over multiple points in time to provide feedback to policy-makers and program designers so that mid-course corrections can be made as necessary.

For each of the NSPC market effects hypotheses, we created one or more market indicators that could be measured to provide evidence with respect to whether the hypothesis was borne out. We then carried out a systematic analysis of near-term market effects that was organized around the evidence obtained from our primary research activities and the extent to which this evidence supported or refuted the program hypotheses. Before presenting a summary of whether the evidence supports these hypotheses, it is important to note the following caveats:

- Because the NSPC program has only been in operation for one year, we are looking less for convincing, evidentiary proof of lasting, program-induced changes in the marketplace (which rarely occur so quickly from any new program intervention) and more for whether there are any early indications that any of the hypothesized sequences of events have begun to manifest themselves.
- Importantly, readers must keep in mind that the 1998 program is still being implemented as of this writing, due to multi-year milestones. Thus, by definition, some effects may not be manifest since the intervention itself is still in progress.
- We have *longitudinal* results for only two of the market actors involved in the program to date, namely, participant EESPs and the utility administrators. We lack longitudinal data for three key market actors: the population of California and non-California end users, end users that participated in the 1998 program, and EESPs that did not participate in the 1998 program. These data may be developed as part of a future study.
- Finally, this is the first California program that has been subject to such vigorous first-year evaluation of near-term market effects. Thus, there are no programs with which to compare the NPSC on a relative basis because they have not yet been similarly evaluated.

***Within the context of the caveats above, we believe that the overall weight of the evidence collected to date indicates that the 1998 program is generating few near-term market effects.***

As summarized in Table 3, the strength of the evidence in support of the hypotheses is very limited. The case in support of the supply-side hypotheses is currently weak for five of the six hypotheses. The supply-side assessment is based primarily on the self-reports of EESP participants, who themselves indicated the program has yet to influence their business practices. In addition, in the one case where we have rated the strength of the evidence as moderate (for improved M&V capabilities), we are concerned about whether the capabilities developed to meet the program requirements are sustainable given the level of resistance to these requirements expressed by many EESPs. If EESPs report that the program is not inducing changes in their business practices, this makes it less likely that end user market effects will occur, since the latter are hypothesized to follow from a sequence of events that start with the EESP changes.

**Table 3. Summary of Near-Term Market Effects Assessment of the 1998 NSPC**

Hypotheses	Extent of Evidence to Date	Strength of Evidence to Date
<b>EESPS</b>		
1. <i>Development of improved marketing and sales skills</i>	Limited to baseline	Weak
2. <i>Changes in business strategies</i>	Moderate	Weak
3. <i>Energy-efficiency product and service innovation</i>	Weak	Weak
4. <i>Changes in breadth and depth of EESP industry</i>	Weak	Weak
5. <i>Improved M&amp;V Capabilities</i>	Moderate	Moderate
6. <i>Increased interest in the importance and viability of performance contracting as a long-term business strategy</i>	Moderate	Weak
<b>CUSTOMER/END USER</b>		
1. <i>Improved confidence in EESP as credible energy-efficiency service provider.</i>	Limited to baseline	N/A
2. <i>Increased confidence in measure savings.</i>	Limited to baseline	N/A
3. <i>Increased awareness and knowledge of the benefits of non-lighting energy-efficiency</i>	Limited to baseline	N/A
4. <i>Increase in role of energy-efficiency in energy-related procurement practices</i>	Moderate	Weak
5. <i>Increased demand for EE products and services, especially non-lighting</i>	Limited to baseline	N/A
6. <i>Increased knowledge and awareness of performance contracting</i>	Limited to baseline	N/A
<b>OVERALL FOR PROGRAM</b>	Limited to Moderate	Weak

On the end-user side, we have conservatively rated the strength of the evidence as “not applicable” for five of the six hypotheses because we have no longitudinal data. Nonetheless, even with only baseline data we were compelled to rate the strength of the evidence as weak for Hypothesis N<sup>o</sup>4, *increase in the role of energy-efficiency in energy-related procurement practices*, because the participants already possessed the desired characteristics upon entry into

the program. There is virtually no room for the Program to produce any significant change among participants because over 90 percent of them already have procurement practices that support rational energy-efficiency decision making. This same phenomenon in which a large portion of participants entered the Program with the characteristics associated with affirming the hypothesis occurs for several other end-user hypotheses. Although we have conservatively rated these “not applicable” as well, we emphasized in our report that the *end-user participants already possessed the desired characteristics in proportions much higher than those found among average customers*. This finding limits the degree to which market effects can occur for the 1998 cohort under even the best case scenario. One of the most important findings of this evaluation is that the 1998 end users appear to have self-selected into the Program based on a previously developed proclivity to make energy efficiency investments. Another area of concern for the 1998 Program was our estimated level of free-ridership. We estimated that only roughly half of the program savings were attributable to the program. The high-level of free-ridership also is attributable to the fact that the largest, most sophisticated customers in the non-residential population self-selected into the program.

For all of the reasons above, our near-term assessment of the 1998 NSPC is that the program has resulted in minimal market effects *to date*. Again, the caveats above apply to this conclusion as well as the important fact that program implementation for 1998 is still in progress (i.e., some intervention milestones have not yet occurred; e.g., measurement and verification).

Although we have summarized the strength of the evidence to date for several of the end user hypotheses in Table 3 as “not applicable,” this should not be construed as meaning there is no relevant baseline information or that this information is not useful for informing one’s opinion of the program. We have utilized “not applicable” under the strength column in the table above for some hypotheses because we do not yet have adequate information to make a strongly defensible judgment. This is a conservatism that results from our objective of being as factually oriented as possible on the parts of this evaluation that require judgment rather than opinion. We therefore encourage readers with a specific interest in this program delivery strategy to go beyond this summary assessment and review the details in our full report. The baseline evidence associated with these hypotheses is critically important to formulating an informed opinion about the 1998 NSPC Program and similar programs.

## **Program-Improvement Recommendations**

The recommendations presented below were developed principally as a result of our near-term market effects analyses and the consideration of these results within the initial program theory. These recommendations are intended to suggest ways in which the NSPC might be improved or modified. The recommendations are not intended to provide specific program design details, but rather to suggest general areas of improvement upon which we believe policy-makers and NSPC program designers should focus their efforts. Although a few of the

recommendations made here were partially addressed by the CBEE in its PY99 advice filing,<sup>6</sup> they were included in our report to underscore their importance.

***Clarify Specific EESP Changes that the Program Seeks to Induce and Develop Program Mechanisms that are more Directly Tied to Initiating these Specific Changes.*** As developed under the program theory for this evaluation, a significant portion of the hypothesized market effects for the NPSC are predicated on a causal sequence of events that starts with changes in EESP marketing and business practices. There was little evidence from the research conducted to date that the Program has initiated major changes in participating EESP business practices. It is critical, therefore, that the mechanisms by which the Program intends to induce the desired changes be reconsidered. We recommend that NSPC program designers develop more explicit statements of the specific changes in EESP business practices that are desired. Specifying and prioritizing the desired EESP changes would help to clarify which aspects of the current program design are useful to achieving the highest priority goals and which are not. For example, if a stated objective is to increase the number of efficiency offers to smaller customers, then program designers might set as a goal that traditional ESCOs develop new ways of reducing their transaction and marketing costs for these customers. An alternative approach, however, might be to get other supply-side actors that commonly work with these customers, such as contractors and O&M firms, to develop new energy-efficiency capabilities that they can offer during their normal business interactions. Although the final objective is the same in both cases (more offers for small and medium sized customers), the means to achieving it differ and may therefore warrant different program strategies.

***Continue Efforts to Change the Composition of End-User Participants.*** As demonstrated throughout our evaluation, end user participants in the 1998 NSPC were most similar to the largest, most sophisticated end users in the non-residential population. There were two negative consequences of the end user participant population characteristics: 1) a moderately low percentage of program-induced energy savings and 2) a reduced likelihood of observing changes in proximate indicators of market effects (because a high percentage of participants already possess the characteristics the program seeks to induce).

We believe that if an intent of the program is to initiate market changes that can lead to market effects then the Program must reach much broader and representative segments of the market than it did in 1998. One of the major changes in administration and design of the Program that was initiated by the CBEE and is currently being implemented is the bifurcation of the Program into two separate programs in 1999: the Small Business SPC (SBSPC) and the Large Non-Residential SPC (LNSPC). We offer a few additional methods by which funds might be further leveraged in the future:

- ***Consider multi-year customer caps.*** As documented in this evaluation, many large customers are very recent repeat participants in incentive programs. Set appropriately, a multi-year cap would offer another way of spreading scarce incentive funding among a broader array of end users.

---

<sup>6</sup> Recommendations of the California Board for Energy Efficiency on 1999 Programs and Budgets, Institutional and Transitional Issues, and Adopted Policy Rules, October 15, 1998.

- *Consider limitations on the number of identical “repeat” measures for which incentives are paid.* If an objective of the program is to demonstrate general or measure-specific energy-efficiency benefits, which then stimulate further investments, then it might be reasonable to limit funding to a subset of *demonstration* measures for those organizations with either many identical sites or many identical applications for a given measure.

***Reassess and Clarify Objectives with Respect to Performance Contracting between EESPs and End Users.*** There is little evidence to date that the program has increased the role of performance contracting in the end user market. Many EESPs purposefully prefer simpler contracting approaches such as fee-for-service or target performance contracting only to segments for which their experience shows it is appropriate. We noted throughout our evaluation that there is a lack of consensus in the industry on the current and future importance of performance contracting in the non-residential marketplace. We also noted that the NPSC Program as currently designed and articulated is somewhat unclear as to its intent around performance contracting. The Program obviously entails a performance contract between the administrators and the application sponsors; much less clear is the extent to which this administrator/applicant performance contract exists primarily as a means of providing *accountability for the use of ratepayer funds* or whether the purpose is to *increase performance contracting between end users and third-party EESPs*. In our opinion these objectives are sufficiently different as to lead to significant differences in program design.

The central question for the NSPC program designers is: Where does performance contracting fit with respect to the other goals expressed for the Program? If these other program goals can be achieved with or without an increase in performance contracting in the market, then consideration should be given to finding other, simpler ways of ensuring accountability of ratepayer funds (for example, one might maintain rules on verification of baseline equipment and measure installation but reduce or eliminate some of the M&V requirements, particularly for non-controls measures for which stipulated savings have been developed and successfully used in prescriptive rebate programs). If, on the other hand, increasing the amount of performance contracting that is occurring in the marketplace is a high-priority objective of the Program, then it should be explicitly stated as such, and additional program mechanisms should be considered to achieve this objective in light of the limited effects of the Program in this area in 1998. Our research indicates that this latter approach would be problematic, however, because many EESPs prefer a program that promotes energy efficiency but allows more flexibility with respect to their contractual relationship with their customers.

***Expand the Diversity of EESP Participants.*** Most EESP participants in the 1998 Program tend to be traditional ESCOs or engineering firms that have pre-program business practices focused on energy-efficiency or performance contracting. This was not an unexpected outcome since these are the very firms the program intended to affect and they were in the best position to market and deliver the program given their business orientation. At the same, another possible objective of the program is to increase the importance of energy-efficiency services to the multitude of firms that regularly deliver equipment-related products and services such as HVAC contractors and O&M firms. Changing the business practices of these supply-side actors could be especially important to creating market effects for small and medium-sized customers to whom ESCOs rarely market. Increasing the participation of these companies will not be easy,

however. Efforts to make appropriate populations of supply-side firms aware of the program will require more sophisticated target marketing efforts and development of industry-specific databases. Targeted advertising of the NSPC, either by itself, or within broader advertisements of efficiency programs should be employed.

## References

- California Board for Energy Efficiency (CBEE). "Attachment 2 to Decision 98-04-063, Interim Opinion: Policy Rules and Request for Proposals for Energy Efficiency Program Administrator." Filing for CBEE, April 23, 1998.
- California Energy Commission (CEC). "How to Hire an Energy Service Company." Energy Efficiency Project Management Handbook. Sacramento, CA, 1997.
- Dayton, et al. "The Energy Services Company (ESCO) Industry: Analysis of Industry and Market Trends." ACEEE Summer Study on Energy Efficiency in Buildings, Vol. 6, August 1998.
- Easton Consultants, et al. "ESCO Market Research Study." Prepared for the Energy Center of Wisconsin and the New York State Energy Research & Development Authority, January 29, 1999.
- Edgar, George, Kushler, Martin, and Schultz, Don. "Evaluation of Public Service Electric & Gas Company's Standard Offer Program." Prepared for Public Service Electric & Gas Company, October 14, 1998.
- Eto, Joseph, Prahl, Ralph, and Schlegel, Jeff. "Scoping Study on Energy Efficiency Market Transformation by California Utility Demand-Side Management Programs." Report, Berkeley National Labs, 1997.
- Goldman, et al. "California's Nonresidential Standard Performance Contract Program." ACEEE Summer Study on Energy Efficiency in Buildings, Volume 6, August 1998.
- Lawrence Berkeley Laboratory. Evaluation report conducted of the Phase I New Jersey SPC program, LBL-37157, Volumes I and II, July 1995.
- Skumatz, L., Bordner, R., and Rufo, M., "Market Transformation Through Non-Residential Standard Performance Contract Programs – What Drives The Participation Decision?," 1999 International Energy Program Evaluation Conference, Denver, Colorado. August 1999.
- Weiss, Carol H., "How Can Theory-Based Evaluation Make Greater Headway?" Evaluation Review, Vol. 21, No. 4, August 1997, pp. 501-524.
- XENERGY Inc. "PG&E and SDG&E Commercial Lighting Market Effects Study." Prepared for Pacific Gas and Electric Company and San Diego Gas and Electric, July 1998.
- XENERGY Inc. Evaluation of the 1998 NSPC Program, Final Report, prepared for the California Board for Energy Efficiency and Southern California Edison Company, June, 1999.