

California's Nonresidential Standard Performance Contract Program¹

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ABSTRACT

The California Nonresidential Standard Performance Contract (NSPC) program represents a bold experiment in non-utility delivery of energy efficiency that has been consciously designed to advance the energy efficiency and market transformation objectives of the California Public Utilities Commission. The program has received broad support from the California utilities, the energy services company industry, and some environmental groups as a model for one type of future ratepayer funded energy-efficiency programs. In the NSPC program, energy-efficiency service providers or customers enter into a standardized, pay-for-performance agreement with a program administrator in which they receive payments for delivered energy savings from high-efficiency measures installed at customer facilities based on a posted price. This paper discusses the origins of the program concept, the policy rationales for key program design features in the NSPC program, and major issues that must be considered in evaluating the "success" of the program in providing energy-efficiency services to the nonresidential retrofit/replacement market and transforming and strengthening the energy-efficiency services industry overall. Early results suggest that the NSPC program will be successful in saving energy cost-effectively and in providing a stimulus to California's private sector energy-efficiency services industry. Project sponsors have responded favorably to end-use-specific pricing signals as non-lighting measures account for 50 to 80 percent of the savings reported to date. However, the ultimate impact of the program in transforming markets will not be known for some time.

Introduction

As part of the restructuring of California's electricity industry, starting in 1998, the three investor-owned utilities (Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric Company) are collecting funds for energy-efficiency programs through a public goods charge (PGC). For 1998, the utilities are acting as interim program administrators of energy-efficiency programs, which were designed through a joint-planning process involving the utilities, interested parties, and the California Board for Energy Efficiency (CBEE), a nine-member advisory board to the California Public Utilities Commission (CPUC). Through this process, the utilities modified existing programs and developed new programs that would collectively reflect the CPUC's new policy objective for PGC-funded energy-efficiency programs: market transformation. This paper focuses on the largest new program initiative: the

¹ The views expressed in this paper represent the opinions of the authors and do not necessarily reflect the opinions of the California Board for Energy Efficiency.

Nonresidential Standard Performance Contract (NSPC) programs.² On a statewide basis, the NSPC programs account for almost 20 percent of the total PGC funds for energy-efficiency programs in 1998.

In the California NSPC program, energy-efficiency service providers (EESP) or customers enter into a contract with the program administrator in which they receive posted prices for delivered energy savings achieved by installing high-efficiency measures at a customer facility or set of facilities. Program rules, requirements, and contract are standardized for all participants. In contrast to traditional utility rebate programs, which pay incentives based only on verification of installation, the NSPC program is pay-for-performance. NSPC payments are tied to verified savings over the first two years based on a pre-specified set of measurement and verification (M&V) protocols. In contrast to demand-side management (DSM) bidding programs, which are only open to a few firms that are selected through a competitive bid process, any EESP or customer can propose a project on a first-come, first-served basis as long as funding is available. Accordingly, an EESP must define specific projects during the application process—before the contract is signed with the program administrator.³

California's NSPC program is significant for several reasons. First, the program concept has been actively supported by the energy services company (ESCO) industry as a model for ratepayer-funded energy-efficiency programs in California and other states. Second, the program currently represents one of the largest ratepayer-funded efforts that will be implemented primarily by ESCOs and other types of EESPs. Third, there are many unanswered questions regarding the ability of this type of program to transform markets for energy-efficiency services.

This paper discusses three aspects of California's NSPC program. First, we describe the origins of the program concept and the role of the ESCO industry in introducing the program in California. Second, we review the rationales for selected aspects of the program's design, which reflects current wisdom in designing programs of this type. Third, we outline the planned evaluation of the program in order to frame larger issues regarding the effectiveness of the NSPC program for transforming markets.⁴

Origins of the Standard Performance Contract Program

The origins of California's NSPC program can be traced to five related events or activities: (1) the rise of non-utility DSM program implementation; (2) Public Service Electric and Gas' (PSE&G) Standard Offer Program in New Jersey; (3) national advocacy for standard offer programs by the National Association of Energy Service Companies (NAESCO); (4) the 1996 California Energy Efficiency Working Group; and (5) the 1998 joint-planning process for California's energy-efficiency programs which involved the utilities, the CBEE, and other stakeholders.

DSM bidding programs, which arose as the demand-side counterparts to supply-side (and as part

² Each utility is also offering a Residential Standard Performance Contract program. Because of space constraints, this paper focuses on the nonresidential programs, which differ from the residential programs in a number of important areas (e.g., site control requirements, pricing, approach to measurement and verification of savings). In addition, there are more differences among the utilities in their Residential SPC program designs, which the CBEE supported, because of the very limited experience in this sector. See Schiller, Rubenstein, Jump (1998).

³ A project is defined as installation of energy-efficiency measures at a project site for which projected energy savings are greater than 200,000 kWh/year. Any number of project sites may be submitted by an EESP or customer if they are similar (e.g., chain stores), contingent on having the same EESP, measure, occupancy schedule, functional use and energy consumption pattern. Up to 10 project sites may be aggregated as a project even if they are dissimilar.

⁴ See also, Schiller, Rubenstein, and Jump (1998) for a parallel discussion of key design features of nonresidential and residential SPC programs in California as well as for additional information on program operation.

of integrated) bidding programs, represented a conscious effort to foster non-utility delivery of DSM program services (Goldman and Kito 1994). Traditionally, utilities designed, marketed, financed, and evaluated DSM programs with in-house staff. Under DSM bidding, marketing and financing (and to a lesser extent evaluation) were turned over to private firms through competitive solicitations. The ESCO industry was a primary beneficiary of these programs. A drawback of these programs was that they typically led ESCOs to bid quantities of savings prior to identification of the customers whose sites would be the ultimate source of these savings. ESCOs were under significant pressure to recruit customers in order to meet their bid commitments.

PSE&G's Standard Offer program tried to address this drawback by posting fixed prices for savings and then paying for them on a first-come, first-serve basis, based on pre-specified M&V procedures (Goldman, Kito, and Moezzi 1995). This method of payment allows ESCOs and other project developers to receive payments on a project-by-project basis, which is more consistent with the ways in which they do business. The standard offer approach was enthusiastically received by the ESCO industry and has been promoted by NAESCO as its preferred model for future ratepayer-funded energy-efficiency programs in state regulatory forums in which electricity industry restructuring is being actively considered (NAESCO 1998). Specifically, NAESCO has argued that public benefit charge funds should be made available to the private sector to implement energy savings activities through standard offer-type programs.

The CPUC created one of the first opportunities for NAESCO to put its advocacy into action. In D.95-12-063, the CPUC began to sketch a radically different path for ratepayer-funded energy-efficiency programs in a restructured electricity industry (CPUC 1995). First, the CPUC proposed "a non-bypassable surcharge, the public goods charge (PGC), on retail sales to fund public goods R&D and energy-efficiency activities." Second, the CPUC concluded that "customer-specific energy-efficiency projects should not require future funding from ratepayers, but should instead rely on market-driven mechanisms." For some observers, funding for standard offer programs in which energy-efficiency services are delivered by non-utility parties was seen as a central element of a transition strategy toward this goal. Third, the CPUC said "we believe the funds collected through a surcharge for energy efficiency should be competitively allocated by an independent, nonprofit organization, but we would like to capture the expertise and knowledge that the utilities have gained in administering DSM programs as we begin the transition."

The final issue on program administration proved to be highly contentious and, coupled with the second issue, led to an alliance among the utilities, the ESCO industry, and some environmental groups. In 1996, the California Energy Commission facilitated the Energy Efficiency Working Group to develop consensus recommendations to the CPUC for implementing the CPUC's policy principles (CEC 1996). Ultimately, consensus was not achieved on all issues and, in the area of program administration, the CEC's report contained a series of proposals. Prominent among these proposals was that of a coalition consisting of the utilities (PG&E, SCE, SDG&E), the ESCOs (CES/Way, Enova Energy, NAESCO, Proven Alternatives, Onsite Energy), and some environmental groups (EDF, NRDC, and Rocky Mountain Institute). They proposed continued utility administration of programs, but creation of a \$210 million standard offer program to be spread over the first three years of the PGC. Later in 1996, the California legislature approved a total of \$870 million in total PGC funding for electric energy-efficiency programs for the four-year period from 1998 to 2001.

In 1997, the CPUC decided that the issue of program administration would be settled through a competitive solicitation in which all potential administrators (e.g., utilities, state agencies, for-profit and not-for-profit companies) would be eligible to bid (CPUC 1997a). It also created the CBEE as an advisory body to make recommendations on this and other aspects of PGC-funded energy-efficiency programs. By mid-1997, when it became clear that a competitive solicitation would not be complete until sometime after

the start of 1998, the CPUC authorized interim administration of 1998 PGC-funded programs by the utilities.⁵ The CPUC also directed the CBEE to initiate a joint-planning process with the utilities and all stakeholders to develop programs for the first nine months of 1998 that would be consistent with the CPUC's policy objectives for PGC-funded energy-efficiency programs. Both the nonresidential and residential standard performance contract programs emerged from this planning process (CPUC 1997b). Statewide funding for the NSPC program is \$33.4 million for the first nine months of 1998 (PG&E - \$11.3 million; SCE - \$14.2 million; and SDG&E - \$8.0 million).⁶

The Design of the Nonresidential Standard Performance Contract Program

California's NSPC program represents a major new approach to promote energy efficiency that was consciously designed to reflect the CPUC's new energy-efficiency policy objectives. According to the CPUC (1997a), "the mission of market transformation is to ultimately privatize the provision of cost-effective energy-efficiency services so that customers seek and obtain these services in the private competitive market." Among other things, "this will require programs that encourage direct interaction and negotiation between private energy-efficiency service providers and customers, building lasting relationships that will extend into the future." The program achieves this end by making an explicit separation between the parties responsible for program administration (i.e., the utilities in 1998) and the parties responsible for program implementation (EESPs and customers). However, in providing funds to private sector market participants, the CPUC also expressed a preference to avoid unnecessary subsidies by stating that public funding should "shift to those programs in the broader public interest...that would not otherwise be provided by the competitive market."

In this section, we describe the underlying rationale for several key elements of the NSPC program, which illustrates how the CPUC's policy considerations influenced the design of the program: (1) the application process; (2) the end-use-specific posted prices; (3) contract term and payment structure; (4) eligible market segments and measures; and (5) market limitations.

The Two-Stage Application Process

An EESP or customer that has a project initially submits a basic project application (BPA) along with a \$250 application fee.⁷ The BPA demonstrates the host customer's intent to proceed with an EESP (i.e., site control), lists proposed measures and estimated annual energy savings, and commits program funding for a period of time if the administrator approves the BPA. EESPs are encouraged to submit projects only when they are ready for immediate development. The EESP then has 90 days for lighting projects and 150 days for all other projects to submit a detailed project application (DPA). The DPA includes a list of project sites, a detailed summary of proposed measures, a project-specific M&V plan (i.e., existing equipment survey, site maps, savings calculation worksheets, M&V approach proposed), a project schedule, a signed customer affidavit, and an installation deposit. The EESP must provide an installation

⁵ At the time, interim administration by the utilities was authorized until September, 1998. In April 1998, upon recommendation by the CBEE, the CPUC extended utility interim administration until the end of 1998.

⁶ The utilities and CBEE have recommended that the CPUC authorize additional program funding of \$9.5 million for the last three months of 1998 for a total of \$42.9 million in 1998..

⁷ In situations where an EESP is the project sponsor, it is expected that there will be a separate agreement between the EESP and host customers, whose terms will be negotiated by the parties.

deposit which is 2.5 to 5 percent of total estimated project payment or a letter of credit. The installation deposit is refunded if the administrator approves installation of the project and the project meets program milestones for installation. After the administrator approves a DPA which includes a pre-installation equipment inspection, the EESP has 30 days to sign a Standard Contract Agreement. After the EESP finishes the project, it must submit a project installation report in which the EESP certifies that the project is installed and operating as per the Agreement.

Several policy considerations and practical constraints led to the development of this application process. First, because funding is limited and is awarded on a first-come, first-serve basis, site control and nominal deposits were established to minimize efforts to “reserve” program funds for projects that were not far along in the development process. Second, projects that include non-lighting measures typically take longer to develop and finalize; thus longer time periods were allowed to meet the DPA milestone before “reserved funding” would be made available to other project sponsors. Third, the administrators want to ensure that projects with approved DPAs actually get developed, in part because administrator’s performance incentives are tied to actual net benefits from the program. Hence, the requirement for 2.5 to 5 percent deposit or letter of credit for estimated incentive payments.

End-Use-Specific Posted Prices for Energy Savings

The utilities initially proposed different posted prices for their SPC programs. The CPUC ultimately endorsed the CBEE’s recommendation that (1) prices for delivered savings would be fixed statewide and (2) the price paid would vary by end use: 7.5 ¢/kWh for lighting, 21 ¢/kWh for HVAC and refrigeration, and 11 ¢/kWh for all other electric measures. Payments are based on average documented savings, paid out over a two-year term (i.e., one year’s worth of savings is paid out over two years).

The CBEE’s recommendation for adopting uniform statewide incentive levels was based on two major considerations: (1) minimize confusion among customers (who might have qualifying facilities in more than one utility service territory); and (2) facilitate transfer of the program to a single administrator (following completion of the competitive solicitation).

The following two factors were central to the CBEE’s recommendations to establish end-use-specific posted prices: (1) stimulate entry and participation by EESPs, yet encourage customers to provide significant cost contribution for projects; and (2) provide higher incentives for end uses where historically it has been more difficult to achieve significant market penetration rates for high-efficiency equipment. In recommending posted prices, the CBEE relied on information provided by the utilities on the share of project cost which would be covered by the incentives for different types of projects (i.e., 25 to 50%), recent data on prices bid by ESCOs in DSM bidding programs, historic rebate levels, and assessments of prices necessary to “drive” the market.

The Two-Year Pay-for-Performance Contract Term with Standardized M&V

The performance term of the contract between the administrator and a project sponsor is two years.⁸ The total incentive amount will be paid to the EESP over a two-year period in three installments. First, 40 percent of the estimated incentive amount is paid after the project is installed and the administrator verifies that it is operating properly. Second, after the EESP’s first year M&V report has been approved,

⁸ In situations where an EESP is the project sponsor, it is expected that the EESP and host customer will also sign a contract, whose terms will be negotiated by the parties.

the administrator “trues up” the incentive payment (which was initially based on estimated savings) to reflect actual savings achieved in year one and distributes an additional 30 percent of the incentives for the project. Third, after the EESP’s second year M&V report has been approved, the administrator will pay 30 percent of the incentive level for the average of the first two years of actual savings. The total of the three payments received by the EESP is determined by the average actual savings over the two one-year M&V periods.

Savings must be verified through reliance on a consensus set of M&V protocols that have been developed with active participation by the ESCO industry. For measures for which no protocol exists, the EESP or customer must reach an agreement with the administrator on an acceptable M&V procedure.

The contract term of two years is relatively short compared to contract terms typically used in DSM bidding programs or PSE&G’s Standard Offer program (5 to 15 years) for two reasons: (1) the CBEE wanted to ensure that the end date of the contracts between administrators and project sponsors did not extend beyond Dec. 2001 (four years) because PGC funds for energy efficiency are not guaranteed after that period; and (2) the contract term had to be sufficiently long to retain the pay-for-performance aspects of the program. For those customers who submit their own projects, the requirement to demonstrate savings is expected to increase their awareness and interest in the principles and practice of monitoring energy savings. Reliance on standard M&V protocols is intended to reduce transaction costs associated with developing reliable savings evaluation techniques.

Eligible Market Segments and Measures, Utility-Sponsored DSM Programs, and Role of the Administrator

Customers in all nonresidential market segments, except new construction, are eligible to participate in the NSPC program. Fuel substitution, self-generation, and cogeneration measures are ineligible to receive funding. Eligible measures must have a minimum lifetime of three years and standard M&V protocols must be available to verify savings. Project sponsors can propose additional measures if they can demonstrate that they are cost-effective in their application and can reach agreement with the administrator on an M&V protocol. The role of the administrator is limited to promoting the program by providing information to customers and EESPs, providing limited training to potential EESPs on program requirements, and developing marketing material to support the program.

One of the most contentious issues in the joint-planning process was the degree of overlap that would be allowed between the NSPC program and the utilities’ other DSM programs (e.g., rebate and audit programs). For example, PG&E initially proposed a number of programs targeted to all nonresidential customers that would, in effect, represent a parallel offering to customers that would also be eligible for participation in the NSPC program. SCE initially proposed to limit the NSPC program to only large customers. The ESCO industry argued that there should be no restrictions on eligible market segments and that the utilities’ offering of parallel programs would create confusion in the market. ESCOs and marketers specifically objected to the utilities’ proposal to continue offering audits. They were concerned that the utility field representatives would use their audit programs to either retain load for the parent utility or possibly promote the utility’s own retail services affiliate. They also argued that the utilities’ offering of audit services would inappropriately compete with private-sector, non-utility delivery of these services.

Ultimately, the CBEE recommended a compromise in which the utilities were allowed to offer programs in parallel to the NSPC program in market segments that might not be well-served by the NSPC programs (e.g., small commercial, industrial process opportunities, agricultural & federal government customers). The CBEE’s recommendation was based in part on balancing concerns that NSPC programs

may not be optimal for transforming all market segments vs. concerns about overlapping programs and minimizing confusion in the market. The CBEE recommended that the utilities rely on private firms to implement programs or deliver “audit” services. The utilities also agreed to limit their energy management services programs to “walk-through” audits, while EESPs would conduct “investment-grade” audits as part of the SPC program.

Market Share and Funding Limitations

Affiliates of the utilities that are operating in the service territory of their host utility are limited to 15 percent of the host utility’s program funds budgeted for incentives (i.e., excluding administrative costs) in the NSPC programs. A single EESP cannot receive more than 30 percent and a single customer cannot receive more than 15 percent of the program funds in each utility’s service territory.

The 15 percent limit on funds available to affiliates of the host utility represented a compromise between those that advocated banning participation by affiliates because of market power concerns (including preferential treatment by the host utility) and those that argued it was unfair and unwise to limit competition and customer choice. Ultimately, the CBEE decided that it was possible to monitor effectively the practices of the utilities because (1) adherence to the NSPC program guidelines and procedures can be easily audited, and (2) the CPUC’s affiliate guidelines and code of conduct are quite strong.

The 30 percent limit on funds available to a single EESP was intended to increase the number of EESPs participating in the program. The CBEE wished to prevent the possibility that one or two well-established or well-positioned EESPs might be able to reserve all of the funds because of the first-come, first-served nature of the program. The 15 percent limit on funds available to a single customer reflected two concerns: (1) PGC funds should be broadly available to all customers; for this reason, California utilities have often established maximum incentives in their customized rebate programs; and (2) PGC funds in the NSPC program are intended as part of a transitional strategy to a future in which customers no longer need ratepayer funds to stimulate adoption of cost-effective energy-efficient technologies and practices.

Will California’s Nonresidential Standard Performance Contract Program Transform the Market?

Taken at face value, it will be impossible to observe definitive measures of the NSPC program’s success (or failure) in meeting the CPUC’s energy-efficiency market transformation policy objective until after the program has been terminated. In view of this, it is far more practical to evaluate progress toward the CPUC’s new policy objective from the standpoint of identifying the conditions or circumstances under which changes to the program should be considered. If, for example, conditions can be observed that suggest the program is no longer needed in specific market segments, then the program can be judged successful. Similarly, if the program is not working in various market segments (e.g., no market response by EESPs or customers, or no market changes), then the administrators and CBEE should consider program design changes or possibly termination if it is concluded that the program is unlikely to succeed. In this final section, we review early program accomplishments and then identify what we believe are some of the most important, currently unanswered questions regarding the ultimate effectiveness of an SPC-type program in transforming the nonresidential retrofit/replacement market for energy-efficiency services. We note that many of these questions are being explored by the CBEE’s recently initiated evaluation of the NSPC program.

The Significance of Program Results to Date

The SPC programs were operational at the end of January 1998; Table 1 summarizes results at the three utilities after approximately four months of operation. We highlight some of the most important initial results and discuss their implications for possible changes to the program. These implications, in turn, provide the basis for our discussion of the merits of the NSPC program in transforming markets.

Table 1. Preliminary Results from California's Nonresidential Standard Performance Contract Program (May 1998)

Utility	9-month Program Budget (M\$)	Program Admin. Budget/ Incentives (M\$)	Funds Committed (M\$)	Proposals from Project Sponsors	Savings by End Use	Registered EESPs
PG&E	11.3	2.2/9.1	9.1	28 Projects: 15 EESP, 13 Customer	48.8 GWh: 19% Lighting 77% HVAC 4% Other	NA
SCE	14.2	0.9/13.3	13.3	74 Projects: 37 EESP, 37 Customer	106.0 GWh: 57% Lighting 26% HVAC 17% Other	NA
SDG&E	7.9	1.5/6.4	4.7	11 Projects: 5 EESP, 6 Customer	25.9 GWh: 3% Lighting 94% HVAC 3% Other	29

The NSPC program has been well-received by ESCOs and customers. The utilities have aggressively promoted the program through workshops targeted at customers and EESPs. The interest level has been quite high: 29 EESPs took advantage of a registration process offered by SDG&E and over 500 customers have attended workshops sponsored by SCE. As of May 1998, SCE and PG&E's programs were fully subscribed, while SDG&E has committed almost 80 percent of program funds. After only four months, it is apparent that the NSPC programs at all three utilities will be over-subscribed and available program funds will be committed prior to the program's scheduled end date on September 30, 1998.

There appears to be no shortage of energy-efficiency opportunities in California's nonresidential sector. More importantly, there appears to be no shortage of customers and EESPs interested in receiving financial and technical assistance through the NSPC program to pursue these opportunities. A key question that is raised for the future is what considerations should influence a decision to expand or decrease funding for this program. Although the CBEE has initiated an evaluation of the program (to be discussed below), it may be sometime before the performance of the program in transforming markets is known. There is likely to be interest from EESPs and customers in continuing and even expanding the program. Without information regarding the extent to which the nonresidential retrofit/replacement market has been adequately transformed, other arguments would have to be made to counter these interests. These arguments could include equity considerations (e.g., need to provide energy-efficiency program

opportunities for all customer classes), or the relative merits of funding non-NSPC programs that could be more effective in similar markets.

The fact that program funds are over-subscribed is also due in part to the size of incentives allowed for individual customers in their projects (i.e., a 15% limit on program funds translates into incentive caps of \$900,000 to \$1,900,000 million per customer among the various utilities). Projects from a relatively small number of large customers account for a significant fraction of available funds. In the future, there will likely be interest in reducing the incentive cap for individual customers. The cost effectiveness of securing energy-efficiency opportunities at the facilities of large customers will have to be traded off against the equity (and cost effectiveness) of securing these opportunities from smaller customers.

Customers have accounted for a larger than expected share of the project proposals: 50 to 60 percent at the three utilities. One of the original expectations for the NSPC program was that it would provide a major stimulus to EESPs, in general, and ESCOs in particular. Thus far, it appears that a sizeable number of larger customers would rather manage the projects themselves as opposed to relying on EESPs to develop projects for them.

We believe that this result reflects two major factors: (1) conscious decisions in the design of the program that have made it easier for customers to participate, and (2) a relatively large base of highly-sophisticated large commercial/industrial (C/I) customers that are quite familiar with participating in various types of utility energy-efficiency programs. In contrast to PSE&G's standard offer program in which customer-sponsored projects accounted for a relatively small share of program funds and savings, the NSPC program features a much shorter contract term, a simplified structure of security deposits and damages, and M&V protocols that are standardized for a broader set of eligible measures and involve lower M&V costs.

However, this result also suggests that the NSPC program may not be "benefitting" ESCOs to the degree originally expected. There are several possible interpretations. One possibility is that some customers may have been dissatisfied with services that they received from ESCOs in the past. In these cases, changes to the program are unlikely to improve customer satisfaction with ESCOs in the future. Another possibility is that some customers are assuming the project developer/overall manager role themselves and are only relying on EESPs for various aspects of project implementation (e.g., design, construction, M&V consulting). These customers may (or may not) have received energy-efficiency services in the past, but in any case have become convinced that the technologies "work," and now have less or no need for EESPs to be involved in project development/implementation. If EESPs have contributed to this state of affairs, it illustrates the potentially catalytic role that EESPs can play in helping educate customers about energy-efficiency opportunities, which may provide a rationale for continued program funding.

Of course, independent of the NSPC program's influence on EESPs, there may be value in continuing the program from the customer's standpoint. For example, if customers did not receive project management services from EESPs previously, they may have been already pre-disposed to manage qualifying energy-efficiency projects on their own. One might then argue that the NSPC program represents a superior alternative to traditional rebates for these customers because it requires customers to place a (potentially new) emphasis on documenting energy savings. In the long run, this design feature may help overcome some customer market barriers to energy-efficiency investments (e.g., lack of knowledge and uncertainty regarding the actual performance of energy-efficiency measures).

The differentiated pricing by end use appears to be working. Over 80 percent of the savings in the PG&E and SDG&E nonresidential SPC program are being obtained from HVAC, refrigeration, and other non-lighting measures (see Table 1). Traditionally, the savings from nonresidential retrofit programs has been dominated by lighting measures (e.g., 60 to 70% of savings from lighting measures in recent years' programs offered by California utilities).

To some extent, this result simply provides further evidence that substantial cost-effective energy-efficiency opportunities remain in California's nonresidential sector. However, it is also a confirmation that a standard offer-type program can be successfully "fine-tuned" to target energy savings by end use. It seems likely that further price discrimination to target other non-lighting end uses will be considered in the future.⁹

Evaluation Issues for the NSPC Program

The CBEE has initiated a comprehensive evaluation of the NSPC program (SCE 1998). The evaluation has three main objectives: 1) producing a baseline for long-term assessment of the program, 2) assessing early market effects, and 3) developing better theories about longer-term market effects to guide future research. Data will be collected from EESPs, customers, existing literature, and program staff. The evaluation was initially designed to focus the search for early market effects on EESPs, reflecting the anticipation that EESPs would be the main participants, thus causing any customer-level effects to have to be mediated through them. However, it is likely that the scope will be expanded, given the larger than expected number of customer-sponsored projects.

We agree that the most critical issue facing the NSPC program is its impact on California's private-sector energy-efficiency industry. While a range of plausible hypotheses can be developed regarding the ultimate effects of the NSPC programs on the market barriers facing customers, none of these is likely to be borne out if the programs do not first lead participating EESPs to change their marketing practices and business characteristics in relatively lasting ways. As noted earlier, the CPUC has stated that PGC funds should be directed toward activities "that would not otherwise be provided by the competitive market." If customers and EESPs would have undertaken these energy-efficiency project investments during the same time period in the absence of the program, then the justification for continuation of existing or expanded funding levels will not be compelling. At a minimum, such an evaluation will be useful in determining what steps (if any) should be taken to modify the program. For example, a finding that proposed projects in the first year of the SPC program are drawn overwhelmingly from market segments where ESCOs have traditionally done performance contracting without ratepayer funds (e.g., schools, universities) could lead to reductions in the posted prices or restrictions on market segments eligible to receive NSPC funds.

Assessing the vibrancy of California's private-sector energy-efficiency industry is complicated by ambiguity about what exactly is the market that the NSPC program seeks to transform. The evaluation should address three broad issues: (1) the program's impact on the market for performance contracting, (2) the program's impact on the growth and expansion of the EESP industry, and (3) the program's impact on reducing customer market barriers to pursuing cost-effective energy-efficiency investments in the nonresidential sector. The focus of the evaluation may depend to some extent on one's definition of the market and market barriers being addressed by the NSPC program.

⁹ Of course, other things being equal, there is no information to support the relative merits of this approach versus alternatives, such as rebate levels that vary by end use, in targeting savings by end use.

Is the NSPC Program stimulating the market for Performance Contracting and should it? At an operational level, the impact of the NSPC program on the market for performance contracting as well as the contractual and business relationships between EESPs and customers would appear to be a logical focus for an evaluation. It is important to note that despite the pay-for-performance payment structure of the program, *there is no requirement that an EESP enter into a performance contract with a customer as a condition of participation in the program.* Thus, at a conceptual level, there are three potential outcomes: (1) customers could enter into performance contracting arrangements with ESCOs that are project sponsors, (2) ESCOs may develop other contracting arrangements with host customers that do not involve any additional pay-for-performance requirements other than that required by the Interim Administrators, and (3) customers can participate directly acting as project sponsors (and who by definition do not enter into a performance contract with themselves!). Thus, the program provides an interesting “market test” of customer interest in performance contracting in a favorable environment (e.g., financial incentives). Finally, we note that although performance contracting is currently an important door-opening marketing strategy for U.S. ESCOs, there is emerging evidence that performance contracting accounts for a much smaller share of overall ESCO revenues and that many ESCOs are moving towards more traditional fee-for-service arrangements with customers (Dayton, Goldman, Pickle 1998).

What is the NSPC programs’ overall impact on the California EESP industry? At a structural level, the role of the program in nurturing the businesses of EESPs, in general, and the ESCO industry as a prominent class of EESPs, in particular, would also appear to be an appropriate focus for evaluation. In its initial evaluation, the CBEE plans to conduct a broad-based survey of EESPs in order to develop a baseline assessment of the EESP industry and develop information on the influence of the NSPC program. One way to think about the SPC program is that the PGC funds effectively “subsidize” the marketing and business development costs of EESPs. Is this a good business investment for ratepayers, one which is in the public interest? Possible ways to get an initial handle on this difficult question include: (1) analyzing whether or not the EESP industry has expanded in a fashion that is sustainable compared to what would have happened in the absence of the program, and (2) assess the “success” of participating EESPs compared to non-participating EESPs in order to determine the incremental effectiveness of the NSPC program.

What is the NSPC programs’ impact on reducing customer market barriers? At bottom, the role of the program in improving the availability, lowering the cost, enhancing the reliability, increasing customer’s awareness and knowledge, increasing the value customers place on, and increasing customer’s ability to acquire energy-efficiency measures and services represents the ultimate focus for evaluation. As is suggested by this list, such an evaluation will require determining the relative strength of the market barriers that nonresidential customers currently face and the role of the NSPC program (through performance contracting, if applicable, or through reliance on participating EESPs, if applicable) in reducing these market barriers.

Confounding factors: The impact of restructuring on EESPs. One of the most vexing set of issues facing evaluators of the California nonresidential SPC program is the influence of changes in the energy-efficiency services market that are occurring as a result of electricity industry restructuring. With the emergence of retail competition, EESPs face a very different and more challenging business environment: significant new entry by well-financed players, increased competition, and tendencies among customers

to postpone energy-related investment decisions during the lengthy transition period because of regulatory and market uncertainties. In this context, one way to think about the NSPC program is that it provides financial incentives that can be used by those retail energy suppliers that want to “sell” energy- efficiency-related products and services in conjunction with commodity supply. These suppliers are competing with other “commodity-oriented” marketers offering “low-cost” power. At a macro level, potential measures of the “success” of an SPC-type program include: (1) successful entry by EESPs, (2) market share for retail suppliers offering energy-efficiency services compared to those that focus on “commodity-only” supply, and (3) penetration rates in various market segments for energy-efficiency “value-added” services and providers. If states could be treated as “experimental laboratories” and all other factors were comparable or controlled for (e.g., retail prices, market and regulatory rules) which of course, they are not, we would compare the retail energy supply industry in California after the transition period with other states where no public purpose funds for energy efficiency were provided, in order to determine whether there were noticeable differences in the markets for and providers of energy-efficiency services and products.

Conclusion

California’s NSPC program is a bold experiment in non-utility delivery of energy efficiency that has been consciously designed to advance the CPUC’s market transformation objectives. It has received broad support from the California utilities, the ESCO industry, and some environmental groups as a model for one type of future ratepayer-funded energy-efficiency programs. Early results suggest that the program will be successful in saving energy cost-effectively and in providing a stimulus to California’s private sector energy-efficiency services industry of which ESCOs are but one, albeit important, part. The extent to which the NSPC program represents the most appropriate way to transform nonresidential retrofit/replacement markets, or rather the inherent limitations of such types of programs in transforming these markets will be the subject of intense debate and investigation over the coming year. We have identified some of what we believe will be the most important issues to address in these debates.

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