Nonresidential Performance Contracting Programs: Assessing the Market Transformation Dimension

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ABSTRACT

This paper assesses market transformation premises underlying several nonresidential efficiency programs that have strongly promoted performance contracting (PC) over other, simpler and more common methods of procuring energy-efficient equipment and services. We refer to these programs as *PC-promoting programs*, of which there are several nationally, including those in California, Colorado, New Jersey, New York, Texas, and Wisconsin. This paper looks across PC-promoting programs at several of the market transformation-related objectives of the programs and assesses whether the objectives are reasonable and likely to be achieved based on the history, economics, and current status of PC markets in the U.S. In this paper we do not assess the comparative value of this program model from a resource acquisition perspective.

This paper leverages both the authors' own experience evaluating PC-promoting programs and a literature review of PC and related programs. We provide a brief overview of ESCOs and the history of PC, analyze PC within the context of energy efficiency services markets, summarize PC-promoting programs and evaluation findings, and present key findings and recommendations for program portfolio managers and policy makers.

We find that the market for PC is mature but limited because of the underlying economics of the business model. We further find that there is limited evidence for the case that PC-promoting programs are likely to sustainably alter the underlying economics of PC and hence its market size. Our findings emphasize the importance of a balanced portfolio of nonresidential programs that does not overly favor the PC model as compared to simpler and more common means of procuring efficiency services. Specific recommendations for achieving the goals underlying PC-promoting and related programs are then provided.

Introduction

This paper summarizes a white paper (Rufo, Prahl, and Sumi 2001) that was recently prepared to articulate the concerns of the authors and others about what was a trend toward nonresidential energy efficiency program portfolios that strongly promote performance contracting (PC) and associated energy service company business (ESCO) models.[1] We refer

[1] Although several of the programs discussed in this program are no longer in operation or have changed, we believe that there was a clear trend in several states from the mid-1990s until around 2000 that was characterized by a dominant role of PC-promoting programs in nonresidential portfolios. These programs dominated nonresidential portfolios in New Jersey for several years, California from 1998 to 2000, and Texas to the present. In addition, the EEP pilot in Wisconsin was the flagship program, being positioned to go statewide as the primary nonresidential incentive program when the white paper upon which this paper is based was written (Summer 2001).

in the paper to these programs as *PC-promoting programs*. Examples of these types of programs include the California Nonresidential Standard Performance Contract (SPC) programs, the Public Service of Colorado Demand-Side Bidding Programs, the New Jersey Standard Offer Programs, the NYSERDA (New York) Energy Services Industry Program (also an SPC program), the TXU Electric Standard Offer Programs, and the Wisconsin Energy Efficiency Performance (EEP) Pilot Program.

This paper *does not* attempt to assess all of the advantages and disadvantages of these programs. In particular, we do not try to assess the value of these programs from a resource acquisition perspective. There are a number of other reports and papers written about the programs by both program designers and evaluators (for example, Goldman et al. 1998, Schiller et al. 1998, and Rufo et al. 1999a). Instead, our goal in this paper is to look across performance contract-promoting programs at their key *market transformation-related* objectives and assess whether these objectives are achievable given the history, underlying economics, and current status of the ESCO and PC markets in the United States. We recognize that not all of these programs have explicit market transformation goals. Some of the programs are or were primarily resource-acquisition oriented in their expressed purpose. Nonetheless, the goal of this paper is to assess the logic and evidence associated with the premise that these programs can permanently transform the PC industry.

Contextual Overview of Performance Contracting, ESCOs, and EESPs

In this section we present a brief overview and history of the energy services industry and the creation and use of PC as a risk mitigation tool.

Defining ESCOs and EESPs

We begin our discussion by discussing two definitions of firms that provide energy efficiency-related products and services: ESCOs and EESPs. The term ESCO has been around for at least 20 years. The term is sometimes loosely used to refer to any company that specializes in delivering energy efficiency products and services. However, the term originally referred to companies whose sales model was based on financing energy efficiency projects and taking on the associated performance risks. This traditional definition is the one that we use in this paper to keep clear the distinction between ESCOs and EESPs.

Because more and more utilities have created and bought ESCO businesses over the past five years, the number of ESCOs nationally could be as many as 200; however, we believe only about 100 are active across the different regions of the country.

Whereas the term ESCO has long been used to refer to specific types of energy efficiency service providers (namely, those who seek to mitigate risks associated with energy efficiency projects), the term EESP (energy-efficiency service provider) is newer and intentionally even broader. EESP refers to companies engaged in providing energy efficiency products and services, regardless of whether the energy efficiency dimension of their products and services is the primary characteristic of their business and regardless of whether they absorb risks associated with energy efficiency projects. The EESP umbrella includes ESCOs, but it also includes contractors, architectural and engineering firms, equipment distributors, product manufacturers, and other entities that provide energy-efficient products

and services directly to end users. There are probably over 100,000 contractors, distributors, and manufacturers delivering energy-efficient products and services in the U.S.[2]

We estimate that ESCOs probably deliver about 25 percent of all energy-efficient products and services in the United States (XENERGY, 1999; Frost & Sullivan, 1999). Obviously, this is a large share of the energy services market given how few ESCOs there are compared to all energy-related service providers in the country (most of whom are small, local contractors as noted above). However, this is still a minority of the total activity and, as discussed later, tends to be concentrated among large and institutional customers.

Distinguishing between these terms is particularly important in the context of public purpose programs that seek to promote PC. It is particularly important within the context of programs that seek to cause non-ESCO EESPs to adopt PC as one of the services offered by their business. In our opinion, when EESPs adopt PC as part of their services and business strategy, by definition, they become ESCOs. The reason the energy industry continues to differentiate the term ESCO from that of other service providers is because the history of the industry shows that firms cannot casually engage in PC as a business sideline – *PC is a specialty that differentiates ESCOs from other EESPs*. The skills required to sell and manage the risks associated with PC are significant. These difficulties are well known throughout the industry. We hypothesize that those who have succeeded in developing successful ESCO companies have done so because of their ability to achieve economies of scale and risk mitigation across projects, obtain access to low-cost financing, build a brand reputation for trust, and minimize sales and transaction costs.[3]

Energy Performance Contracts

Although often referred to as if it were a single contract model, PC is actually an umbrella term for a fairly broad class of contract types that have developed along with the ESCO industry over the last 20 years. What all of the contract types under this umbrella term share is the characteristic that a customer's payment to an ESCO is in some way tied to the amount of energy savings and cost reductions obtained from an energy efficiency project. To understand our view on PC's place in public-purpose energy efficiency program portfolios, it is important to first establish a common understanding of the characteristics of the various types of performance contracts. The two primary types of PC are:

- ***Shared savings contracts***. Shared savings contracts are considered by many to be the original performance contract. Under a shared savings contract, the ESCO provides the resources, including financing, to implement an energy cost reduction project after securing the owner's agreement to "host" the new equipment on the company's premises. In return, the ESCO receives a percentage of the savings generated by the project for a fixed, specified term. In this type of agreement, the ESCO finances the purchase of the equipment and then receives a percentage of the annual savings. Shared shavings have diminished in popularity because most ESCOs and customers prefer the guaranteed savings approach (XENERGY 1999, Frost & Sullivan 1999).

[2] Although most of these firms do not necessarily focus on the energy-efficient dimension of the products they sell and install.
[3] Easton, 1999; Frost & Sullivan, 1999; XENERGY, 2001c.

- ***Guaranteed savings contracts***. By many accounts, guaranteed savings contracts now comprise the majority of energy service agreements being written between ESCOs and customers. Under this mechanism, an ESCO guarantees to the customer that the savings generated by the project will be adequate for the customer to cover the cost of the project. Guaranteed savings contracts are different from shared savings contracts in a critical way: the ESCO does not invest equity dollars in the project. Instead, the customer provides the capital for the project, usually with funds borrowed from a third-party. In short, the customer's balance sheet, not the ESCO's, is used to secure the funds.

Still, the ability to provide funding has historically been critical to an ESCO's success. As noted by Bulluck and Caraghiaur, 2000, the type of financing offered depends on (1) whether the customer wants an obligation off the balance sheet, (2) who is at risk for performance, and (3) whether payment obligation is tied to a specific project.

ESCO Cost Structure

It is well known that the activities that ESCOs and, to a lesser extent, non-ESCO EESPs, take on to add value to customers also add *costs* to the service provider. A successful ESCO project is one in which the ESCO can add more value than they incur in direct costs (equipment and installation) plus transaction costs. Easton 1999 estimated that the transaction costs associated with sales, measurement and verification, and funding ESCO projects accounted for 20 to 40 percent of project costs. It is also important to recognize that non-ESCO EESPs must cover a portion *but not all* of these transaction costs; i.e., they usually do not incur costs for funding and M&V. For the ESCO, depending on the size and nature of the project, these transaction costs (including the ESCO's profit margins) can run as much as 25% to 66% of the total cost of simply designing and implementing the project. Note that there can also be a significant fixed- cost component to PC (for example, for sales, contract negotiations, and legal fees). For the non-ESCO EESP, transaction costs are likely to be half as high. The performance contract provided by the ESCO must thus add at least as much incremental value to the end user as it adds in incremental transaction costs to the ESCO. The additional transaction costs associated with performance contracts must be paid for out of project savings.[4]

Thus, what really drives the economics of performance contracts is that the relatively fixed transaction costs associated with delivering the contract itself (including sales) must be paid for out of project savings. This is generally not difficult to do with large projects that have large savings streams, but it becomes virtually impossible to achieve with small customers from whom only small savings can be found.

[4] In short, ESCOs are no different than other market intermediaries who compete against direct exchange. For further discussion of how intermediation theory applies to the ESCO industry, see Goldstone et al. 2000.

Evolution of the ESCO Industry

To understand the position of PC and ESCOs in the energy efficiency services market today, it is important to appreciate the historical situation from which they emerged. This section draws on several sources to briefly present this context.[5]

The first ESCOs emerged in response to the twin oil crises in the 1970s. However, several factors, including a high-profile SEC investigation, failure of several early shared savings firms, and the too-pervasive belief that many firms inappropriately manipulated savings estimates and other contract terms, quickly combined to create a strongly negative perception of the nascent ESCO industry. One response to these early troubles was the formation of the National Association of Energy Service Companies (NAESCO) in 1981. NAESCO worked to standardize some aspects of the business such as monitoring and verification (M&V) and worked to improve relations with utilities and end users.

Undeterred by the lack of success of pioneer ESCOs in the 1970s, many in the energy industry saw promise in the concept of shared savings and other ESCO-oriented energy efficiency services. As a result, many new ESCOs were formed in the 1980s. In addition, many of these firms were electric utility affiliates. Nonetheless, the 1980s proved to be a difficult decade for ESCOs. Factors making business difficult for ESCOs included: a) complex contracts that made customer negotiations long and difficult, b) lack of banking community acceptance of ESCO contract mechanisms, c) residual end user skepticism and distrust of the industry, and d) competition from local utilities (who viewed the newcomers as threats to their monopoly position in the market). As a result, ESCOs in the 1980s were generally small and unprofitable.

With the advent of electric industry restructuring in the 1990s came a surge in demand for ESCO services, not so much on the part of end users, but more from utilities wanting to build or buy ESCO capabilities. In utility boardrooms throughout the country, industry executives became convinced that energy services focused on understanding and managing customers' energy consumption would be critical to success in a competitive retail environment. Utilities wanting to get into the competitive energy services market were often willing to pay high prices for ESCOs because they wanted to develop ESCO capabilities quickly, even though many ESCOs continued to be unprofitable.

Although industry restructuring fueled ESCO development in the latter half of the 1990s, demand-side management (DSM) also was a critical growth engine throughout the decade, especially, in the early and mid-1990s. Although DSM-bidding and performance-contract promoting programs were developed in the 1990s specifically to support ESCOs, ESCOs had little trouble taking advantage of the utility rebate programs that dominated many regional markets for the years preceding these programs (Easton 1999). In fact, the decline of DSM dollars in the late 1990s was considered a major risk factor for the ESCO industry as it moved into the era of utility restructuring (Frost & Sullivan, 1999).

Another source of funding that fueled ESCO prospects in the late 1990s was the rise of the federal government as the country's largest PC customer. The Federal Energy Management Program (FEMP) and related federal programs and Executive Orders created the largest contract vehicles ever for many ESCOs.

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[5] See, in particular, Bulluck and Caraghiaur, 2000, and Easton, 1999.

Two other related trends that emerged in the late 1990s and continue today include the following:

- ***Rise (and fall) of so-called "Super ESCO."*** Vine, 1998 used the term "Super ESCO" to distinguished firms with an ability to deliver both energy commodity and demand-side services; diverse, but internally standardized, financial tools; and the ability to leverage these skills across geographic areas and sectors. As quickly as many of them rose, others went out of business entirely, including PG&E Energy Services, Edison Source, PSEG Energy Technologies, and EnergyOne (XENERGY 2001b).
- ***Birth of energy asset outsourcing (EAS).*** EAS refers to outsourcing contracts in which an energy supplier owns, operates and maintains the energy infrastructure inside the customer's facility, such as central HVAC, compressed air, lighting, or other major energy using systems. In exchange, the customer is provided with energy services at a price that guarantees a reduction in the total cost of such services over a specified contract period, typically, 10 years or more. Although the concept had been around for many years, Enron Energy Services broke open this market with a series of major outsourcing contracts in 2000 and 2001. However, with the company's demise, it is likely that customer interest in EAS will cool considerably.[6]

What this history indicates is that the ESCO industry is not nascent, nor was it wanting for capital investment from the mid-1990s to 2001.[7]

Position of Performance Contracting in the Broader Nonresidential Energy Efficiency Services Market

In the previous sections, we have tried to establish that PC is a fairly mature but niche product that has been extensively marketed for approximately two decades. Recent research indicates that PC continues to be a niche product within a much larger market for a wide range of energy efficiency services.

Selected Market Characteristics

This section presents a few indicators of energy efficiency market activity in order to establish the position of PC within the general market for energy efficiency products and services. Our observations are based on results from three national surveys conducted by the author in late 1998 (Rufo, Prahl, and Landry 1999b), Spring 2000 (XENERGY 2001a), and December 2000 (XENERGY 2001c). As illustrated in Figure 1, we have consistently found that energy efficiency services are widely marketed to large customers and rarely marketed to small ones. Generally, about two-thirds of the largest customers receive an energy-efficiency services offer every two years. In contrast, only about one in eight small customers receive offers for energy-efficient products or services every two years.

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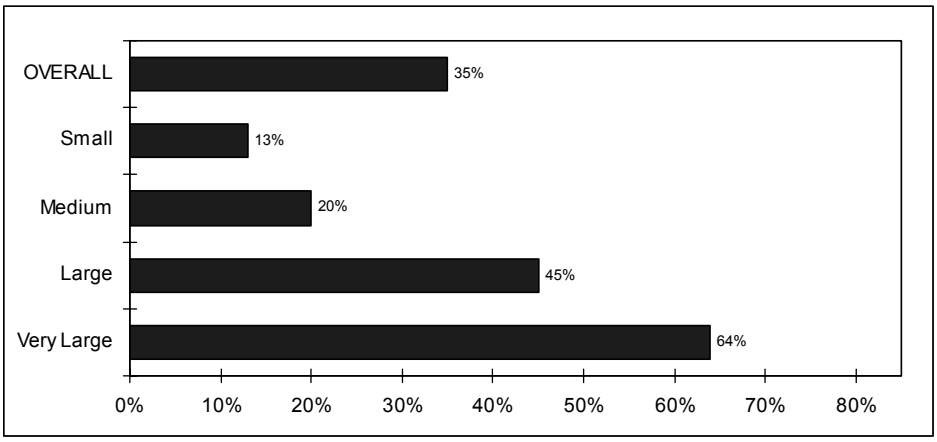
[6] This is because the long-term nature of the contracts requires customers to possess significant confidence in the long-term stability of the service provider. Enron cornered the market on this confidence and may have also destroyed it, at least in the short term.

[7] There is anecdotal evidence that Enron's demise and the current economic downturn may have combined to reduce available capital for and interest in PC firms in the short term.

Figure 1. Portion of National Nonresidential Market Offered Energy Efficiency Services in Previous Two Years (XENERGY 1999)



We have also found that end-user awareness of PC is moderate overall but, again much higher for larger customers. When weighted by energy use, approximately one-third of the national market is aware of PC. However, very large customers are almost seven times more likely to be aware of PC than are the smallest customers.

Despite the moderate level of awareness, about one-fourth of the nonresidential market reports receiving energy PC offers every two years, as shown in Figure 2. As expected, we have found strong differences by sector and customer size. Roughly 40 percent of the largest customers report receiving an offer for a performance contract, when measured over a two-year period, versus on 1 percent of the smallest firms.

Finally, as shown in Figure 3, among those customers that receive a performance contract offer, only a small percentage, roughly 13 percent, typically result in signed agreements. In most cases, offers go no further than an informal "presentation" stage or they result in a formal bid but no contract award. Institutional customers are twice as likely, on average, to sign final performance contracts (XENERGY, 1999 and 2001c). We have calculated the net two-year penetration rate of accepted performance contract offers to be about 2 to 3 percent for all nonresidential customers (i.e., 13 percent of the 43 percent of customers that received offers then signed a contract). Our most recent survey found a 5-percent performance contract penetration rate for customers over 500 kW, again over a two-year period (XENERGY, 2001c).

Market Size Estimates

Unfortunately, few studies have attempted to measure empirically the size, in terms of revenue, of the general market for energy efficiency services or the specific market for PC in the U.S. Of the studies that even discuss the question of total market size, few use statistically based methods. Even fewer studies exist that estimate market size and activity indicators for specific states.

Figure 2. Portion of National Nonresidential Market Approached by Firms Offering Performance Contracting in Previous 2 Years (XENERGY 1999)

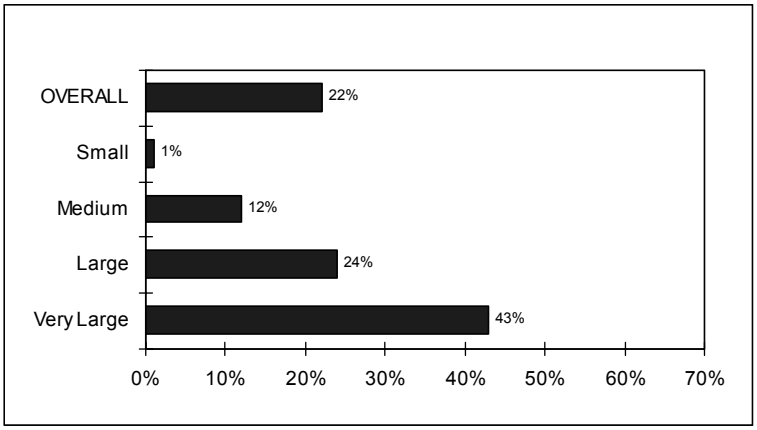
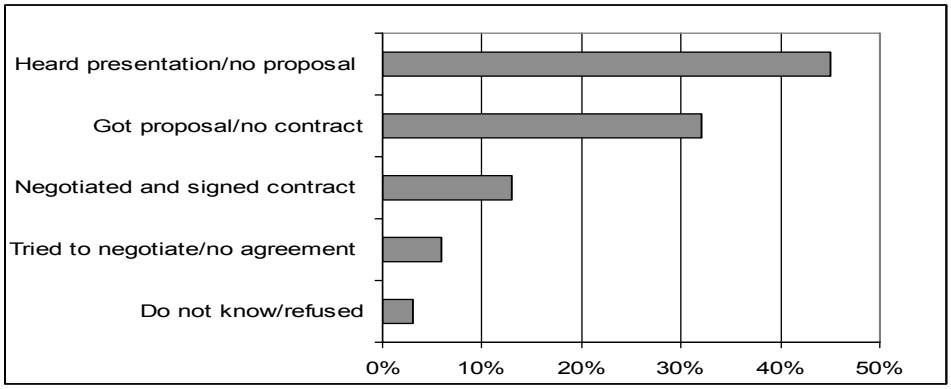


Figure 3. Disposition of Performance Contracting Offers Among National Nonresidential Customers (XENERGY, 1999)



Frost & Sullivan (1999) estimate the size of the North American energy management services market at $23 billion per year. They further estimate that the traditional ESCO industry accounts for less than a quarter of the revenues, or about $5.5 billion. However, we estimate the size of the national PC market at roughly $1 to $2 billion of new contract value per year,[8] which is consistent with the Frost & Sullivan figure because most ESCOs draw a significant share of their revenues from non-performance contracts.[9] We further estimate the size of the total market associated with nonresidential energy efficiency to be $5 to $10 billion, or about 5 times the value of PC.

[8] This estimate was developed by the author for this paper using data from XENERGY, 2001c. It is also consistent with a recent estimate to be presented in Osborn et al. 2002.

[9] For example, California ESCOs report that one-third of their revenues are from performance contracts (XENERGY, 1999).

Thumbnail Summary of Performance Contract-Promoting Programs

This section presents a brief summary of PC-promoting programs around the country. More detailed findings from evaluations conducted of these programs are incorporated into our full white paper and other sources (Rufo, Prahl, and Sumi 2001; XENERGY 2001a; Kushler and Edgar 1999; PA Consulting Group 2001, and GDS 2000).

Current PC-promoting programs are descended from the DSM bidding programs that were popular from 1987 to 1997. However, they differ from these forerunners in a number of significant ways. First, PC-promoting programs attempt to reduce some of the administrative costs and responsibilities that the bidding process imposed on both the ESCOs and the utilities. PC-promoting programs encourage EESPs to market and develop projects and rely less on utility staff as middlemen (Schiller et al. 1998).

Critical to the focus of this paper is the fact that many PC-promoting programs also make a more conscious effort to transform the energy services market than did the older bidding programs. For example, Wisconsin's Energy Efficiency Performance (EEP) pilot tried to introduce PC to EESPs that had not done this type of contracting in the past. California's Standard Performance Contract (SPC) programs have tried to promote PC and stimulate the market for EESP services and M&V. Seven states – California, Colorado, Massachusetts, New Jersey, New York, Texas, and Wisconsin – have had significant PC-promoting programs. While these programs share some characteristics, they have had varying policy objectives. A summary of key objectives associated with each program is presented in Table 1. The California, New York,[10] and Wisconsin programs have had the strongest focus on market transformation (although California has recently shifted back to a resource acquisition focus). The New Jersey and Colorado programs were focused primarily on resource acquisition.

Because most of the PC-promoting programs are fairly new, information on their accomplishments is necessarily somewhat preliminary. However, in a few cases, such as California and New Jersey, the programs were in full-scale operation for several years. Across programs, one can conclude that they generally deliver energy and demand savings at levels sometimes comparable to traditional utility rebate programs. However, as summarized in Table 2 and several key studies (XENERGY 2001a, GDS 2000, PA Consulting 2001, Kushler and Edgar 1999), important market transformation-related limitations have been identified for those PC-promoting programs that have undergone comprehensive evaluation.
The evaluation evidence indicates, fairly consistently, that PC-promoting programs have not been successful to date at engendering significant, sustainable changes in EESP business practices. In California, an already-established EESP and ESCO industry consistently reported that the SPC programs did not affect their business strategies and had only marginal effects on the volume of business they would otherwise have done. In New Jersey, an opposite problem occurred: the high standard-offer prices in the first phase of the program engendered a wave of program-induced resource acquisition that was then followed by an ESCO exodus from the state after prices declined (indicating clearly that the supply-side effects were temporary). In Wisconsin, there was little evidence that non-ESCO EESPs could be sustainably transformed into ESCOs.

[10] Information on the New York program was based on available evaluation information as of mid-2001.

Table 1. Comparisons of Objectives Across PC-Promoting Programs

State	Program Name	Program Objectives
California	Non-Residential SPC Program (1998-1999)	• Create a self-sustaining market for energy efficiency products and services. ➢ *Change the market practices and business characteristics of participating EESPs.* • Reducing customer-related market barriers ➢ *Improve customer confidence in EESPs.* ➢ *Improve customer confidence in savings.* ➢ *Increase penetration of PC.* • Achieve cost-effective energy/demand savings.
Colorado	Public Service of Colorado's DSM Bidding Programs (mid-1990s to present)	Achieve cost-effective, peak period demand savings.
Massachusetts	Boston Edison Integrated Resource Management (IRM) program (1996)	Achieve energy savings, peak reduction, and market transformation.
New Jersey	Standard Offer 1, 2, 3 (1993)	Achieve energy savings, peak reduction, and market transformation.
New York	Energy Services Industry Program (2000)	• Facilitate the development of a strong energy services industry. ➢ *Transform ESCO market in New York.* ➢ *Encourage ESCOs to offer EE to customers along with electric commodity sales.* ➢ *Reduce market barriers: lack of EE awareness in institutional sector, customer risk aversion, and limited access to financial resources.* • Implement cost-effective energy savings.
Texas	TXU Electric TEEM Standard Offer Pilot Programs (2000)	• Have energy efficiency incentive programs available to all customer classes. • Encourage private sector delivery of energy efficiency products and services. • Stimulate investment in energy efficient technologies. • Create a simple and streamlined program process to stimulate strong program participation.
Wisconsin	Energy Efficiency Performance (EEP) Program (1999)	• Encourage national and local EESPs to expand service offerings and market share by pursuing performance-based work with C&I customers. ➢ *Deliver new performance-based EE services* ➢ *Deliver performance-based EE services to new customers or segments.* ➢ *Deliver performance-based EE services through the use of new distribution strategies, marketing channels, or teaming alliances.*

Table 2. Comparisons of Limitations Across PC-Promoting Programs

State - Program	*Initial Evaluation Findings*
California	• No evidence that program led to increase in PC between ESCOs and customers. • Little evidence of changes in EESP business practices (e.g., reductions in transaction costs, increased marketing to small customers). • High level of free-ridership • Many EESPs viewed the M & V requirements of the program to be too onerous, complex, and expensive.
Massachusetts	• Time between RFP release and contract award was quite long (i.e., nearly two years in some cases). • Contract negotiations and review/acceptance of M&V protocols reported to be significant time drain. • Delays in measure installation and the harvesting of contracted savings due to industry restructuring activities, and difficulties experienced by the winning ESCOs in marketing to customers.
New Jersey	• Standard Offer 2 had dramatic fall-off in ESCO participation and widely criticized due to large reduction in price paid for savings. • Standard Offer 2 focused mostly on large lighting projects. • Evaluators found that if the subsidies were to end, the ESCO industry would likely be limited to certain niche markets. • Evaluators concluded that an SPC-type program should continue for large C/I but different approaches needed for other markets.
New York (2000)	• Factors identified from surveys of ESCO as barriers to program success included: (1) hassle associated with understanding PC requirements, (2) getting arrangements approved, and (3) savings uncertainty. • Other barriers identified by evaluators through interviews with ESCOs included: ➢ *need for additional marketing and insufficient market research information;* ➢ *confusion surrounding electric utility industry deregulation;* ➢ *positive state of the New York economy made EE projects less appealing;* ➢ *need for M & V assistance; reduced paperwork and streamlined application processes;* ➢ *need for improved certification programs; and* ➢ *need for better linkage with other program offerings.*
Wisconsin (Focus on Energy Pilot - EEP I)	• Findings to date are based on limited number of case studies: ➢ *The program has had very little impact to-date on sponsor's business practices* ➢ *The program appears to be resulting in limited expansion of the energy efficiency market* ➢ *The program has had difficulty reaching the appropriate level of M&V that protects the customer while not deterring market effects for measures other than lighting and HVAC* ➢ *The program seems to not have been particularly effective as a resource acquisition program* ➢ *There is some evidence that program support functions to vendors should continue*

Finally, many of the available evaluation results point to implementation barriers such as high costs and complexity of required M & V procedures, as well as time-consuming and costly program application procedures. Notably, many programs including those in California, New York, and Wisconsin have made changes in application processing and M&V requirements in response to these and related evaluation and findings.

Key *Market Transformation-Related* Findings

Based on the detailed evaluations conducted by the authors and our review of the literature, we present several findings below. Note again that *the scope of these findings is limited to assessing the hypothesis that PC-promoting programs are likely to transform the market for PC*. Also note that these findings are based on information available as of mid-2001. We encourage authors with alternative findings from more recent PC-promoting programs to present those results in subsequent papers.

Performance contracting is a mature and niche contracting product. Performance contracting has been available for approximately two decades. Performance contracting is a niche contracting product because of two crucial factors: (1) the underlying economics require large projects (due to the associated sales, prospecting, M&V, and other transaction costs); and (2) the use of financing as its defining characteristic limits its appeal to only those large customers that lack easy access to private financing (namely, mostly institutional customers).

PC-promoting programs by definition tend to promote performance contract-based energy efficiency products and services over those procured with fee-for-service contracts. In some cases, PC-promoting programs controlled a majority of public purpose energy efficiency incentive dollars available for nonresidential markets (e.g., California from 1998 to 2000, New Jersey in the mid-1990s, Texas in the late 1990s to the present). *In a market transformation policy context,* PC-promoting programs can only be justified if it can be shown there are market barriers significantly inhibiting the societally optimal amount of PC occurring in the market – as compared to the more common fee-for-service basis for procuring energy-efficient products and services. The evidence for this is weak to date.

The existence of supply-side market barriers to performance-based products and services has not been well established. A key hypothesis of many PC-promoting programs is that there are supply-side market barriers to providing PC. Support for this hypothesis would require evidence that supply-side markets do not recognize where and when customers are demanding performance contracts, are limited in their ability to stimulate demand for performance contracts, or are otherwise restricted in their ability to implement performance contracts. Such supply-side barriers to PC have not been demonstrated by the research conducted to date.

What has been established is that there are significant barriers to delivering PC to small customers and non-institutional customers. However, ***PC-promoting programs have not yet demonstrated that they can ameliorate these barriers in a sustainable way***.

Evaluation results to date consistently show that ***PC-promoting programs are unlikely to produce significant and sustainable changes in the majority of participant EESP business practices***. Programs may help some new or weak ESCOs/EESPs to develop new business strategies or improve their M&V skills. In addition, some programs have

caused a few new companies to successfully enter specific markets, but these have tended to be exceptions.

To date, no PC-promoting program has demonstrated how it has produced significantly reduced transaction costs for performance contracts and EESP/ESCOs. Without a sustainable reduction in transaction costs for the majority of EESP/ESCO participants in such programs, PC will remain in its current market niche (e.g., outside of the small/medium customer and non-institutional markets). This conclusion is based both on the historical record and an assessment of the underlying economics of the PC business model.

Market Transformation-Related Conclusions and Recommendations

As were our findings, *the scope of our conclusions is limited to assessing the hypothesis that PC-promoting programs are likely to transform the market for PC*. Note also that our focus in these conclusions is on the PC-promoting aspect of programs. Length constraints of this paper preclude discussion of the relative pros and cons of SPC-type programs and other incentive programs (e.g., prescriptive and custom rebates) from an overall energy efficiency policy perspective.

Customers and EESPs should have multiple programmatic choices on how they procure energy-efficient products and services. The majority of programs within any portfolio should support increases in energy efficiency *without preference to the type of contract executed* between the customer and the EESP. EESPs that want to test new business models can be supported with *small* incubation-type programs. We believe public purpose programs do have a role in demonstrating savings from newer and more complex measures where performance uncertainty is genuinely high for many customers. Nonetheless, ***incentive funds to promote PC should be limited to a minority portion of total incentive funds*** available for nonresidential programs. PC-promoting programs should complement rather than preclude the larger fee-for-service contract market for energy-efficient products and services.

Although a portion of resources in any program portfolio ***should be available to help EESPs to improve their business skills****;* the evidence strongly suggests that ***focusing on*** promoting ***a single business model*** such as PC ***is unproductively limiting***. Less restrictive EESP business support efforts might include customer education, customer referrals and lead generation, sales and marketing training, assistance in business plan development, development and provision of marketing support materials, and training in the analysis and delivery of cutting edge energy-efficiency measures.

Finally***, recent energy service industry trends illustrate the inherent difficulty in picking ESCO-related business models to promote***. The market shift from shared savings to guaranteed savings contracts, the emergence of energy asset outsourcing, the increase in EESP/ESCO mergers and acquisitions, and the demise of Enron Energy Services illustrate how quickly the supply-side of the efficiency services market can change. This underscores the problem faced when attempts are made to promote specific private sector business models to achieve energy-efficiency policy goals. Doing so in a productive way that stays ahead of naturally occurring market trends is extremely difficult in practice.

Postscript: Is a New Name Needed?

PC-promoting programs have had a number of objectives and rationales underlying them in their brief but significant history as key elements of public purpose portfolios. This paper has focused on one of the critical underlying rationales for several of the programs' features: transformation of ESCOs and their markets. When this laudable goal has been broken into constituent logical indicators of hypothesized market effects, evaluation efforts to date have found little evidence that such transformation is occurring or poised to occur.

Despite this, we do not mean to imply by our conclusions that SPC programs, which we have argued share a *PC-promoting* aspect, have no place in current portfolios. These programs have generally taken over the niche previously held by custom rebate programs. From a resource acquisition perspective, these programs appear to be holding their own compared to their predecessors. In addition, changes to many SPC programs driven by evaluation findings have led to changes in program design that have increased participation and satisfaction. At the same time, the revised programs sometimes look more like the custom rebate programs they supplanted than the DSM-bidding programs from which they emerged. Whether these hybrid approaches provide the best of both models remains an interesting question for further research and debate.

If these programs continue to reduce their emphasis on promoting PC and concomitant intensive and often expensive M&V, a new program moniker reflecting their core objective may be an appropriate and helpful way to focus the efficiency community, EESPs, and end users on what the latest of these programs does best.

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