It's a Jungle out There: A Preliminary Attempt to Understand the Opportunities and Competition for Ecological Niches among ESCOs

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ABSTRACT

Over the past three decades, demand-side management (DSM) programs provided a hothouse environment for the formation and growth of energy service companies (ESCOs). The DSM programs facilitated market entry, supported early capacity development, and provided guaranteed markets and capital to a particular business approach, the Project Model. However, while these supportive efforts may have nourished ESCOs focused on individual, tightly defined, equipment-centered projects, they may have ignored the alternative, Relationship Model. In turn, this emphasis may leave those pursuing the Project Model unprepared for a more competitive market environment.

In a series of 39 depth interviews with representatives of ESCOs, we found what appears to be a growing number of energy service companies that are pursuing business models other than the Project Model. This paper is an attempt to describe the critical dimensions along which the relevant business models differ. For heuristic purposes, we contrast the Project and the Relationship Models with respect to marketing objectives, focus on technologies and services, product offerings, the use of audits as a marketing tool, customer targets, and financing sources. In closing, we suggest that policy makers consider both models as they develop public benefits programs to support the transition to profitable, self-sustaining ESCOs.

Background

As regulatory-driven utility efficiency programs have disappeared from the landscape, many observers of the energy industry have suggested that the role of the utilities may be taken over by energy service companies (ESCOs). Underlying this suggestion is the belief that energy-efficiency services are economically justifiable for many customers and—accordingly—that providing those services can be profitable to the companies that offer them, in many if not all markets.

Advocates of the "market transformation" paradigm offer a potentially useful perspective. If energy-efficiency services are not currently available in particular markets, that lack may reflect the presence of certain market barriers. These barriers may include the unavailability of financing for providing energy-efficiency services, customers' lack of familiarity with procedures and providers in the energy service industry, and the hassle associated with developing the contracts. However, the argument continues, such barriers may be overcome or removed through well-designed market interventions. Therefore, legislators or regulators should consider interventions that would overcome identified barriers and lead to a vibrant, sustainable ESCO industry. One example of an appropriate intervention might include subsidies to reduce financial burdens on early market entrants (e.g., support for standard performance contracts in several states). A second might be assistance with customer education (e.g., the efforts of the California Energy Commission and the New York State Energy

Research and Development Authority). A third might involve the removal of certain transaction costs (e.g., the Energy Fitness Program of the federal government).

The underlying rationale regarding the potential contributions of ESCOs to energy efficiency and the possible barriers to their success applies across the U.S. and Canada. However, ESCO activity to date varies considerably from region to region and from state to state within regions. The environment in Wisconsin, for example, is challenging for ESCOs. Wisconsin utility Demand Side Management (DSM) activities in the early 1990s were among the most active in the U.S. Consequently, much of the "low hanging fruit" of profitable energy projects may have already been picked. Furthermore, energy prices are relatively low and, with exceptions for small corners of the state, prospective customers are not very concentrated. These factors may partially explain the relatively low activity of ESCOs in Wisconsin to date. In contrast, ESCO activity in New York State has been relatively robust. The contrast suggests that, in order to formulate and implement effective interventions, policymakers need to understand the factors that make particular niches more or less attractive as well as the overall environment in which ESCOs are operating. Accordingly, the Energy Center of Wisconsin and the New York State Energy Research and Development Authority sponsored this assessment of the current ESCO market and projected trends.

Approach

The energy services market can be examined from several perspectives. For example, in keeping with the dominant approach to "market transformation," we could attempt to determine the likelihood that certain energy-saving technologies or services will become standard through the activities of ESCOs (e.g., the use of electronic ballasts). A second approach would be to assess the likelihood that particular sectors or segments of the economy (e.g., the multifamily sector or the office segment) will achieve energy efficiency because of ESCO initiatives.

Each of these perspectives can provide value and important insights for analysts and policy makers. For example, the technology/services-focused approach helps to distinguish equipment and services that do not appear to require extensive support once they have gained a foothold (e.g., LED exit lights) from those that may (e.g., 15 SEER packaged cooling units). Similarly, the target market analysis helps to spotlight those sectors and segments that are least likely to offer profits to ESCOs—and thus, least likely to attract their initiatives.

In our opinion, a third approach is most likely to be of value at this time; in part, because it tends to incorporate the other two perspectives. This third approach entails characterizing the nature of the ESCOs themselves, their view of the markets and opportunities open to them, the challenges they face, and the policies that may help them flourish in the changing environment. As will be seen later in this report, the discussion of these issues necessarily entails consideration of the technologies and services ESCOs offer as well as the sectors and segments they target.

The guiding metaphor of our approach lies in the recognition that the changing environment of the utility industry requires us to adopt an organic view of the marketplace. Accordingly, we look at energy-efficiency services as functions to be performed (e.g., absorbing investment risk) rather than the unchangeable activities of fixed market actors. Changes in the environment foster changes in its inhabitants and the functions they perform. New companies may thrive by entering the environment to provide specific functions. Older companies may become more competitive by taking on some functions formerly left to others—or by sloughing off certain functions that others may better fulfill in the changed landscape of a more competitive industry.

Our approach is to characterize the functions that are being performed, the actors seeking to prosper in the current environment, the growth opportunities and threats to survival posed by

anticipated changes in the environment, and likely coping strategies. Given this outlook, our definition of ESCOs is a broad one. It accommodates companies traditionally labeled as such, newer entities created as unregulated subsidiaries of utilities, service companies of large property owners (e.g., Marriott), and relevant activities of both large market actors (e.g., Honeywell) and small (e.g., risk-absorbing local A/E firms).[1] Within this ecosystem, there are many types of players: all the traditional market actors, such as designers, distributors and contractors, as well as different types of energy services firms that implement or develop projects involving direct energy savings.

It is likely that the different types of companies seek to exploit different niches; e.g., one of the differentiating characteristics of the various companies is likely to be their approach to business development. Some energy-services firms may proactively develop projects, while others usually respond to formal requests for bids developed by others (e.g., government agencies). One likely consequence of such differences is that the various types of companies are likely to react in diverse ways to changes in the business environment, with differing implications for future energy-efficiency markets.

Our research was designed to clarify the business orientations of each relevant segment as well as options that may affect their level of interest and effort in the energy efficiency arena. We believe that this information will assist policy makers to develop, examine, and implement appropriate strategies vis à vis ESCOs in their states.

Methods

To collect the necessary information, we first reviewed several background documents, including California Energy Commission (1995; 1997a, 1997b), Frost & Sullivan (1997), NYSERDA (1998), and State of New York (1996). We also studied statistical series (e.g., U.S. and state electricity consumption, by sector; density of commercial accounts, by state). Together, these data provide a useful background picture of the total market potential for ESCO activities in the commercial and industrial sectors on a state-by-state basis.

We then conducted interviews with 39 representatives of ESCOs in Wisconsin, New York, and elsewhere throughout the country.[2] The underlying universe of potential interviews was developed from a combination of an earlier compendium of ESCOs developed by Barakat & Chamberlin, NAESCO, Dun & Bradstreet, the Yellow Pages, and word-of-mouth referrals. Interviews lasted between 30 and 90 minutes, depending upon the schedule of the respondent. Our discussion guide was developed through several iterations among members of the contractor team and the project manager, with final approval by the Center's oversight committee. As the team learned more about the market, the focus of the guide was revised accordingly.

Overall, the ESCO interviews were designed to characterize the nature of the ESCOs themselves, their view of the markets and opportunities open to them, the challenges they face, and the policies that may help them flourish in the changing environment. The discussion of these issues necessarily entails consideration of the technologies and services ESCOs offer as well as the sectors and segments they target. The research was also designed to clarify the business orientations of each relevant ESCO segment as well as options that may affect their level of interest and effort in the energy

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[1] We omit, however, companies such as pure power marketers that offer no energy-efficiency services as part of their options package.

[2] Nine additional interviews covered financial backers of energy-efficiency services and ESCOs internal to large corporations.

efficiency arena. Interviews with other market actors (e.g., representatives of financial institutions) covered the same issues, but from the perspectives of those respondents.

The analysis of the interviews embodied the team's ecological approach to the understanding of the market. It included consideration of the following issues:

- The functions that ESCOs perform
- The risks they encounter
- The types of actors seeking to prosper in the current market
- Growth opportunities and threats to survival posed by anticipated changes in the environment
- Likely coping strategies.

Findings—A Heuristic Model

This report focuses on only two aspects of our research program. Specifically, we use this opportunity, first, to characterize the functions performed by ESCOs and the risks they face. We then describe differing species of ESCOs. We hasten to add that these are genotypes, abstracted from our analysis of the specific companies we encountered during our interviews (the phenotypes) [3]. We have constructed these portraits to allow comparisons along several dimensions of behavior. We believe that the contrasts shed light on the new business models that are emerging as restructuring, competition, mergers, and acquisitions alter the environment in which energy services providers must operate. In the final section of this paper, we will explore some implications of the emerging diversity among ESCOs.

ESCO Functions and Risks

For this research, we defined ESCOs as those companies whose activities lead directly to increased energy efficiency—through changes in equipment, design, or operations and maintenance practices. The most familiar of these organizations are those with business models (i.e., the ways firms earn their profits) that place energy-efficiency improvements at the center of their offerings (e.g., efficient system designs or upgrades to efficient equipment). Various types of players that add value by providing related services or reducing barriers to upgrades (e.g., audit, design, installation, financing, and education) are also included. In contrast, some other activities are less important for our purposes, such as energy brokering or utility billing outsourcing, since they do not readily lead either directly to increased energy efficiency or to reduced barriers to efficiency. More specifically, ESCOs provide value by relieving their customers of having to carry out some or all of the critical functions of energy-efficiency projects, shown in Table 1.[4]

Each of these functions entails costs and risks to the host of the energy-efficiency activity. These include several problems familiar to readers of the well-known scoping study (Eto, Prahl &

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[3] In setting forth these genotypes, we readily acknowledge that they are simplifications, developed for heuristic value rather than to characterize specific companies. For example we note that most ESCOs will assert their interest in building long-term relationships with their customers. Nonetheless, we find that ESCOs differ considerably in the degree to which their marketing strategies are designed to create, maintain, and leverage such relationships and it is these differences we emphasize.

[4] Note that, with the possible exception of the Prospecting function, internal champions or departments have to perform these functions just as an outside vendor does. For example, Packaging and Closing requires no less negotiation among departments and agreements about the allocation of risks and benefit than would an agreement with an external provider. The only difference is likely to lie in the degree to which the agreements and the transaction costs involved are made explicit.

Schlegel, 1996), such as performance uncertainties, hassle costs, and transaction costs. By carrying out one or more of the functions listed, ESCOs assume and manage those costs and risks that energy users cannot assume as well or as cheaply. In addition, they allow customers who would prefer to focus on their core business to avoid investing in those activities even if they are capable of doing so.

The context within which ESCOs operate is thus defined, in part, by the functions different sets of potential customers are willing to outsource. For example, national accounts and industrial firms tend to be less willing to outsource the Funding function than smaller companies. Accordingly, ESCOs that focus their offerings on their ability to identify and develop Funding packages are less likely to thrive in that niche.

Table 1. Functions Performed in Energy-Efficiency Projects

Function	Definition
Prospecting	Identifying, and making contact with potential customers for the services or the energy-efficiency opportunities offered
Project Identification	Screening potential opportunities to determine which, if any, are feasible and cost-effective
Funding	Finding and putting into place sources to support the project
Packaging and Closing	Putting together and negotiating a deal that attracts capital to the effort, apportions the risks, and allocates the stream of benefits in a mutually satisfactory way
Design Engineering and Specification	Creating the plans and specifying the costs, equipment, etc.
Construction and Implementation	Obtaining the contractors to install and implement the measures; supervising, inspecting, and commissioning their work
Management and Verification	Tracking energy consumption and costs to compare against the plans and targets; assuring the reliability of the results

The preferred strategies of different ESCOs also determine their ability to adapt to the environment. For example, energy services providers differ in the functions they can best execute in a profitable fashion, and in the risk-reducing and risk management strategies they favor to reduce their own perils (e.g., sales risk, project cost risk, performance risk, and contractual risk). To illustrate, some ESCOs may develop expertise in the Verification function, which tends to be of great importance in the government market, while others tend to do little in that area. The next section of this report focuses on differences among ESCOs in their strategies and the niches they seek to exploit.

Overall Differences among Species

Much of the discussion in the energy-efficiency community seems to assume that performance contracting, focused on very specific projects, is now the natural way of life for ESCOs—a single evolutionary path from the shared savings contracts that were prevalent in earlier years. In this generic model, an ESCO first performs an audit for the customer and identifies areas in which energy savings

can be achieved (largely in terms of more efficient equipment or controls). Based on its estimate of the savings to be achieved—a large portion of which it guarantees—the ESCO then negotiates a contract under which it will replace the customer's existing equipment without the customer having to invest up-front. Instead, the ESCO is reimbursed and receives its profit as the guaranteed savings are achieved.

These ***"Performance Contractors"*** can be described as follows: They have evolved largely under the ægis of DSM and public sector performance contracting programs. Their sales forces are geared heavily toward anticipating and responding quickly and cost-effectively to RFPs in competitive bidding situations. They have established sales offices in states where DSM relied heavily on demand-side bidding and have well-developed processes for costing projects and assessing likely returns from energy and demand savings.

This group appears to be relatively numerous. However, other types of ESCOs are also in the market. They serve customers whose needs are not well-addressed by contracts tied to performance on specific, limited projects and who require skills and products that are not consistent with those offered by these contractors. Overall, we have identified four other species, as described below.

- ***Hardwares***—These companies entered the energy services business as an adjunct to selling end-use equipment, systems, or controls. Companies such as Honeywell, Johnson Controls, and Landis & Staefa fit this mold, joined more recently by Trane, Carrier, and Viron (York). They found an opportunity both to broaden their core business and to insure that their equipment is specified in proposals of all types.
- ***Energy Partners***—These companies stress a portfolio of services that are consistent with the long-term energy and operations goals of the customer. The relationship is deep, strong, and flexible enough to react to changing circumstances. While reducing energy consumption is often considered secondary to improving the company's overall operations, the potential for achieving energy savings is very high due to the depth of understanding of those operations.
- ***Operations and Maintenance Providers***—Organizations offering these services, typically for a fixed fee, have a strong incentive to reduce energy consumption along with other operational expenses. The companies that outsource these functions believe it is in their interest to do so (lower cost or higher quality, with no competitive disadvantages).

  A variation of this model is one in which the third party owns the asset and sells the output–heated or chilled water, steam, compressed air, etc.–to the end-user, under contract. The new asset owner has a strong incentive to reduce costs, including energy-related costs (related to both demand and supply). Johnson Controls has a major business unit that uses this model.
- ***Supply/Comprehensive Solution Providers***—Some energy services providers seek to take on all functions related to energy purchase and consumption including, for example, supplying energy, consolidating bills for purchase leverage and control, and reducing demand through performance contracts or other types of energy efficiency projects. Because certain goals can be in conflict (energy supply vs. reduced energy consumption) there is inherent potential for conflict between the end-user and the solution provider. Companies such as Enron are attempting to provide comprehensive energy solutions.

For heuristic purposes, and at the risk of oversimplifying the true ecology for this report, we group these five species into two broader genera, for the reasons discussed below. We group the first two (Performance Contractors and Hardwares) as *Project-Oriented Contractors*. We also might refer

to them as *Traditionals*, because they are following a model that has been particularly successful in the past. We group those companies following what appears to be a new business model (Energy Partners, Operations and Maintenance Providers, and Supply/Comprehensive Solution Providers) as *Relationship-Oriented Contractors*.

Briefly, Relationship-Oriented Contractors seek extensive, long-term relationships with their clients, rather than limited, specific projects. They conduct whatever energy-related activities are required, including equipment replacement, but also consolidation of energy bills, emergency repairs, etc. Although they absorb financial risk on behalf of their clients, it is often in the form of direct investment or partnering activities, rather than in the form of loans to be repaid.[5]

As suggested, these two genera—Project-Oriented Contractors (POCs) and Relationship-Oriented Contractors (ROCs), as well as the various species of each—exist because their environment offers different types of potential customers. Before discussing the environment and recent changes wrought by deregulation, however, we will elaborate some of the differentiating characteristics of the genera.

Selected Genus Characteristics

We noted above that the broadest difference between POCs and ROCs appears to lie in their objectives—an orientation toward selling projects vs. long-term relationships. Our research suggests that ESCOs differ from one another along the following additional dimensions.

- ***Technologies and services***: Focusing on specific equipment vs. addressing the customer's business; implications for the importance of audits
- ***Products***: Standardized vs. customized
- ***Role of Audits***: Initial no-cost audits are an important tool for some ESCOs, but not all
- ***Project size***
- ***Targets***: The MUSH market (municipalities, universities, schools, and hospitals) vs. other commercial customers vs. industrial customers
- ***Responsiveness to RFPs***: Proactive vs. reactive; willingness to engage in open bidding processes
- ***Financing sources***: Client funds vs. savings achieved vs. third parties vs. ESCO partnering

Table 2 summarizes characteristic tendencies of each idealized species.

Table 2. Selected Characteristics of Idealized ESCO Genera

Characteristic	Idealized ESCO Genera	
	Project-Oriented Contractors (POCs)	**Relationship-Oriented Contractors (ROCs)**
Objectives	Project sales	Long-term relationships, partnering
Technologies and services	Technology focused; audits an important tool	Process-focused
Products	Standardized	Customized
Audits	Important up-front tool	Limited application and value
Targets	MUSH market	Industrials, National accounts
Financing sources	Third party	ESCO funds

[5] We reiterate that the groups described are idealized genotypes.

Having already discussed differences in objectives, we will now briefly consider each of the remaining characteristics.

Technologies and services. The majority of the ESCOs we interviewed—POCs—describe their offerings in terms familiar to energy-efficiency advocates who have experienced DSM programs and those who are designing the majority of market transformation efforts. That is, the ESCO representatives talk about their efforts to improve energy efficiency through improvements in HVAC equipment and controls; motors, variable frequency drives, and controls; lighting; and other common technologies.

Perhaps the most important point many of these respondents make is that ESCOs now look at a broad array of technologies, as contrasted with the early 1990s when most focused strictly on opportunities in lighting. It is not that all the opportunities for lighting savings have already been achieved (although many have). It is, rather, that the relatively fast payback available from lighting improvements can be used to finance the purchase of other efficient equipment with longer paybacks. Thus, through the packaging of the different project components, they can help their clients achieve "infrastructure renewal" with off-balance sheet financing.

In contrast, some of the ESCOs we interviewed—the ROCs—make a point of arguing that they see little interest or value to inventorying the energy-consuming equipment of their clients and determining the energy expenditures that could be saved through upgrades. Rather, they contend, their value to clients lies in their understanding the client's business and processes in order to determine where costs can be squeezed out. If this involves upgrading equipment, that is what they will recommend. However, that is not the only type of solution they may offer (e.g., efficiencies may lie in reconfiguring the flow of materials through an assembly plant). Moreover, equipment upgrades do not necessarily save absolute amounts of energy (e.g., they might lower per unit costs, but increase throughput). In other words, ROCs tend to begin with an analysis of the customer's entire operation. They will then offer improvements from a systems perspective, including—but not limited to—energy efficient equipment or processes.

Products. Some POCs maintain very large organizations with dozens or even scores of field sales offices. Those companies tend to provide a limited number of offerings to their clients. Their standard products can be explained and sold by a broad and widely dispersed sales force. Moreover, they can be replicated in different customer venues with a degree of quality that can be monitored and controlled by systematic design, oversight, and review from a central location.

In contrast, ROCs are generally smaller and provide customized solutions to their customers. Their personnel tend to be more senior and more independent.

Audits. Given the focus on equipment and the emphasis on standard products, preliminary audits are an important tool for POCs. By offering an audit to the customer at no cost, the POC can estimate the value of the work to be done, both as a marketing tool and as a gauge of the profit potential from signing up that customer. While the audit also constitutes a moving up of project costs before obtaining commitment, it is nonetheless relatively low cost and an important marketing tool.

ROCs tend not to emphasize up-front audits. First, in seeking long-term relationships with their clients, ROCs tend to focus their initial efforts on demonstrating their understanding of the client's business, its competition, and its critical processes. Accordingly, there is a de-emphasis of equipment per se. Second, ROCs are more likely to seek commitment from the customer prior to undertaking work—reducing the value of the audit as a marketing tool. (At least some ROCs offer a straight money-back guarantee on their work as a replacement for whatever benefits the audit might have as a trust-builder.)

Project size. As would be expected because of differences in customization and the level of personnel involved, the products of ROCs tend to require greater initial investment than those of POCs. (This greater initial investment should not be confused with the cost-effectiveness or the payback associated with the project.)

Targets. Most POCs we interviewed focus on the MUSH market or some portion of that market. Some work almost exclusively in K-12 schools, at least within a particular region or state. Other ESCOs address and are known for their strengths in the hospital market, while still others are particularly strong in working with government entities. To some extent, these specializations may reflect technical or institutional knowledge gained in early projects. They may also reflect sensitivity to the particular needs of different segments of the market. However, at least some of the focus on limited niches appears to reflect the joint operation of two factors. The first of these is happenstance and networking (it stems from having completed an early project in one segment and exploiting that experience with others in that segment). The second is avoidance of competition with other ESCOs who may be strong in the other segments (since there is more than enough work for all at this time).

The ESCOs who focus on the MUSH market do so for a number of reasons. Among these are infrastructure needs of those customers coupled with resource limitations, the relatively centralized decision-making structures involved, the relative absence of internal expertise, and the lack of requirements for specialized knowledge of business processes.

However, not all ESCOs target the MUSH market. ROCs often address companies in the industrial sector, for example. Moreover, some are now beginning to address the retail sector—particularly those that can be characterized as national accounts. The ESCOs involved characterize themselves as well positioned to work with customers who have internal expertise and require specialized knowledge of their processes. They agree, however, that they prefer to work with companies where the decision-making structure can be identified and reached with relative ease. (This result reflects the universal report by the ESCOs interviewed that transaction costs are the greatest problem they face in successfully selling their services.)

Responsiveness to RFPs. Both the POCs and the ROCs with whom we spoke are proactive companies that strive to secure assignments through networking, cold calls, and other active marketing techniques. Nonetheless, their different internal structures and customer bases cause them to differ in their need for and reactions to RFPs.

As indicated above, POCs obtain much of their business from the MUSH market. Organizations that constitute this market are often required by public policy or similar concerns to advertise publicly and select contractors through an open bidding process. Moreover, given the relatively standardized nature of the services that such entities seek and the type of ESCO staff involved, the cost of bidding is generally acceptable for POCs.[6]

Historically, a number of POCs entered the market to take advantage of DSM-driven projects, which were usually awarded through an RFP process. As noted in discussing the background of this project, some concern exists that a number of these firms remain dependent on the availability of public funds. It remains to be seen whether many have secured enough of a niche in the MUSH market to be self-sustaining without that resource and whether some additional funding will enable the remainder to achieve that transition.

In contrast, ROCs tend to work for companies that are more interested in having a project shaped to the specific needs of the organization, as part of a sole-source relationship. Moreover, the cost of bidding for work on the part of the core staff of ROCs as well as the estimated cost of their

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[6] Of course, a Performance Contractor will not necessarily bid on all RFPs received. Rather, they are likely to select those that offer a reasonable probability of success, based on previous experience and an assessment of the likely competition.

services is quite high. These factors help explain their desire to limit transaction costs (including "dry holes") related to competing in an RFP-dominated market with its emphasis on price.

Financing sources. One of the defining characteristics of ESCOs is that they tend to relieve their customers of the risks associated with improving energy operations. Among those risks, perhaps the one most often assumed historically by ESCOs is the financing of relevant improvements. In the paradigmatic performance contract, the ESCO finances the improvements (whether through its own internal sources or through a third party) and recovers its costs through collecting a portion of the savings experienced by the customer. Accordingly, the cost of capital is a critical determinant of an ESCO's success (assuming equal facility and expertise in identifying savings opportunities and estimating paybacks). For this reason, larger, older, better-capitalized ESCOs are in a better position to succeed in an unsubsidized market in that their ability to raise funds at favorable interest rates is superior to that of smaller companies with less of a track record.[7] (This may be one of the factors helping drive the current efforts toward consolidation among many POCs.)

As the suggested name of the species indicates, ROCs are likely to seek a partnership position with their customers in regard to energy operations. To do this, they often bring to the table capital from their parent corporation or a financing subsidiary. As one respondent suggested, an analogy with the truck leasing industry may be useful: The leasing company allows a shipper to concentrate upon its core business functions and forget about the hassles of buying, running, and maintaining trucks. Just so, ROCs are prepared to absorb all the associated risks (financing, operational, and performance) while giving the customer free and unfettered beneficial access to the energy required by the business.

Niches in a Changing Environment

The ecological model suggests that the different species of ESCOs are adapting to changes in the opportunities offered by the environment. Some of those opportunities reflect the broader economy and others, the specific transformations taking place in the utility industry.

At the broadest level, opportunities are determined by the macroeconomy, the history of investment in plant, and the willingness and ability of management to focus on facilities. In many instances, the public infrastructure—i.e., the MUSH market in particular—has been allowed to decay over at least the last decade. Moreover, management has not tended to hire or train for those facilities staff that is experienced or knowledgeable about energy issues. Finally, external resources are available to address these problems while policies of many potential clients limit the use of their internal capital.

For these reasons, a large market exists that is ripe for POCs. And they can serve that market well and profitably by offering projects that are technology-focused, standardized, and (often) reliant on third-party financing. The characteristics, structure, and procedures of POCs fit the customers in this niche quite well.

However, those same characteristics and procedures that enable POCs to serve the MUSH market are detriments to their ability to serve other markets. For example, industrial customers tend to have internal expertise regarding their energy-related operations and tend to be less capital-constrained. The ESCO that can successfully serve them is likely to differ in its core functional competencies and operations. It will need to bring considerable expertise to the table and customize its product, for example. Accordingly, long-term relationships are more likely to be valued on both sides, and may even be required. Moreover, the technical and accounting sophistication of large industrial companies is likely to preclude the type of project bundling that often forms a major attraction of the POC.

[7] In performance contracts, it is the ESCO rather than the ultimate customer that is responsible to the lender.

Instead, it is the ROC that is more likely to be able to develop such relationships successfully and profitably.

Ongoing and impending changes in the utility industry are stimulating other environmental changes that may not be particularly favorable to POCs. For example, national retailers have had little reason to attend carefully to energy-related issues at the corporate level until now. Given the inability to transcend service territory boundaries, few (outside of the fast food and grocery industries) made significant efforts to monitor their energy use and develop proactive policies and procedures in this area. This is changing, with the advent of deregulation and competition in the utility industry, and these changes are opening the door for ESCOs to offer their services in monitoring and managing the costs involved. Again, however, it is the characteristic structure and procedures of ROCs that fit with customers in this niche, not those of POCs.

Implications

The economic, regulatory, and legislative climates of specific states are also likely to have important effects on the ESCO industry in those states. As noted earlier, some states are planning or currently attempting to help overcome the barriers perceived to limit the energy services market. These efforts include providing potential customers with information about ESCOs, lists of pertinent companies, standard contract forms, and—in some cases—helping to fund selected energy-efficiency projects.

It is likely that the states with aggressive policies in this area will have some success in developing the sort of market they are seeking and that they will, thus, encourage energy-saving projects through the ESCO industry. However, the research reported here should cause at least a brief pause in the development and implementation of the relevant policies.

Certain policies appear to be based on the assumption that the entire ESCO industry consists of Project-Oriented Contractors wedded to, at most, a suite of projects structured through performance contracts. No problem exists if the subsidies and other support have no effect on the remainder of the market and do not encourage weak competitors or projects that would not be cost-effective otherwise. To the extent that the interventions help to create a robust and sustainable ESCO industry, they are valuable. We believe it important to study carefully the issues discussed in this paper before expanding such programs, however. Are governmental and regulatory policies likely to serve species of ESCOs other than POCs equally well? If not, how will the customers who need the services of such companies be served? How can efforts to increase the number and strength of POCs avoid supporting competitors with little expertise or little staying power?

Does the availability of public funding for certain types of ESCOs reduce the willingness of at least some potential customers to invest their own funds in projects that are not subsidized? In other words, do programs designed to help establish POCs as self-sustaining businesses have the unintended consequence of limiting perceptions of the types of projects that would be worthwhile or the types of suppliers who are legitimate? We do not know and we suspect that the answer may differ from segment to segment. But it would be useful to explore this issue with *a broad range of* potential customers and to shape policy accordingly.

Everyone wants to see interventions that are designed to maximize projects that offer long-term value, not just short-term paybacks. Whether liberal or conservative, none of us can look forward with favor to developing an industry that relies on subsidies from systems benefits charges for its continued existence.

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