ELECTRICITY RESTRUCTURING AND VALUE-ADDED SERVICES: DOES DIRECT ACCESS MAKE A DIFFERENCE?

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Abstract

This paper presents the results of a series of interviews of non-residential electricity service customers who have chosen to take service from a non-utility provider. Our key findings include:

- The retail energy service market remains immature and is characterized by high search and other transaction costs and significant regulatory uncertainty.
- Customers generally believe that the primary benefit from electricity services contracts with non-utility suppliers is in the form of commodity savings, but there is significant interest in certain value-added services, specifically, innovative billing, energy information and energy efficiency.
- Interest in purchasing an integrated and comprehensive suite of energy-related services from a single retail energy service provider (RESP) is limited.
- Customers are virtually unanimous in their support of the idea of restructuring, despite limited savings on commodity prices in most states, uncertain value from other services, costly procurement and difficulties in making the transition to non-utility providers.

Introduction

Although electricity restructuring has not taken place throughout the U.S. as quickly as some expected, markets have been open for full retail competition for well over a year in at least four states, Massachusetts, Rhode Island, California and Pennsylvania. Other states have been open for shorter periods of activity or have experimented with retail competition pilot programs. While there is a large body of academic and professional literature addressing various aspects of restructuring, the bulk of this work has focused on the functioning of wholesale markets, including the structure of bulk power markets, the remediation of market power, and the pricing of transmission and ancillary services. There have been a number of retail market studies, but this research has generally been completed on a proprietary basis [1, 2].

In order to inform policymakers and others interested in electricity restructuring about the results of this process to date, we are conducting a series of interviews with retail customers, aggregators and electric service suppliers about their initial experiences with restructuring. The purpose of the research reported here has been to evaluate the claims made about the expected benefits of restructuring, such as reduced prices and increased innovation. In addition, we are interested in the extent to which customers are demanding value-added services such as innovative billing, energy information and energy efficiency, and whether or not they want these services to be supplied by their commodity provider. The results of our research will include a report in the public domain summarizing the results of our interviews. This paper presents the results of our initial series of interviews with electric service customers who have chosen to take service from a non-utility supplier.

We began compiling records of competitive activity prior to the opening of competitive markets as organizations in various states began preparation for competition [3]. Since competitive markets have opened, we have developed a database containing some limited information on over one hundred and fifty retail contracts signed by organizations of various types and sizes from around the country. This summer we started conducting interviews with the energy managers or others responsible for electricity purchases in an attempt to explore our research questions.

Roadmap

In the following section of this paper, we discuss the methods we have used to answer our research questions and we describe the characteristics of both our overall database of direct access electricity service transactions and the actual sample we have interviewed thus far.

In the section headed "The Procurement Experience," we outline the approaches various organizations have taken to procuring retail electricity service and discuss some of the difficulties they encountered in the process. In this section, as in each of the remainder (with the exception of the conclusion), we present our findings along with a discussion of the evidence we have obtained in support of our findings and a description of some of the question(s) asked in the interviews related to these findings.

In the section "Selecting a Supplier", we discuss the key criteria customers have used to select the suppliers of various services. This is followed by the "Benefits of Restructuring" in which we discuss the sources of benefit to customers from purchasing electricity-related services. In this section, we distinguish between the purchase of commodity electricity and what we refer to as "value-added services." These services are defined in this section. A comparison of perceived benefit from commodity cost savings and value-added services is presented.

In the next section of the paper, "Value-Added and Integrated Energy Services", we describe interest in specific value-added services, both in terms of current purchases as well as expected future purchases. We also address the question of customer interest in what we are calling "integrated energy services," or the purchase of both commodity electricity and a comprehensive suite of value-added services from a single supplier.

In "Customer Satisfaction" we present evidence to support the intriguing finding that customers are highly supportive of the concept of electricity restructuring despite experiences in the new markets that are mixed at best. Finally, in the conclusion, we offer some general insights from our research so far.

Methodology and Sample Characteristics

Over the course of the last two years we have collected press releases and news reports of direct access deals in across the United States. We then drew a representative sample from this population in order to obtain customers of varying sizes and from diverse sectors and regions of the country. At the time of this writing, telephone interviews have been conducted with representatives from 39 direct access customers. Where possible, the person interviewed was directly responsible for negotiating with the RESP. Prior to the interview, the respondent was faxed or emailed a copy of the questionnaire. Approximately 15% of the sample returned completed questionnaires and were not extensively interviewed on the telephone. The interviews discussed in this paper were conducted during the summer of 1999. These interviews lasted between 15 and 45 minutes with a median length of 30 minutes.

The database of deals we have compiled is comprised of 60% firms in California, 20% deals in Pennsylvania with the remaining 20% dispersed throughout the rest of the country. Approximately 23% of the firms are in the industrial sector, with 52% in the commercial sector, and the remaining 25% were in the public sector.

Of the interviews we have conducted, 57% of the firms were located in California, 30% were located in Pennsylvania and 13% were located in other states. 31% of the firms were located in the industrial sector, 46% were commercial firms and 23% were in the public sector. Thus, the subjects of our

interviews were representative of the database as a whole. The typical customer in our sample had revenues greater than one billion dollars and had electricity related expenses that comprised between 0 and five percent of total expenses. The median monthly electric bill for customers in our sample is 1.5 million dollars. The total annual electricity expenditures of customers interviewed for this paper is over 1.2 billion dollars.

The Procurement Experience

To better understand the costs and benefits associated with the new market structure, we asked a variety of questions about the experience of our subjects in procuring electricity services in the restructured environment. We found that the direct access market is still characterized by high search, negotiation and other transaction costs. It took most customers a lengthy period of time and a substantial investment in human resources to negotiate a contract with an RESP. A significant number of the customers we spoke with remarked upon the "steepness of the learning curve". Some of the difficulty was attributed to the business practices of the RESPs: overly technical proposals, bundled prices, and inappropriate recommendations. In addition, customers were concerned by what they perceive to be on-going regulatory changes that might render their past experience irrelevant.

Customers were asked a variety of questions as to procurement approach and time expended selecting a supplier and negotiating a contract. In addition we asked customers if they thought that subsequent negotiations would be easier. Finally we asked them to describe the major problems they encountered when trying to procure direct access electricity.

Table 1 presents the results of our inquiries about how our subjects had procured electric service.

Table 1. Procurement Approach

Approach	Percentage of Customers Who Took This Approach
RFP	70%
Customer contacted RESP	5%
RESP contacted customer	5%
Participated in Aggregation	20%

The majority of customers in our sample used a Request for Proposals (RFP) to select their RESP. The average customer who chose to issue an RFP took approximately 2 months longer and spent approximately one hundred extra person hours to sign a contract with their RESP than the median customer who choose to procure electricity via one of the other options. Many customers were constrained to issue an RFP, by company policy in the case of private firms and by law in the case of public entities. However most of these organizations felt that developing an RFP had an important educational component that justified the additional costs. It forced them to seriously consider their own energy needs and allowed them to gather information concerning the scope of saving, and the range of products available. One customer remarked "We felt this approach would give the most innovative and lowest price. We felt the RFP was an important learning process for both sides. It helps the customer by exposing her to a wide variety of proposals. Providers also learn by seeing what a company is looking for."

The organizations that did not issue an RFP, but approached an RESP directly usually had a prior relationship with that company. One of our subjects noted that "We had a relationship with our supplier. We were doing research and asked them to make a deal. They were familiar with our company." Companies looking to move as quickly as possible negotiated contracts without the benefit of an RFP where possible. Another noted, "An RFP would be too time consuming. With four unsolicited

proposals, we went ahead and got two more and we felt we had adequate selection to make a wise choice."

Table 2. Procurement Time

Number of Months	Percentage of Sample
1 to 5	32%
5 to 10	48%
10 to 15	5%
Greater than 15	14%

Table 2 shows the period of time it took for customers from initially pursuing direct access to signing a contract with their RESP. Over the course of that time, the average firm in our sample invested approximately 200 person hours in this process, although, for some customers this represented an investment in the future as well as the present. One of our subjects noted that "This was a foray into how we are going to approach this market. It is a fixed investment that we will recoup." In addition to using their own staff, almost half (45%) of the firms in the sample hired a consultant to advise them on their purchase. We have reason to believe this percentage is likely to decrease somewhat as the market matures and customers become more familiar with their options. One customer who had recently negotiated a second contract, no longer felt the need to hire a consultant, noting "We hired a consultant for our first RFP, but felt we had learned enough to go out on our own the second time around."

Despite the high transaction costs associated with their first purchase, when asked what they would do when their current contract expires, only approximately thirty percent said they would renew their current contract. Roughly sixty percent indicated they would re-solicit the services through an RFP or some other means. However, over a third of these said that they would give their current supplier some form of "right of first refusal." Approximately 10% said that they had no idea what they would do. These results are consistent with our general finding that, despite the high costs and limited benefits customers associate with their first direct access purchases, they are generally optimistic about the potential of the direct access market for the future.

A significant number of the customers we spoke with found that the RESPs they dealt with had made the process of purchasing electricity services more difficult than it needed to be. One complaint that we heard frequently was that RESPs were unable or unwilling to offer transparent and easily understandable pricing schemes. "The biggest problem was that the electric service provider wanted to bundle everything together which made the ability to understand prices difficult." Another customer stated, "Public sector organizations in particular need to be able to document and verify savings. Opportunities for purchasing services exist, but I don't like bundled cost. I do not want aggregated pricing. I want to have clear prices for each part of the contract." As a result of their experience, this customer decided to postpone the purchase of value-added services.

Many customers felt that their RESP was offering generic advice that was entirely unsuitable to their particular situation. Said one, "A lot of guys think that they knew better than we did. Suppliers should know the industry they are supplying so they can adjust to it." Another customer stated "The problems we have had are that the solutions suppliers provide in terms of value-added services are not consistent with the business. They suggest things I cannot do when they do an energy audit, i.e., turn off freezers at night which I cannot do as this would violate health laws."

In addition, many customers felt that the RESP assumed a greater level of technical knowledge than the company actually possessed. "They need to be sensitive a customers level of technical knowledge. They need to realize that most corporate energy managers have never done this before." Indeed many of the people we spoke to felt that was incumbent upon the RESP to educate their customers as to the realities of the restructured environment.

Finally, we asked whether our respondents felt that they had learned enough that, going forward, the process of purchasing electricity would be easier. Table 3 below clearly indicates that most companies believe they have learned enough that choosing a supplier in the future would be significantly easier. As one customer put it, "It should be real easy next time."

Table 3. Future Ease of Selection

Future Ease of Selection	Percentage of Sample
1 (No Easier)	3%
2	8%
3	30%
4	51%
5 (Much Easier)	8%

At the same time, however, a substantial number of customers who selected 3 and below expressed doubt as to whether the process would ever be easier. One respondent noted, "It will not be that much easier, considering the pace of change." Several customers complained about the uncertainty of future market rules changes: "Next time there will be different market conditions, a different set of rules from the ISO will mean next time it will be as if we were starting all over again." While Paul Parshley, director of Cambridge Energy Research Associates' power team contends that "The trend towards natural gas and electric choice is changing from a halting stop-and-go process to 'forward, march'" [4], a significant fraction of the customers we spoke with were concerned that their 'forward, march' might be tripped up by ongoing regulatory change. One customer seemed to speak for many when he said that the market has "a difficult learning curve" but that he is "hopeful that in the future the market will have matured."

Selecting a Supplier

In the contracts they signed, most of the customers we spoke with were focused on maximizing their commodity savings. By and large, most were unable to quantify the benefits associated with value-added services. Customers seemed to feel that RESPs were largely responsible for this confusion.

Table 4. Customer Criteria for Selection of Supplier

Selection Criteria	Commercial	Industrial	Public
The price of basic electricity service	4.8	4.5	4.7
The supplier is a local company	2.3	2.3	2.1
Recommendation of others	2.7	2.7	2.6
Experience and technical expertise of the supplier	3.9	4.3	3.6
The range and price of value-added products and services offered	2.5	2.6	3.2
Willingness of the supplier to respond to your needs (not including price)	4.3	3.9	4.0
For customers with multiple accounts, the willingness of the supplier to cover all meters	4.5	4.0	4.0

Indeed the feeling among customers that commodity cost savings were of the utmost importance was reflected in the priorities they had when choosing a supplier as shown in Table 4 above.

We found that across all customer classes, price was the more important criterion for selecting a supplier. The concerns about suppliers' attentiveness to the specific needs of the customer were also reflected in the responses to this inquiry, as was an on the part of customers of minimizing the number of electric service suppliers they had to deal with. The range and price of value-added products and services offered ranked as the lowest priority among our respondents. This ranking is consistent with our general finding that many customers feel unable to value the benefits of value-added services and frequently feel that suppliers have not done an adequate job in explaining the benefits to them. Value-added services are frequently seen as representing more of a benefit to the supplier than to the customer.

In Accelerating Energy's Challenge to Change, Prosper Business Development Corp. states that "Prosper believes that consumers who are faced with a multitude of energy choices will want to compare offers before making a choice. Companies who can facilitate this process will enjoy a competitive position and own the energy window to the customer" [5]. The results of our interviews are consistent with this contention. We found that customers are looking for easy to understand, comparable offers and will value this approach in a supplier.

Benefits of Restructuring

In attempting to understand the sources and magnitudes of benefits customers were receiving from restructuring, we asked our subjects to evaluate the relative benefits from commodity savings versus the benefits from value-added services in the contracts with their current RESPs. As can be seen clearly in Figure 1, most customers felt that their current contracts provided "significantly more benefit from commodity savings." One typical customer remarked that "commodity savings was the crux of the deal".

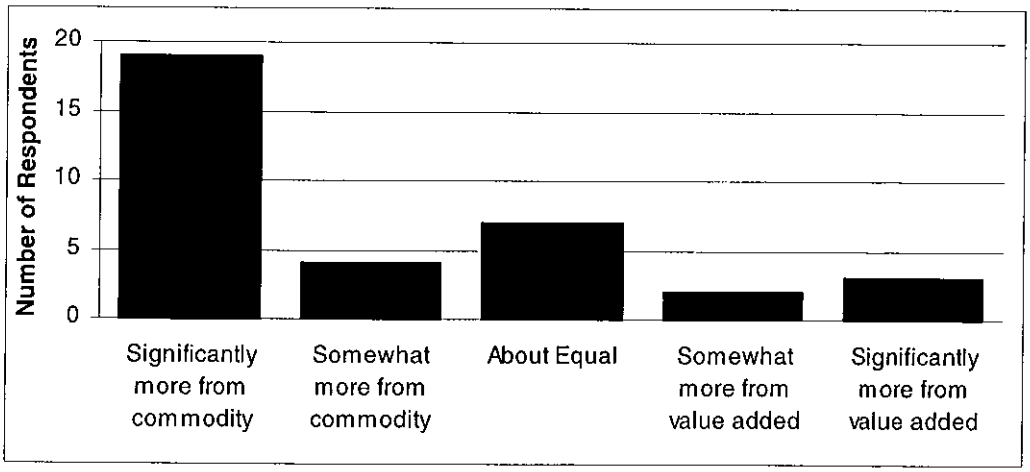

Figure 1. Relative Value of Benefits

We should not take this to mean that customers do not benefit from value-added services, simply that the contracts they have signed with their RESP are focused on commodity savings, not on valued-added services. In their article "Is there Added Value in Value- Added?", Henney, Percival and Simmonds interviewed 10 medium-to-large industrial, commercial and other types of customers in Britain and Norway. They found a consistent pattern of customers "buying electricity through some form of tender, choosing their power retailer based on price, and regarding electricity as a commodity." They also

found that "the largest industrial users of electricity have little or no interest in buying these services [electrical contracting, power quality advice or solutions, advice on efficiency of usage, shared energy savings schemes and other technical assistance] from power retailers per se. They believed either that they possessed the necessary technical skills and financial resources or could get the services more cheaply [6]." We found a similar attitude among large energy users that we spoke with, in all sectors, not only industrial. One typical large customer remarked that "Our company is big enough to be able to perform most tasks in house. Commodity savings is all we were interested in really."

In addition, as mentioned earlier, some customers expressed difficulty in valuing the benefits of these services and, therefore, ascribe less value to them. Many felt that their RESP had failed to present these services in a way that customers could understand. Typical was the remark, "There is a difficulty in getting people to respond in a manner which allows apples to apples comparisons. It is hard to quantify the savings." Another customer felt that RESPs should "... do a better job of providing low risk positive options. Companies don't want to bet the farm on products they have no experience with such as energy efficiency. We wanted options that were guaranteed and positive."

The firms we spoke with generally feel that, thus far, the principle value of restructuring has been commodity cost savings. While most customers recognized that value-added services do, indeed, offer value, RESPs have been unable to present these services in such a manner that a significant fraction of customers feel comfortable purchasing them.

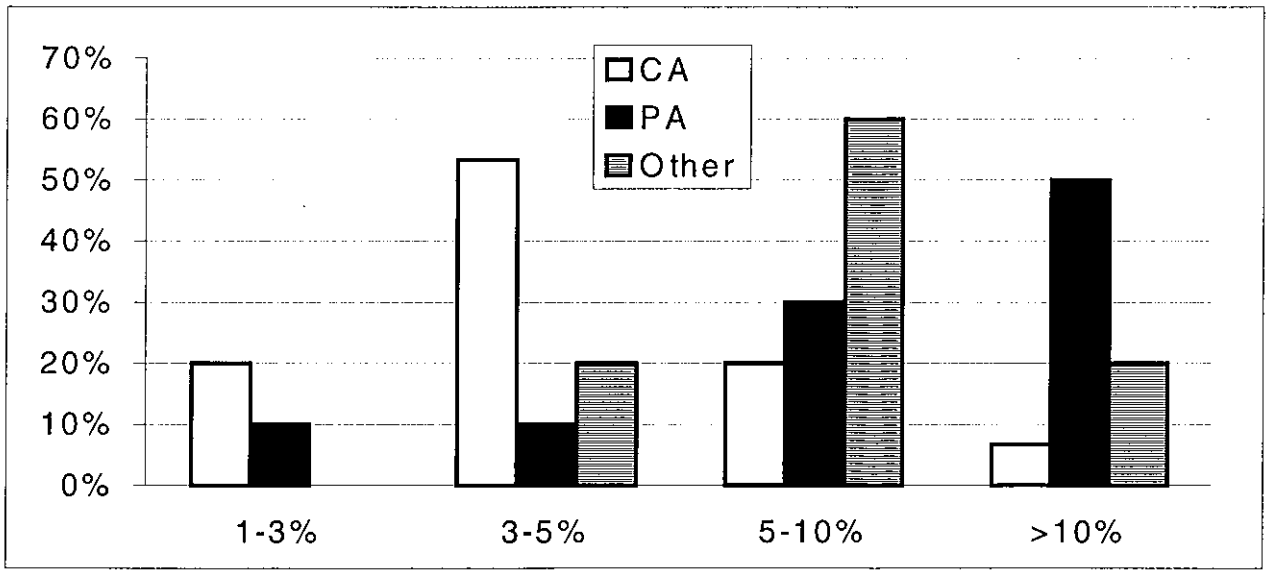

Figure 2. Savings by State

We also asked our interview subjects specifically how much they expected to save on the total delivered price of electricity. Figure 2 presents a breakdown of customer savings by state. It should be noted that two customers, both located in California elected to pay higher electric bills in order to procure green power.

Consistent with the findings of other researchers [7], we note that customers in Pennsylvania reported the highest savings rate, with the average Pennsylvanian customer reporting savings in excess of ten percent. Customers in California reported significantly lower levels of saving, with the typical Californian customer reporting savings between three and five percent.

Value-Added and Integrated Energy Services

We were interested in investigating several issues surrounding customer demand for value-added services. We wanted to assess both current and future demand for these services, as well as to gain a better understanding of customer preferences regarding the suppliers of these services.

Respondents were presented with the following typology of value-added services. Whenever possible, the interviewer reviewed the definitions of each of the categories with the subject.

Table 5. Value-Added Services

Innovative Billing Services	Consolidated billing (i.e., bill from supplier that summarizes electricity usage and cost at multiple sites and accounts); customized bills (e.g., billing for electricity, gas & water; aggregation of bills from multiple utilities)
Energy Information Services	Information on hourly energy use, comparison and benchmarking of facility energy use, tariff and rate studies, opportunities for peak load demand management .
Energy Efficiency Services	Design and installation of high-efficiency equipment, control systems, or lighting retrofits, energy audits and feasibility studies.
Distributed Generation	On-site generation, co-generation, fuel cells, micro-turbines, PV systems
Enhanced Power Quality or Reliability	Power factor correction, voltage regulation, backup support offered by uninterruptible power supply (UPS) equipment, backup generation or multiple feeds.
Facilities Management Services	Maintenance, diagnostics, or emergency repair of major energy systems (e.g., cogeneration and steam, hot and chilled water distribution) or electrical distribution systems (e.g., substations, transformers, switchgear equipment).
Outsourcing of Energy System Management	Take over management and operation of major energy systems, end use pricing (e.g., steam, chilled water, & compressed air systems), purchase and leaseback of central thermal and power plants, total energy management .

We asked our subjects if they were currently purchasing any of the value-added services listed above from their RESP or from a third party service provider. The responses to these inquiries are presented in Figure 3. Approximately half of the customers we spoke with said they were purchasing at least one of the value-added services listed above from their RESP. Roughly the same percentage replied that they were currently purchasing one or more of these services from a third party supplier.

We note that the most popular services offered by RESPs are Innovative Billing Services (principally consolidated and Electronic Data Interchange (EDI) billing) and Energy Information Services. These are services that are perhaps the least intrusive from the customer perspective and are most directly related to commodity purchases. Most customers seemed to feel these were the purview of the RESP. Indeed, many customers were surprised that these services could be purchased from a third party supplier (and in many states they currently cannot).

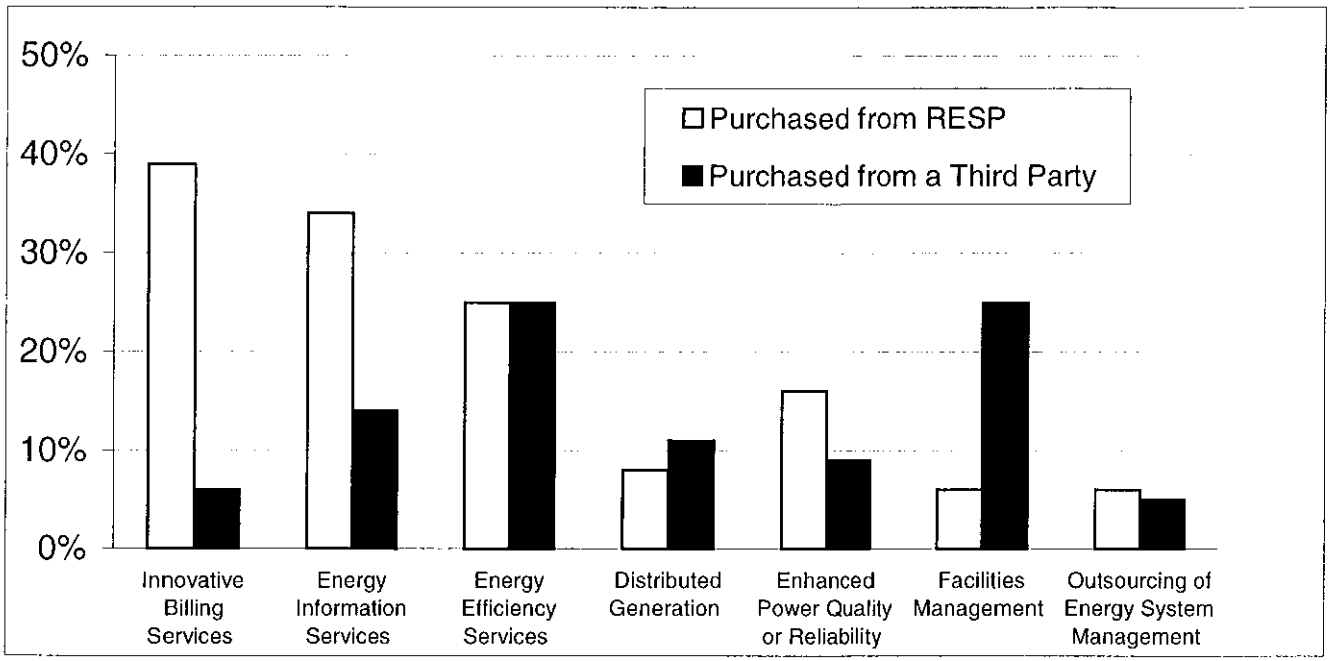

Figure 3. Current Suppliers of Value-Added Services

Clearly, the most popular services purchased from a third party supplier were Energy Efficiency Services, principally lighting retrofits, and Facilities Management. When asked why they choose to procure these services from a third party supplier, responses generally fell into three categories:

1. **Existing Contracts**. Some customers had contracts or established relationships that predated restructuring. One customer stated, "We were purchasing these services before the markets were deregulated, and we had established a relationship with these third party suppliers."
2. **Conflict of Interest**. One commonly held view among those procuring energy services from a third party service provider was that purchasing these services (particularly energy efficiency) from the firm selling them electricity was a clear conflict of interest. A typical comment was, "We wanted the best system in the market place. The third party supplier is independent, they have no vested interest in the information they are supplying." Another customer stated, "We are leery of purchasing value-added services from an energy supply company."
3. **Technical Expertise**. Some customers questioned the ability of an RESP to provide high quality value-added services. One commented, "I believe strongly in dealing with specialists rather than generalists." More bluntly, one customer stated "The people who work for the RESPs suck. They are not good facilities engineers."

We also asked customers to tell us from whom they would like to purchase those value-added services for which they indicated a moderate to high degree of interest (as defined as three or above on a one to five scale) in the future.

As shown in Figure 4, customers who expressed a preference, on average, wished to purchase services that offer information on their consumption of the commodity, such as innovative billing services and energy information services, from their electricity suppliers. One typical customer stated, "The billing and commodity savings are the expertise of the RESP". These responses were reasonably consistent

with the current activity they reported. Customers were also consistent in their positions that when the service seemed to work against the perceived goal of an RESP, that is selling more electricity, the people we interviewed preferred to deal with a third party service provider. One customer stated that "Despite firewalls, RESPs think in utility terms, i.e., selling more gas and electricity." Another said, "We are worried about potential conflict of interest where distributed generation and energy efficiency are concerned."

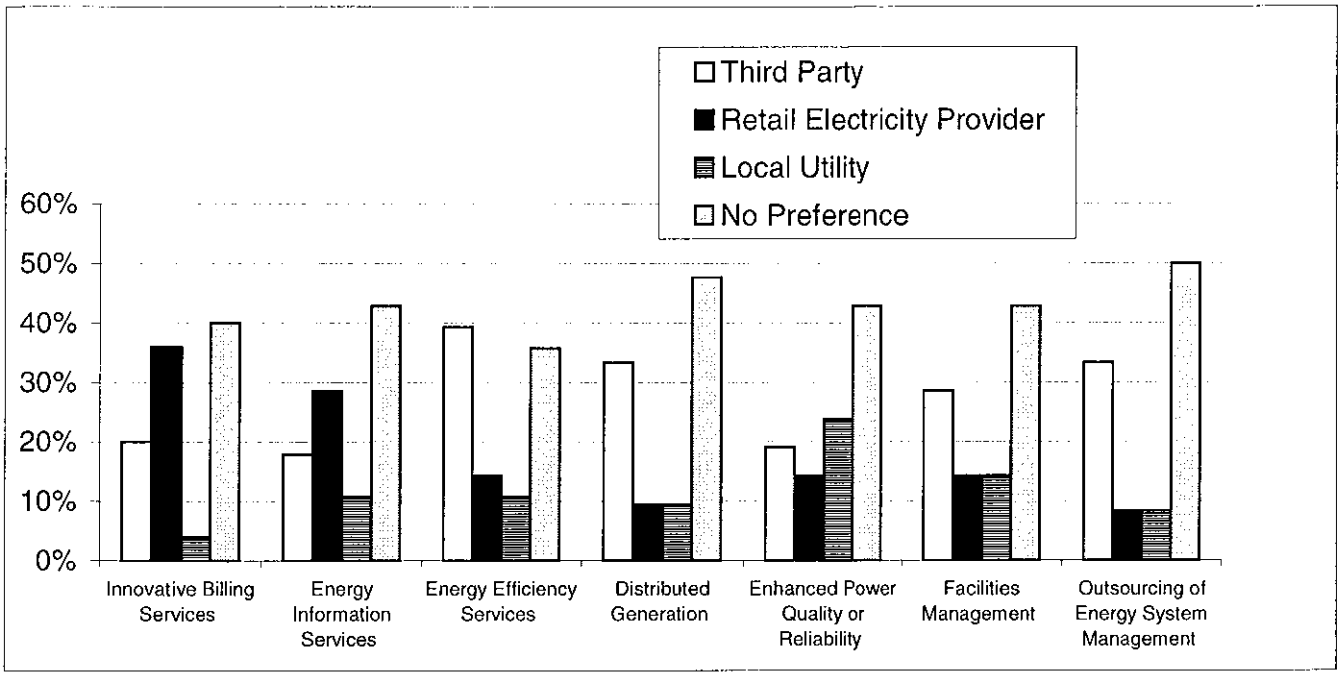

Figure 4. Supplier Preferences for Future Purchases

Some companies were reluctant to enter into long term contracts with their RESP and this limited the scope of value-added services that they would purchase from them. "Commodity contracts are necessarily short term, while the optimal contract length for other value-added services, such as efficiency are necessarily longer. Thus, I would much prefer to enter into longer contracts with an ESCO and shorter contracts with an RESP." Indeed some large customers did not want to enter into any contract that might require a longer-term commitment to their commodity supplier. "I want to maintain the ability to switch quickly, to avoid entanglements."

Only a small minority of customers was interested in purchasing all of their energy services from their RESP. One such customer stated, "We would rather have one stop energy shopping. Energy management is not our core business. We would like to focus on what we do best." Another customer, operating a large national commercial chain, wanted to sign a single contract for all their facilities. In his opinion, "Many of the services require site access. Only a nationwide company is capable of delivering some of these services. It would be hard for a local company to get everywhere. Because energy conservation measures reduce commodity sales, an RESP is willing to negotiate down the volume of the contract if they perform the energy efficiency services." One customer who eventually purchased a complete energy management package explained the major difficulty he had faced "The challenge was to change mindset as to facility management. We]weren't sure that we wanted to outsource that much."

Finally, a large set of customers we interviewed said they had no preference as to which company supplied the various services we asked about. Some public agencies were legally prohibited from expressing a preference. Our public entities were concerned about public perception. One respondent stated that, "Being in the public eye, we are obliged to issue an RFP and opt for the best supplier, whomever that might be." Many firms said they simply wouldn't rule anyone out. This point of view was well expressed by one customer who noted, "We will look for the best deal. I don't close my doors to anyone."

Based on our results thus far, it would be, perhaps, premature to herald the arrival of the so-called "Super ESCO." The majority of customers we interviewed are not interested in purchasing integrated energy services from their RESP. Still, many of these customers are interested in purchasing services from their RESP at the meter, i.e., billing and energy information services. Given the large number of customers who stated they had no preference over who supplies their value-added services, RESPs may in fact have a longer term opportunity to move beyond the meter.

Customer Satisfaction

Despite the high transactions costs of procuring services in the competitive market, the uncertain benefits of value-added services, the lack of responsive on the part of some suppliers and the perceived threat of continued regulatory change, our respondents were almost unanimous in their enthusiasm about the opportunity to choose their electric service provider and their support for the principle of restructuring. Only one customer we spoke with was unwilling to say that restructuring was a good idea. He stated merely that, "We'll have to wait and see." As one typical customer put it when asked if he thought restructuring was a good idea, "Yes I really do. We got new services and saved money. It was good for the company."

While supporting restructuring, most customers felt that the actual implementation had been more difficult than it needed to be, or as one customer remarked, "Implementation has been grisly." The most common complaint we received was, not surprisingly, billing problems. We received reports that bills were either incorrect, late or both. Some billing problems were related to the installation of new real time metering. A typical comment was that, "The biggest problem was billing. Our bills are incorrect. The new meters needed calibration, there was wrong cycling and California billing was ugly." New metering also caused serious problems for another customer "when meters were uploaded, some [relatively small] facilities' readings reported $3 million/month! There were lots of problems, although most were ironed out with much effort."

Customers generally had a negative view of regulators. Complaints about the regulators fell into two main categories. First, several customers felt that the regulators were biased in favor of the formerly regulated monopolies. One subject noted, "Regulators should be open minded to all customers; the regulators are biased in favor of the UDC and lobbyists. If you weren't in the inner circle, your voice was not heard". Another customer urged regulators, "Don't fall for massive stranded cost claims." Several customers, by and large situated in California, remarked that stranded costs had made value hard to find.

Second, customers seemed to feel that the regulators should provide a clear set of rules by which the market should function. This sentiment was expressed by one of our respondents who noted, "Regulators should simplify the process, standardize the way information is provided. It is very difficult for someone who is not a utility expert to understand the available options." Another customer felt that "There needs to be enforcement of accurate billing, established timelines and codes of conduct. A lot of

problems associated with retail wheeling do not result from ESP's not knowing their role, but as a consequence of their having insufficient information or guidelines."

Based on our observations, we believe there may be at least three important underlying reasons for the high level of support for restructuring we observed: (1) customers anticipate reduced costs and more benefits in the future; (2) there is strong ideological support for reduced regulation, independent of current experience, and (3) customers are generally dissatisfied with the performance of the monopoly service provider in their area.

Conclusion

Although there continues to be a great deal of expectation regarding the benefits of electricity restructuring, the development of a mature competitive market for electricity service and energy services more broadly has not yet taken place. Customers continue to face high costs to participate in the market and are uncertain of the benefits they will receive from their participation. In part because energy service companies have been unable to convey the benefits of many of their services, and, in part, because of regulatory uncertainty, these conditions are unlikely to change in the short term. At the same time, non-residential customers express a high degree of support for the principle of restructuring and, at least thus far, are exhibiting sufficient patience to give the market an adequate opportunity to develop. Our research clearly suggests that there is significant, if nascent customer interest in a variety of value-added services. Whether this interest materializes in the purchase of these services will be highly dependent on the ability of suppliers to provide clear, credible information about the benefits of the services and of regulators to create a stable regulatory environment.

Acknowledgements

Work reported here was funded by the Assistant Secretary for Energy Efficiency and Renewable Energy, Office of Power Technologies of the U.S. Department of Energy (DOE).

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