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Electricity Restructuring and Value-Added Services: Beyond the Hype

William Golove, Rodrigo Prudencio, Ryan Wiser and Charles Goldman

Environmental Energy Technologies Division
Ernest Orlando Lawrence Berkeley National Laboratory
University of California
Berkeley, California 94720

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ABSTRACT

This paper presents the results of a series of interviews that were conducted with non-residential electricity service customers who have chosen to take service from a retail electric service provider (RESP). The interviews explored customer attitudes towards and experiences with the process of purchasing electricity and, in some cases, value-added services in the competitive market.

Key findings include: (1) our sample of large commercial/industrial customers believe that they are benefiting significantly more from commodity savings arising from direct access than from the value-added services that they are receiving; (2) there is high customer interest in billing, energy information, and energy efficiency services, as well as some (lesser) interest in "newer" services, such as facility management and outsourcing (although customers remain uncertain of the value of these services); (3) there is no established preference among the majority of customers with respect to choice of suppliers (RESP, utility or other) for value-added services, although there are limited preferences for the RESP to provide billing, energy information and green power, and for a third party provider to deliver energy efficiency.

Introduction

Despite the slower than expected pace of the restructuring of electricity markets, electricity service customers are experiencing retail choice around the country in new and unprecedented ways. In at least four states -- Massachusetts, Rhode Island, California and Pennsylvania -- full retail access has been available to non-residential customers for over a year. Other states, such as New Jersey, New York, Michigan and Illinois are opening their markets to competition in phases or have opened to full retail competition more recently.

Significant amounts of academic research has focused on the performance of bulk power markets and wholesale trading, but less so on the end-user markets for electricity retail services. We chose to study the C/I sector market because of the proportion of total electricity-related expenditures in this sector, the sophistication and knowledge of the electricity buyers, and the exposure to value-added services of this segment. Moreover, in some states, residential choice lags behind C/I choice, at least in part to allow state regulators to assess the effects of retail competition[1] The customers interviewed for this study chose to

[1] The notable exceptions are California, Massachusetts and Pennsylvania where residential consumers enjoyed immediate access to retail electricity service providers.

purchase commodity electricity service and, in some cases, value-added products from service providers other than their historical utility.

The second section of this paper details the purpose of the study and describes its place within the context of other work done in this area at the Lawrence Berkeley National Laboratory. In the third section, we outline the research objectives and summarize the key questions asked in our interviews of retail electricity customers. In the fourth section, we describe the research methodology and define the set of retail services we investigated. In the penultimate section, we present our key findings and conclude with a brief description of future research directions.

Major Areas of Interest

We conducted a series of interviews with retail customers who switched from their utility to buy electricity and, in some cases, value-added services from a competitive retail electricity service provider (RESP). The purpose of the research was to explore claims that have been made about the expected benefits of restructuring, such as reduced prices and increased innovation in value-added service offerings. We were also interested in the extent to which customers are demanding particular value-added services such as innovative billing, energy information and energy efficiency and whether or not retail customers want these services to be supplied by their commodity provider. We defined a set of eight value-added services based on our review of the literature and discussions with suppliers (see Table 1).

Table 1: Definition of Terminology

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.
Green Power Services	Provision of electricity services from renewable, environmentally preferable generation resources.
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, switch-gear 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 pursued these questions based on our observation that the bulk of academic and professional literature addressing electricity restructuring has focused on the functioning of wholesale markets, including the structure of bulk power markets, the re-mediation of market power, and the pricing of transmission and ancillary services. In comparison, little research in the public domain has paid attention to the retail market for electricity and value-added services; the few retail market studies that do exist have been conducted on a proprietary basis.[2] We believe that our interviews with customers in many states are the first such collection of results in the public domain.

Research Agenda

Identification

We organized our sample of end users of electricity into three segments: commercial (including commercial real estate, retail establishments and franchise chains), industrial (primarily manufacturing firms), and public institutions (including state and federal government agencies, school districts, etc.). This segmentation enabled us to explore trends among different types of non-residential users switching to retail electricity services and to investigate claims that have been made in the literature or are "common wisdom" about particular customer market segments.

Transaction Costs

While access to a new competitive market should provide cost savings to customers, the search and switching costs can be significant. We sought to find the magnitude of these costs in the procurement of direct access services by customers.

Sources of Value

To better understand the sources of value perceived by customers when switching from their utility, we asked about the relative value of commodity cost savings versus those benefits expected from value-added services. We were also interested in identifying the magnitude of savings experienced by retail customers, as well as the types of value added services that were emerging as most in demand.

Integration

We were also interested in exploring whether customers prefer an "a la carte" approach to the procurement of services or prefer to receive bundled service packages. We asked retail customers their preferences with respect to the suppliers of various value-added services in order to explore their attitudes about integrated service provision and to explore which services are more likely to be procured from the commodity provider versus those that are more likely to be purchased separately.

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[2] See, for example, XENERGY, Inc. 1999. *Retail Energy Markets '99*.

Incremental Demand

Many value-added energy services, such as energy efficiency and energy audits, thought to represent important public benefits, were central components to demand-side management programs required of utilities by state regulators. As electricity restructuring undoes DSM requirements, the question arises about whether a reduction in mandated service provision will lead to increased demand in competitive markets.

Customer Satisfaction

Electricity restructuring has largely been driven by the dissatisfaction of large electricity users in states with high electricity prices. Our survey asked about overall satisfaction with restructuring as an indicator of the success of the process so far.

Approach

Methodology

Over the course of the last three years, we compiled records of competitive activity prior to the opening of competitive markets as organizations in various states prepared for competition (Golove et al 1998). In addition, we collected press releases and news reports of direct access deals across the United States. From this information, we developed a database containing information on more than one hundred and fifty retail contracts signed by organizations of various types and sizes from around the country. This database of deals was comprised of 50% firms in California, 17.5% in Pennsylvania, 9.4% national deals, and the remaining 23.1% dispersed throughout the rest of the country. Approximately 19% of the firms were in the industrial sector, with 62% in the commercial sector, and the remaining 19% in the public sector.

We then used this pool of "switchers" in order to obtain customers of varying sizes and from diverse sectors and regions of the country for our interviews. Ultimately, telephone interviews were conducted with representatives from 73 direct access customers between July and December 1999. Where possible, the person interviewed was directly responsible for negotiating with the RESP. Of the firms interviewed, 43% were located in California, 12% were located in Pennsylvania and 45% in other states. 23% of the firms were industrial customers, 61% were commercial firms and 15% were in the public sector.

Caveats and Limitations

While this report provides insight into the interests and decision-making processes of C/I sector electricity service customers who have chosen to participate in direct access, the findings should be considered in light of certain biases and/or methodological shortcomings.

Sample size. The relatively small sample of retail customers interviewed means that we were unable to infer statistical significance from our study findings. Instead, our results are presented as strong anecdotal evidence, rather than statistically significant findings.

Publicity seeking. Our database was assembled primarily from press releases announcing new deals between RESPs and commercial/industrial/public sector customers. Typically, the press release was generated by the RESP and occasionally listed a contact at the customer site. This method of learning about retail electricity contracts limited our population to those companies that sought publicity for their actions. We believe that many deals around the country were not announced, in part because customers chose to maintain as confidential any information about their energy services purchases. Those that were announced by press releases almost certainly required the approval of the customer.

Monopoly utilities as quasi-competitive entities. The competitiveness of the retail electricity market is likely causing incumbent utilities to utilize competitive strategies to retain customers. Some of these strategies may amount to last ditch efforts to retain customers, including deep price discounts on power or ancillary services. In those situations where an incumbent utility successfully retained a customer, it is unlikely the utility would issue a press release announcing the retention of the customer, and, in any case, we did not include such deals in our population. Electricity restructuring may have improved the price and/or services offered to that customer, but these experiences were not captured in our interviews.

California bias. Despite the fact that customer choice exists in more than a dozen states around the U.S., retail electricity customers in California heavily populate our sample. We suspect that this is because full retail competition began first in California, creating more media attention during the period in which we collected our population data.

Conflation of market rules and customer preferences. Our interviews did not provide data adequate to disentangle customer preferences from the effects of market rules in some instances. For example, while most states do not yet have competitive markets for billing services, we believe there would be significant interest in selecting a non-utility provider of this service.

Findings

Identification

Figure 1 shows that the majority of our respondents had monthly electricity bills in excess of $500,000. The 73 customers in our sample had aggregated annual electricity expenditures of over $4 billion. For the majority of our respondents, electricity related expenses comprised between zero and five percent of their total operating expenditures. More than half of the organizations in our survey had annual revenues (or agency budgets when considering public organizations) in excess of $1 billion.

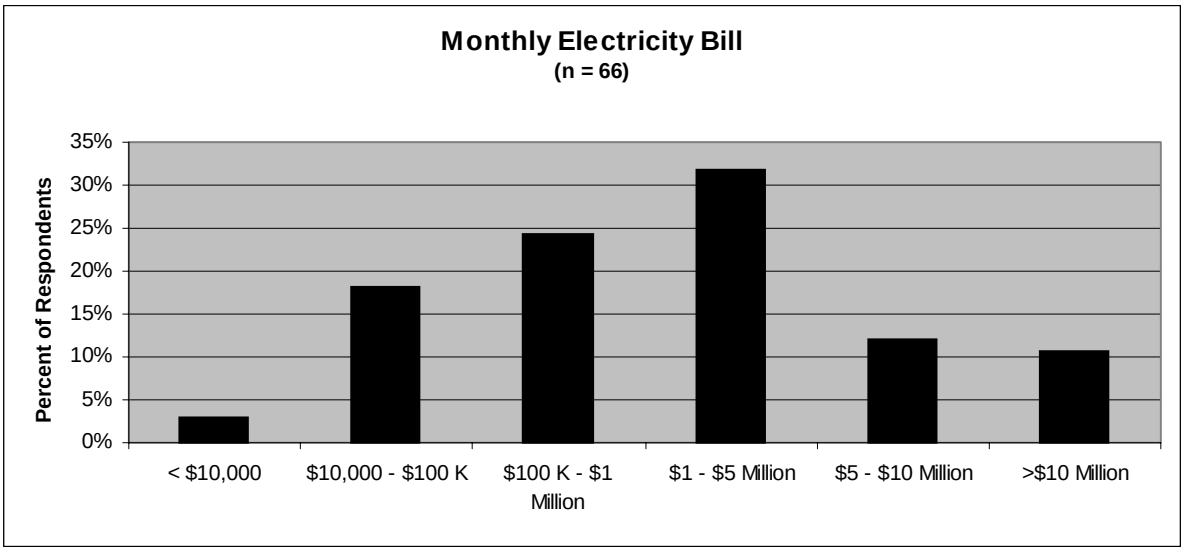

Figure 1. Monthly Electricity Expense

Transaction Costs

Figure 2 presents the types and distribution of procurement approaches that were taken by our respondents. Although the use of a public solicitation or Request for Proposals (RFP) is typically the most costly approach to procurement, we believe there are several reasons why this has been the most common method. Because the competitive market is new, many customers are interested in learning as much as they can about the market before committing to a purchase. The use of an RFP facilitates the gathering of certain types of market intelligence. Some customers are also unsure of what they want and are looking to be guided by the proposals they receive. Finally, many public sector customers are required by law or regulation to conduct an open competitive procurement process. Figure 2 also suggests that, at least among our respondents, the market for retail electricity service has been largely customer driven. The proportion of customers that were approached by RESPs in our sample is small and, in these cases, the number of RESPs they were approached by, is also small.

Table 2 shows the period of time it took for customers to procure new retail electricity services and whether they expect the process to become easier in the future. Over the course of the procurement period (measured as the time between initiating the direct access process to signing a contract with an RESP), the average firm in our sample invested over 700 person hours in finding the right deal. Over 60% of the customers surveyed required five months or longer to switch service providers. At the same time, many customers felt this represented an investment in learning the procurement process and that future service procurement would be easier. Indeed, over 50% of respondents expected the future ease of selection to be high (see Table 2 below).

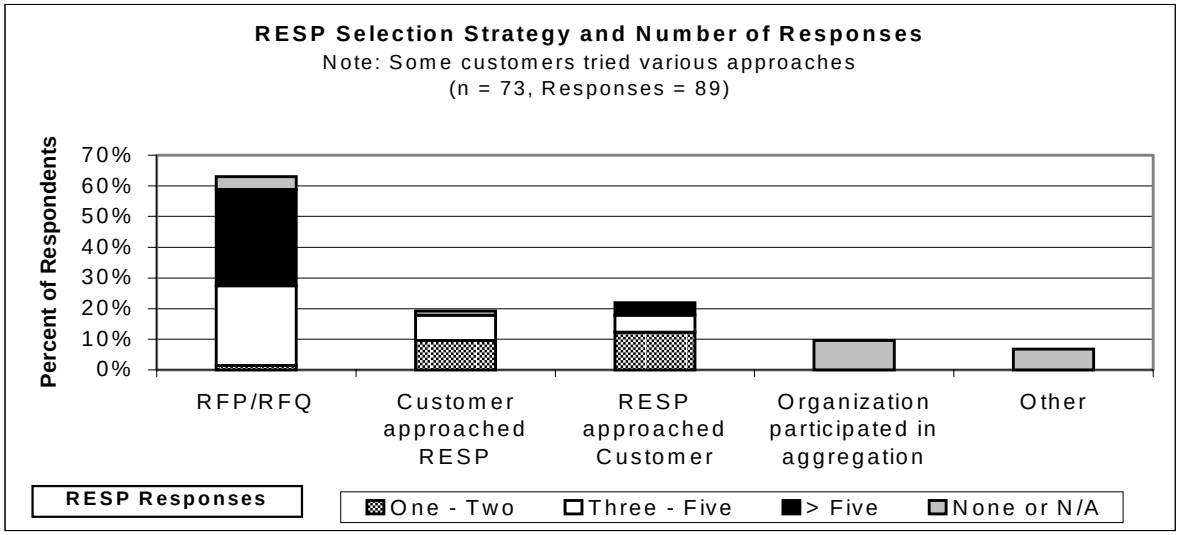

Figure 2. Selection of an RESP

Despite the high learning costs associated with a first purchase, 64% of the respondents said they would reissue an RFP or bid out for services for future contracts. Only 28% said they would, with certainty, renew their current contract when it expires with a slightly higher percentage suggesting they would give their supplier some form of "right of first refusal." About 7% had no idea what they would do.

Table 2: Procurement Time and Ease of Selection

Procurement Time		**Future Ease of Selection**	
Number of Months	*% of Sample*	*Future Ease*	*% of Sample*
< 3	19.4%	1 (Not Easier)	6.8%
3 - 4	15.3%	2	4.1%
5 - 6	26.4%	3	30.1%
7 - 12	25.0%	4	47.9%
13 - 18	9.7%	5 (Much Easier)	9.6%
> 18	4.2%		

Anticipated regulatory uncertainty contributes to customers' sense of both the potential future benefits as well as costs of future procurements. 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'(CERA 1999)," several of the customers we interviewed were concerned that their "forward, march" might be tripped up by ongoing regulatory change. One respondent noted, "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."

Sources of Value

In order to explore the perceived sources of value from electricity-related purchases, we asked customers to compare the relative value they expected to receive from reductions in the costs of the electricity commodity with the benefits they anticipated from any value-added services they were receiving. About 70% of the customers from California generally expected savings in the 1-5% range from the contracts they had signed, whereas customers from Pennsylvania and other restructured states expected greater savings, with 80% of Pennsylvania customers expecting savings in excess of 10% (Figure 3). The disparity of anticipated savings by state is probably the key reason for the more rapid switching to RESPs in Pennsylvania than in California.

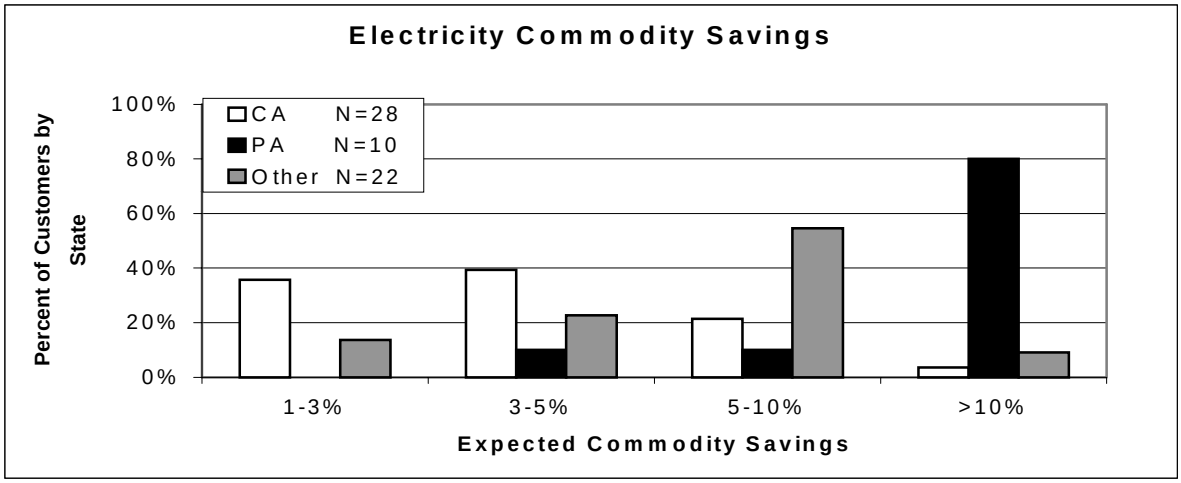

Figure 3: Savings by State

We were told by a number of our interview subjects that, while they knew that there would be benefits to their organizations from these value-added services, they felt the salespeople representing the various services had not done enough to quantify those benefits for them. Thus, customers expressed being left with significant uncertainty about how to compare the relative benefits of seeking to lower their commodity costs versus, for example, improving the energy efficiency of their operations.

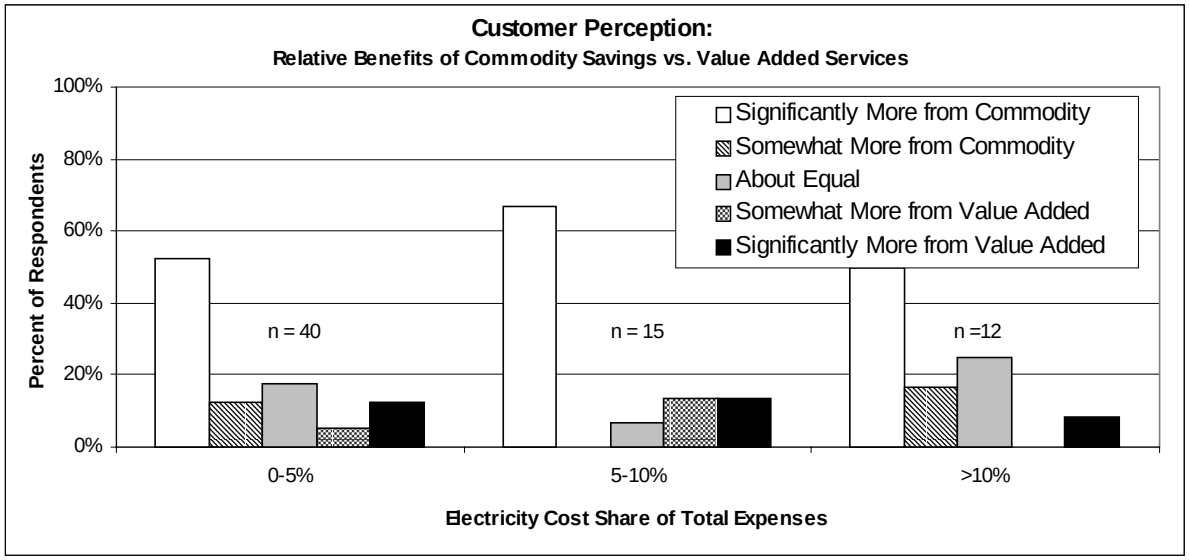

Figure 4: Value of Services and Electricity Expenses

What we observed was that despite the fact that energy efficiency and other value-added services can often save customers between 10% and 30% on electricity expenses, customers continue to believe that the main benefits from direct access are derived from savings off of the electricity commodity. This was true regardless of share of total expenses spent on electricity (Figure 4).

Integration

Many of the customers we interviewed chose to purchase value-added services from a supplier other than their RESP (see Figure 5). This was particularly true in the case of energy efficiency, distributed generation, facilities management, and energy system management. Some customers commented that buying these services from the electricity provider was akin to letting the fox guard the hen house. In addition, the high degree of future interest in energy efficiency specifically (see Figure 6), combined with the ambivalence of customers about their choice of supplier, suggests there will continue to be markets both for integrated and separate (from commodity) provision of this service.

We also found that customers appeared willing to accept options for a variety of services, even in cases where they have no intention of exercising those options (see Figure 7). We believe this may be the case because there is little cost to the customer in accepting options and that it may provide some negotiating leverage in cases where it is important to the supplier to include it in the contract.

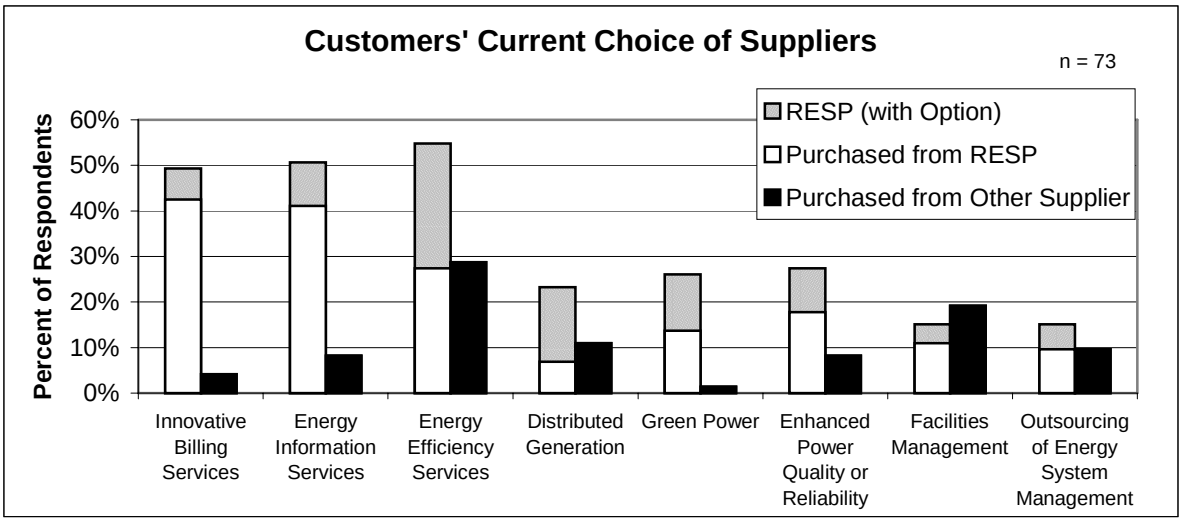

Figure 5: Customer Choice of Supplier

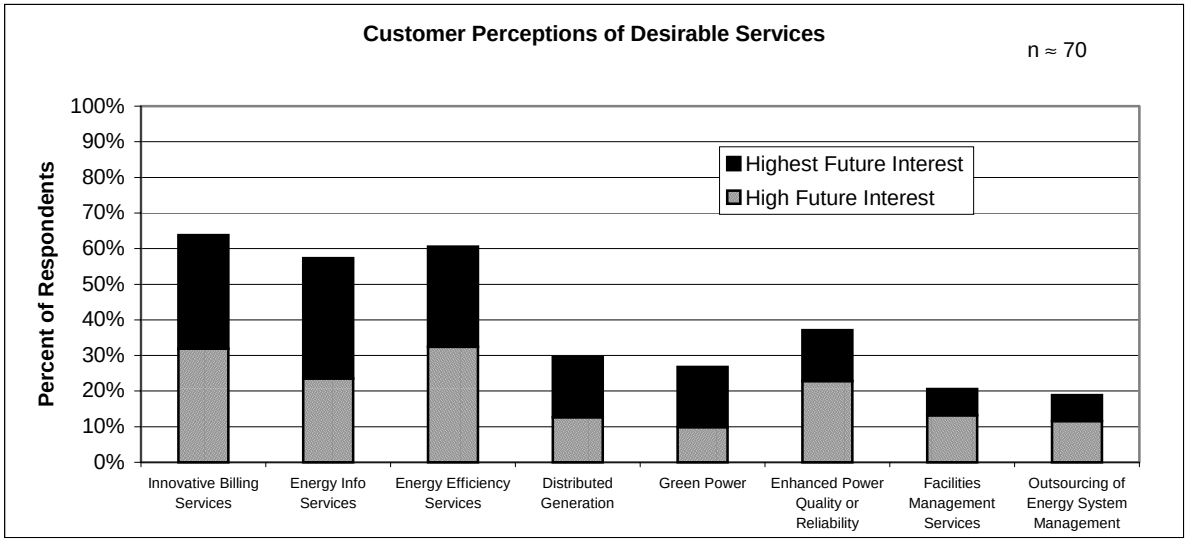

Figure 6: Desired Future Services

With respect to the question of what type of supplier customers will prefer in the future, our results suggest that the market leaders are not firmly established – no preference received 50-60% ratings for all services we asked about (Figure 7). Customers did, however, appear to favor somewhat the RESP for billing, energy information and green power and third party providers for energy efficiency, facility management and energy outsourcing.

Incremental Demand

Although we cannot make strong claims about the question of whether direct access has had an incremental effect on customer interest in value-added services, we were able to compare current interest in these services with customers' expressions of future interest in these services. By comparing the number of respondents who indicated they are currently purchasing specific value-added services with the number indicating a high degree of interest in those services in the future we can estimate incremental demand. Figure 8 suggests that it is unlikely that there will be a significant incremental future interest in most value-added services as a result of direct access, at least in the short-run.

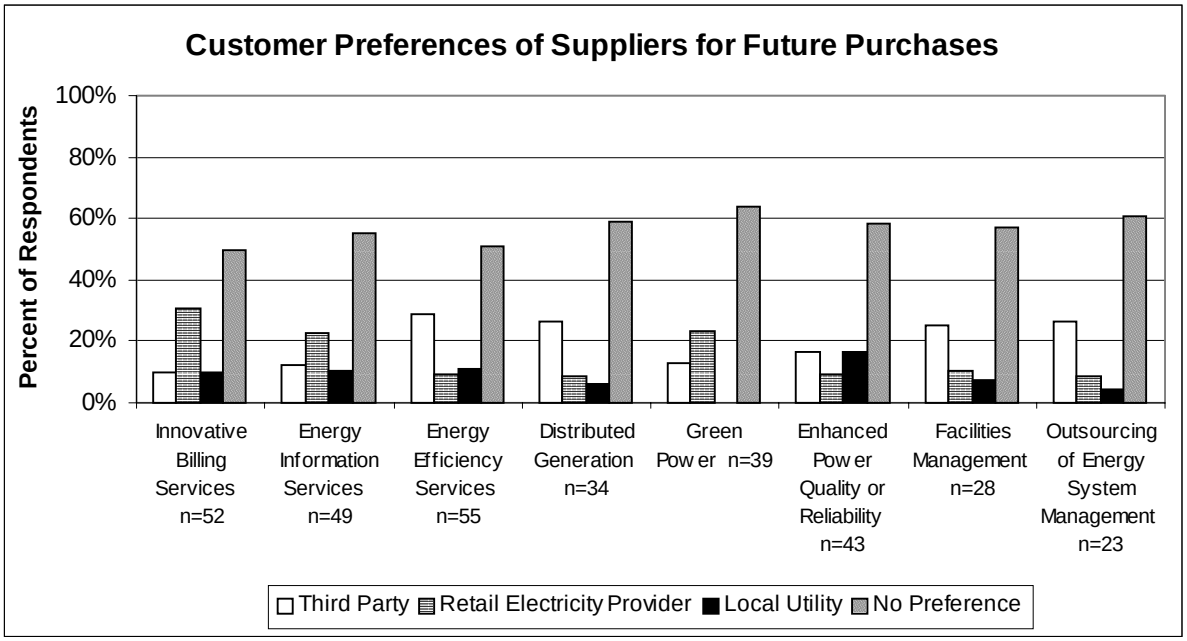

Figure 7: Preference of Future Supplier

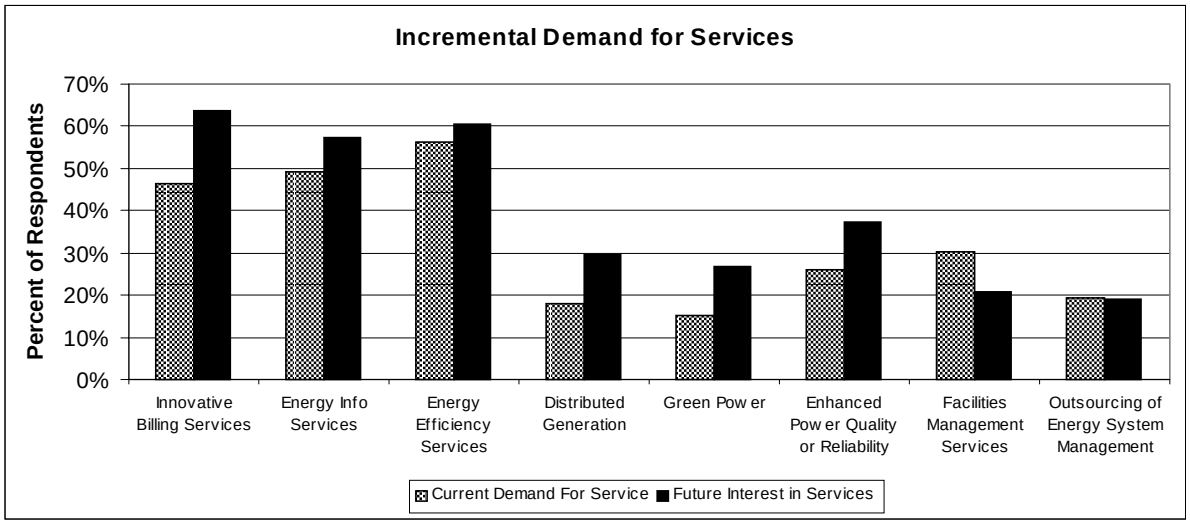

Figure 8: Incremental Demand for Services

Customer Satisfaction

Despite the high transactions costs of procuring services in the competitive market, the uncertain benefits of value-added services, the lack of competitive responsiveness on the part of some suppliers and the perception of regulatory uncertainty, our respondents were almost unanimous in their support for 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.” Most respondents expressed views similar to the customer who noted, "Yes I really do [think that restructuring was a good idea]. We got new services and saved money. It was good for the company.”

Most customers felt that the actual implementation had been more difficult than it needed to be. The most common complaints centered around, not surprisingly, billing. 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, “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 without much effort.”

Customers generally had a negative view of regulators. Complaints about 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 recovery of stranded costs made value hard to find.

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

Summary and Next Steps

Our findings indicate that direct access customers expect to save a modest amount from the competitive procurement of electricity service. By comparison, energy efficiency and other value-added services are known in some circles to offer much larger savings. Yet the customers we interviewed routinely believed that savings from direct access would come much more from the commodity purchase than from value-added services. We believe that this finding suggests that the marketers of value-added services may be doing an inadequate job of communicating to customers the worth of their services.

Our interviews suggest that while there is significant interest in value-added services (despite the uncertainty about their benefits), it is not clear at this point that the introduction of competition in the electricity market is stimulating demand for these services. We also found that there is limited interest in service bundles. Many of the customers we spoke to were concerned about conflicts of interests on the part of commodity suppliers that also offer a range of value-added services. Nevertheless, there do appear to be markets for the integrated provision of certain value-added services, especially in those cases where the supplier can demonstrate that the additional value and reduced costs associated with procuring a range of services from a single supplier, outweigh the risks of this approach. In addition, it is apparent that no single type of supplier has established a position of market leadership. Finally, in spite of our findings that procurement costs were often high, the savings associated with competition low and the benefits of value-added services, modest, there is overwhelming support for electricity restructuring.

Based on our observations, it is apparent that competitive markets for electricity service and value-added services are immature. The large savings that many customers expected have not materialized and the hoped for benefits have not fully emerged. It will be important to continue monitoring customer experiences and satisfaction with retail competition as one important indicator of the ultimate success of electricity restructuring.

In the next phase of this project, we will conduct interviews with representatives of organizations that have served as aggregators for direct access purchases of electricity and with suppliers of these services. We will explore aggregators' strategies for either adding value or reducing the costs of individual customers and retail suppliers' strategies to serve customer interests and needs in emerging competitive markets and stimulate market development of new, innovative services.

Acknowledgements

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