Purchasing Energy and Related Services in a Restructured Electricity Industry

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ABSTRACT

This paper presents an analysis of approximately thirty Request for Qualifications/Proposals (RFQ/RFPs) for electricity and related energy services issued by a mix of government, large commercial and industrial energy consumers. We evaluate the RFQ/RFPs on a variety of issues such as: economic sector of issuer, specific services requested, pricing approaches, and criteria used to select service provider. We have augmented our analysis with a series of interviews of representatives of the issuing firms.

These solicitations are useful in understanding revealed preferences of large customers as retail competition develops. These solicitations also enable us to evaluate a variety of efficiency-related issues, such as potential roles for energy service companies (ESCOs), the specific efficiency services desired, and concerns regarding purchasing power and efficiency services from single suppliers.

Initial findings include: (1) solicitations have a number of uses beyond simple purchase mechanisms, such as learning about the emerging market and influencing legislators and regulators; (2) a variety of pricing approaches are emerging depending, significantly, on the objectives of the potential purchaser; (3) providing a "green power" option is important to many aggregators intending to include residential customers in their aggregations; and (4) customers appear interested in exploring a wide variety of value-added services, in addition to the purchase of commodity electricity.

Introduction

Across the country, a majority of states are moving to restructure markets for electricity and related services. Three primary approaches to restructuring have emerged: (1) the initiation of pilot programs designed to open relatively small portions of the market, both in terms of range of services and customer base, to retail competition and to test a set of market rules for later adoption under full retail competition; (2) opening segments of the market to competition over time, both in terms of loads and unbundled services, or "phase-in"; and (3) the initiation of full retail competition on a future date certain.

Some states (e.g. Massachusetts) have chosen to utilize both a pilot program and phase-in, while others (e.g. New Hampshire) have proposed to move directly from pilot programs to full competition, and one (California) has introduced full retail competition without the benefit of pilot programs or a competition phase-in. Other states (e.g. Oregon) have instituted pilot programs prior to determining the future steps in the restructuring process.

Increased customer choice resulting from restructuring has already begun to have an impact on the suppliers of electricity services. There have been increases in the number and types of suppliers in a number of states (even as there are mergers in consolidations across the industry) and innovations in the pricing, rate of development, and variety of service bundles. The industry trade press and academic literature has generally focused on the "supply side" of the transformation of the electric utility industry (e.g., announcements of strategic alliances, new products and services).

While many private firms involved in the electricity industry have done proprietary research into consumer preferences under retail competition, little of this research has been available to policymakers. This phenomenon is also due, in part, to the limited economic activity in restructured markets to date. One window into these preferences, however, comes from the growing number of firms and agencies that have issued Requests for Qualifications (RFQs) and Requests for Proposals (RFPs) seeking to purchase energy and related services on the open market.

Nonetheless, in response to retail competition, end users are increasingly purchasing electricity and related services through new and emerging channels. For example, many firms are involved in direct negotiations with power marketers, energy services companies or other potential providers of electricity and related services, often as a result of supplier marketing efforts. Other firms are purchasing electricity and related services through the issuance of public and targeted solicitations.[1] These solicitations provide some important insights into large customers' preferences in electricity-related services, pricing forms, contract lengths, and so on.

Approach

We examined a range of solicitations from large end users in order to gain a more detailed understanding of consumer preferences for electricity-related services and to complement information available from survey results of customers participating in retail pilot programs (Landon and Kahn 1996; University of New Hampshire Survey Center 1997; Environmental Futures, Inc. 1997; Nathan and Stipnieks 1997; Noll 1996). We also reviewed these solicitations to develop some initial insights on whether actual customer preferences in the U.S. were consistent with "conventional wisdom" and international experience with restructured electricity markets (e.g., the United Kingdom, Norway) regarding the limited demand for value-added services, such as energy efficiency.[2]

We obtained thirty-two solicitations for the purchase of electricity and related services. These solicitations offer a window into the preferences of commercial, industrial and government sector consumers of electricity. Table 1 provides a summary of our sample, including information on: (1) market sector and location of operations; (2) whether the solicitation was issued under a restructuring pilot program or in anticipation of more open retail competition; (3) the type of solicitation (e.g., request for qualifications, request for proposals); and (4) the variety of services requested. In order to obtain some solicitations, we agreed not to reveal the identity of the firms. The organizations represented in our sample include state, federal and local government agencies, nonprofit organizations, and commercial and industrial sector businesses. About 10 percent of the solicitations in our sample were requests for supplier qualifications only. The remaining 90 percent involved various types of requests for proposals. We supplemented our review through interviews with several end users as well as consulting groups involved in the development of these solicitations.

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1 Competitive solicitations include both RFPs and RFQs and are explicitly focused on the purchase of electricity and related services. Because some of the solicitations included were issued on a confidential basis, we maintain anonymity except in cases where the solicitation was issued on a public basis and disclosure of the specific organization will not jeopardize the anonymity of other organizations.

2 We believe that there remain legitimate social concerns about the efficiency of energy consumption in the economy, and it is, therefore, important to understand the level of interest in efficiency services outside the context of DSM in order to better assess the need for continued public policies.

Table 1. Key Attributes of Select RFPs and RFQs

Sector	State	Direct Access, Pilot, Other	Solicitation Type	Stages	Winner Selected?	Energy	Ancillary Services	Billing Services	Metering Services	Financial Services[3]	Green Power	Energy-Efficiency Services	Infrastructure Dev'l. & Maint[4]	Tariff Analysis[5]
C	CA	DA	RFP	1		x								
C	CA	DA	RFP	1		x		x						
C/NP	CA	DA	RFP	1	Y	x								
C/NP	MA	Pilot	RFP	2		x						x		
C/NP	MA	DA	RFP	1		x	x	x	x	x	x	x	x	
I	CA	DA	RFP	2				x	x			x		x
I	CA	DA	RFP	1		x		x	x	x				
I	CA	DA	Resp. to Statements of Work	1										x
I	FL	Other	RFP	1		x	x				x		x	
I	MI	Pilot	NA	?		x		x	x					
I	NE[6]	Wholesale	RFP	1	Y	x								
G	AZ	Other	Quotations	1	Cancelled	x					o	o		
G	CA	DA	RFP	1		x	x	x	x		o			
G	CA	DA	RFQ & RFP	1	Y	x	x	x	x	x	x			
G	CA	DA	RFP	1		x	x	x	x					
G	CA	DA	Letters of Interest & Quals.	2	Y	x		x	x				x	
G	CA	DA	RFQ	2		x			x			x	x	x
G	CA	DA	RFP	1	Y	x		x	x	x		x		
G	CA	DA	Quals. for Utility Partnering	1	Y	x	x			x				
G	CA	DA	RFP	1		x		o	o	o	o	o		
G	CA	DA	RFP	1		x		x	x					
G	CA	DA	RFQ & RFP	1		x	x	o	o		o	x		o
G	CA	DA	Supply of electricity	1		x			x					
G	CA	DA	Proposals for Strategic Alliance	1			x	x	x			x	x	
G	CA	DA	RFQ & RFP	1		x	x	x	x			o		o
G	CA	DA	Information & Proposals	2			o	o						o
G	CA	DA	RFQ & RFP	2	Y	x	x (p)	x	x	x		x	x (p)	
G	MO	Other	RFP	1		x								
G	NEI	DA & Pilot	RFP	1	Y	x		x	x		x	x	x	
G	NM	Pilot	RFP	1		x	x	o	o					
G	PA	Pilot	RFP	1	Y	x	x							
G	PA	Pilot	RFP	1		x		x						

Key: C= commercial, C/NP = industry association/nonprofit, I = industrial, G = government, DA = direct access, RFP = request for proposal, RFQ = request for qualifications, Y = yes, x = service requested, x(p) = service requested in revised version of RFP, o = optional

3 Financial services refer to a range of services including risk management, financing and provision of equity capital.

4 Infrastructure development and maintenance refers to requests for both development of technical facilities, such as distribution networks, and o&m service for existing facilities.

5 Includes development of load profiles.

6 NE is used here as an abbreviation for New England.

Our findings should be interpreted with caution because of the small sample size and data limitations. Despite our offer of confidentiality, we were able to obtain only a small fraction of the solicitations issued by private firms.[7] Moreover, solicitations represent only one of the available avenues for purchase of electricity-related services and we are frequently unable to determine whether agreements announced in the trade press result from solicitations or direct negotiations.

Who Is Issuing Solicitations?

Thus far, large end users with significant electric loads, entities that believe they can successfully aggregate loads, and government agencies subject to open procurement requirements are the primary entities issuing solicitations. The transaction costs associated with competitive solicitations appear to limit the appeal or viability of this strategy for smaller customers. About two-thirds of the solicitations we reviewed were issued by various government agencies pursuing aggregation strategies. These include eight municipalities that can provide a firm commitment for their own facility loads and are interested in aggregating loads of other local businesses and residences, two public university and state college systems aggregating loads from individual campuses, two individual universities, and four local government associations offering to aggregate loads of member agencies. Informal discussions with representatives of various agencies suggest that established procurement protocols, legal requirements and expectations that large government purchases be conducted in open processes are key factors underlying their decision to use public solicitations as the basis of their procurement strategies.

Three solicitations in our sample were issued by nonprofit trade organizations representing multi-site commercial firms. We believe that these nonprofit organizations issued solicitations in part to help create demand for their aggregation services, since they typically did not have firm commitments from individual member firms. Historically, both governmental agencies and these nonprofit entities have performed various coordinating roles in their respective sectors and may be well positioned to serve as electricity demand aggregators in addition to their traditional functions. We were also able to obtain eight solicitations issued by large industrial firms or national account customers.

We are aware of only a small number of solicitations issued by end users in conjunction with retail competition pilot programs. This suggests that end users participating in retail competition pilots are less likely to use solicitations for electricity purchases compared to end users in states initiating either a phase-in or full-scale retail competition. Two factors could explain such a difference. First, the potential benefits of competitive solicitation may be less compelling in a pilot program because the range of suppliers is often limited to some pre-specified list. End users often use solicitations to screen out "fly-by-night" suppliers. Because the suppliers approved to participate in some pilot programs have been pre-qualified and approved, this feature of a solicitation may be of less value to end users. Second, because there may be timing restrictions associated with pilot programs, consumers may need to begin considering offers before they would be able to issue a solicitation and receive bids, particularly for governmental agencies.

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[7] Unfortunately, we were unable to obtain a large number of targeted solicitations that we are aware of, or believe to exist, as a result of information in the trade press or discussions with industry consultants.

So What *DO* Customers Want?

Based on our sample, we identify five themes that shed light on the motives and service preferences of large end users issuing solicitations. End users in our sample exhibited: (1) a strong desire "to test the market," and, in some cases, influence regulators; (2) a willingness to consider a wide variety of pricing forms and options, subject to constraints faced by certain types of organizations; (3) an interest in purchasing "green power," at least among some governmental and commercial customers; (4) a strong interest in electricity-related services beyond the provision of the commodity, which we characterize as "commodity-plus;" and (5) some level of interest in energy-efficiency services among certain large end users.

Testing the Market (and Influencing Legislators and Regulators)

While some end users in our sample were clearly interested in actually purchasing electricity-related services (as evidenced by the comprehensiveness of the solicitation), our analysis also suggests that some solicitations were used as information-gathering tools by those seeking to "test the market." For example, in several solicitations, end users provided only cursory information on their service preferences and on the energy consumption characteristics of their facilities. In some cases, this approach was part of a conscious, two-stage procurement strategy. In these case, an initial request for qualifications to select a small group of potential suppliers was followed by an RFP which included comprehensive information on facility energy-related characteristics and loads).

We also found a number of examples of solicitations which we would characterize as "give me a proposal, I'm not sure what I want." This is consistent with the comments of D. Louis Peoples, CEO of Orange and Rockland Utilities, Inc., who noted that, "... a competitive marketplace requires a learning curve for customers and marketers...." (Energy Daily 1997). Competitive solicitation processes can be a useful tool in helping end users move up the learning curve and gather valuable information about the market. For example, one end user that utilized a two-stage process (i.e. RFQ and RFP) added a set of specified ancillary services and non-firm power to the scope of services in the RFP which did not appear in their initial RFQ.

Some solicitations also appear to be intended, at least in part, to influence regulators or legislators. For example, Howard Foley, President of the Massachusetts High Technology Council, commented in referring to their solicitation that, "We believe this program will provide our members with the ... benefits from ongoing, energy-related legislative activity." This interest in legislative activity was no doubt related to Massachusetts' pilot program approach to restructuring. We also discovered three solicitations issued by companies operating in states that do not currently allow direct retail access. Conversations with representatives of two of these firms leads us to believe that their RFPs were part of an attempt to substantiate a claim to wholesale status with FERC and thereby bypass the need for retail access regulation. In the third case, the apparent intent was to accelerate the process of restructuring in the company's home state.

Pricing Options and Contract Length

Based on our data, it appears that customers want suppliers to provide a broad array of pricing forms. Our analysis suggests that customers' interest in electricity pricing goes well beyond Awerbuch's

claim that "customers want to purchase power from those providers whose cost structures, at any given moment, allow them to minimize their overall electricity bill (Awerbuch 1997)." For example, pricing forms requested by end users included: (1) fixed price for energy only and/or demand charges plus energy; (2) prices indexed in some fashion to regional or national spot markets; (3) time-of-use (TOU) pricing based on either changes in hourly spot or peak vs. non-peak seasonal differentials; (4) contracts for differences;[8] (5) commodity and value-added services priced separately; (6) prices benchmarked relative to current utility tariff; and (7) other innovative approaches suggested by suppliers.

In our sample, end users either explicitly or implicitly identified a need to satisfy at least four objectives: (1) maximize total savings, (2) achieve the best possible rates, (3) minimize price risk and ensure price predictability, and (4) establish price comparability with other offers and with tariffed rates from the local utility. These objectives are not entirely complementary, but neither are they entirely incompatible. For example, contract officers at several governmental agencies indicated that cost savings must be clearly demonstrable and often must be justified in terms that are easily comprehended by senior agency management. These agencies and their procurement staff tend to be risk-averse. For these end users, prices that are benchmarked relative to the current utility tariffs may offer the most convincing comparisons, even if this pricing strategy does not maximize potential savings.

Arrangements proposed by electricity suppliers may offer the potential for superior savings, although these suppliers may encounter difficulties if their proposals can not be readily evaluated and compared to existing utility tariffs or involve complex analysis of financial risks. Thus, establishing price comparability may be of paramount importance for suppliers that want to do well in procurements issued by governmental agencies. For other end users, a predictable stream of future prices may be more important than finding the lowest possible price or maximizing total savings. For firms that are out to maximize savings and have attractive load shapes, then some form of TOU pricing may represent the best alternative.

Differences in the length of contracts requested in the solicitations reveals other key considerations. Our research suggests that most customers are aware that there is an explicit trade-off between the length of contract they are willing to sign and the price discount they are likely to receive. However, evaluating this trade-off is made more complex, at least in those states with some kind of stranded cost recovery or other competition transition charges, because of uncertainties associated with price changes following the stranded cost recovery or transition periods. Many organizations are apparently more interested in maintaining their post-transition flexibility than in maximizing their savings in the short-run. In California, there is also an issue that has emerged in more recent solicitations regarding pricing form and stranded cost recovery.[9] In those solicitations requesting a price benchmarked to current utility tariffs, there are now

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8 A contract for differences is a financial arrangement based on establishing a pre-set "strike price" in a particular exchange. For those transactions for which the seller receives less than the strike price through the exchange, the buyer makes up the difference, while for those transactions in which the buyer pays more than the strike price, the seller makes up the difference.

9 AB1890, the law mandating retail competition in California, imposed a rate freeze on all Investor Owned Utility (IOU) tariffs for a four year transition period beginning with the opening of the market to direct access service providers. The charges associated with the recovery of stranded costs, or Competition Transition Charge (CTC), is included as a component of these frozen tariffs. However, not all the IOUs will necessarily require the entire four year period to recover these costs. For those customer receiving electric service benchmarked to IOU tariffs as of the commencement of the transition period, the potentially substantial benefits of an early expiration of the CTC may accrue to the Electric Service Provider (ESP).

explicit indications that any savings resulting from early expiration of the transition period costs will accrue to the benefit of the customer.

Surprises on the Services Front

For the last 75 years, customers desiring electricity have been required to purchase "bundled" service from the local franchise monopoly. The elements of services available have been largely defined by utilities and regulators. Certain customized services, such as demand-side management and interruptible power, have become increasingly available, although supply of these services has typically been limited to the utility. However, prior to restructuring, the increasing potential for co-generation, fuel substitution opportunities, and the development of DSM programs had already begun to alter the process of buying retail power for some large customers.[10]

Based on experiences in the U.K.—and possibly as an initial reaction to historically limited customer choice in the U.S.—we expected to find that large end users would express strong preferences for "commodity only" service in their solicitations. However, to our surprise, only three solicitations specifically limited services to provision of the energy commodity only. About 65 percent of the solicitations went well beyond the simple purchase of commodity power and included some or all services that have historically been part of the bundle provided by electric utilities, such as ancillary services, billing, and metering (see Table 1). To some extent, interest in billing and metering services reflects explicit decisions of regulators in some states (e.g., California) to unbundle these services. However, the fact that industrial and commercial customers located in other states requested these services provides some evidence that there is real customer interest in innovation in these traditional utility-supplied services. National account customers, in particular, are clearly interested in taking advantage of technical advances in information and communication technologies to enhance billing services (Roth 1997).

We were also somewhat surprised by the relatively low number of requests for ancillary services, which include schedule coordination and provision of reserve margin and black start capability,[11] especially among firms in California. Despite requirements that ancillary services be provided with the purchase of electricity, fully two-thirds of the solicitations did not specifically request such services. We had expected to see a requirement of the capacity to provide ancillary services by a prospective Energy Service Provider (ESP) in nearly every case because of the requirements of the California Independent System Operator (ISO). We now believe that some consumers simply expected these services to be bundled with commodity power, some were unaware of the market requirements, and still others simply did not want the services. The fact that ancillary services were not explicitly requested by end users may represent an example of the "learning curve" required of customers that want to participate in direct access and possibly related to continuing regulatory uncertainties associated with new market structures in many states. Only one end user specifically requested back-up power, which suggests that, at least in our sample, there was relatively low interest among large customers in securing additional service reliability beyond the level offered by the existing system. It is likely, however, that firms relying on sensitive industrial

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10 Over the last decade, large end users have been confronted increasingly with questions related to product mix and supplier selection (e.g., for cogeneration, natural gas, or efficiency services).

11 "Black start capability" refers to the ability to provide very rapid generating capacity.

processes have a significant interest in reliability services that we are not observing because of problems with our sample.

Moreover, about 50 percent of the solicitations included requests for at least one or more additional services such as tariff analysis, risk management, infrastructure development (e.g., economic development assistance or facility maintenance), and energy-efficiency services. We would characterize these service packages as "commodity plus" in that customers are requesting value-added services that go well beyond basic electricity services. We were likewise surprised by the range and diversity of services requested. End users identified over twenty distinct services, beyond the provision of commodity power, in these solicitations, which we combined into nine categories shown in Table 1.

Interest in Purchasing "Green Power"

In our sample, about 25 percent of the end users, mainly governmental agencies and non-profit organizations representing commercial users, indicated an interest in supplier offers to provide "green power," although frequently as a non-required service. Overall, we found some large customers willing to consider supply packages that include green power. Only one of six California municipalities included green power in their solicitations, which was less than we expected given their stated interest in aggregating loads of residential customers. We would expect to see green power packages included more frequently in the future by municipalities seeking to target and aggregate residential customer loads. Moreover, at least in California, public goods surcharge funds will be available to some customers that purchase green power from renewables; these financial incentives may help jump start this market during the transition period and has encouraged entry by retail energy suppliers interested in providing green power.

Demand for Energy-Efficiency Services

About 40 percent of the end users in our sample requested energy-efficiency services of one type or another. Contrary to conventional wisdom, customer interest in energy-efficiency services was not limited solely to the institutional governmental sector or large commercial customers, but also included one of the three industrial customers in our sample. Based on our review, the level of sophistication or interest in comprehensive energy-efficiency services varies significantly among even those customers that requested these services. For example, several end users identified specific energy-efficiency-related services such as provision of end use load information, comprehensive energy audits, and installation of energy management systems and energy-efficient equipment, which suggest high degree of familiarity and sophistication. Other end users referred to demand side management services generically in their solicitations with little indication of what they had in mind. Some of the end users recognized that real-time pricing and load profile information is also of value from an energy-efficiency perspective.

This suggests to us that the demand for energy-efficiency services is likely to undergo substantial evolution as the retail energy services market develops. Based on our small sample of solicitations, we would tend to agree with Prindle (1996) who claimed that:

> (S)ome customers (sic) segments will value, and be willing to pay for, energy efficiency services in unregulated markets. However, these segments comprise only part of the current customer base. Others ... will not sustain energy efficiency investments in unregulated markets. We also find that the definition of energy efficiency is likely to broaden in unregulated markets.... (I)n unregulated energy services markets,

> customers will seek to satisfy a wider range of energy-related service needs.... To market energy efficiency successfully in such customer-driven markets, electricity retailers will likely have to bundle their offerings accordingly.

These comments are echoed by Hall and Reed (1996) who note that, "An important marketing consideration repeatedly expressed to us by commercial customers is that they do not necessarily value energy efficiency.... In other works (sic), energy efficiency is, in itself, not thought of as a product or a service but a means to an end." These comments suggest that demand for energy-efficiency services may need to be stimulated by effective marketing efforts, given the limited customer interest.

Based on interviews, we found that some customers appear concerned about possible conflicts of interest that may arise in purchasing both energy and energy-efficiency services from the same supplier.[12] In other cases, internal purchasing procedures for electricity and energy efficiency differ significantly enough that a single solicitation cannot be used for both services. We also believe that because the short contract lengths being proposed for electricity supply may not be appropriate for energy-efficiency projects, some end users are choosing to utilize alternative mechanisms for procurement of efficiency services.

Conclusion

As the new industry structure emerges and matures, end users of electricity will be faced with opportunities to express their preferences in ways that have not been possible previously. In anticipation of these changes, some end users have begun issuing solicitations for the purchase of electricity and related services on the open market. Our research suggests that, while many large customers are still learning, they are already exhibiting an interest in a diverse array of services.

While it is premature to make any definitive claims, it appears that aggregators including residential customers in their aggregation are typically interested in including green power in the mix of services available. For institutional customers, achieving savings that can be definitively established, generally by using pricing mechanisms that provide easy comparability to utility tariffs, appears to be among the key objectives. Large commercial and industrial customers appear to be most interested in maximizing cost savings, either through reduced prices alone, or as a result of price reductions, load management and energy-efficiency improvements. We have observed a strong demand among these customers for information and communication technologies with the apparent goal of improving the efficiency of their operations. Marketers will have to work hard to overcome perceptions regarding conflicts of interest for suppliers of both energy and energy efficiency among certain customers.

We believe that the market for electricity and related services is likely to evolve dramatically over the next few years. Our future research agenda will include continued collection and analysis of solicitations and contracts, review of the trade press, and a series of detailed interviews with decision-makers in which we will seek to understand why specific suppliers were chosen, what level of cost savings

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[12] These findings from our interviews are consistent with information reported by McGaughey (1997) who quoted an energy manager at AT&T, Ray Saleeby, as stating, "After a while, large customers are going to say that they can't have the person who is doing their energy services also being the one who is supplying them with energy. They will need someone who is free, clear, and objective, who can shop around intelligently for energy. With a utility whose agenda is selling energy, its ESCO has to be suspect."

were achieved, what were the key issues that arose in negotiations, and what were the results of the procurement effort.

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