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Why do We Need Electricity Retailers? or Can You Get It Cheaper Wholesale?

by

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February 13, 2000 REVISED DISCUSSION DRAFT

WHY DO WE NEED ELECTRICITY RETAILERS? OR CAN YOU GET IT CHEAPER WHOLESALE?

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"It's a sin to buy retail"
Attributed to Woody Allen

ABSTRACT

The opportunities for retail electricity competition to provide new value-added services to retail electricity consumers are discussed. The physical attributes of electricity supply make many of the traditional "convenience services" provided by retailers in other industries irrelevant in electricity. In addition, these attributes provide a low-cost way for electricity consumers to buy directly in the wholesale market. In this way, retail consumers can receive the commodity price related benefits of competitive generation markets without incurring large increases in advertising, promotion and customer service costs. Electric distribution companies (UDCs) can easily provide a Basic Electricity Service (BES) that makes it possible for all consumers to buy commodity electricity in competitive wholesale electricity markets at the spot market price. The availability of BES is especially important for residential and small commercial customers for whom few new retail value-added services are evident. BES also provides an excellent competitive benchmark against which consumers can compare the value added associated with competitive supply offers from competing Electricity Service Providers (ESPs), helps to protect residential and small commercial customers from exploitation by ESPs, and mitigates wasteful expenditures on marketing and promotion by rent-seeking ESPs that will increase prices. The availability of BES helps to channel ESP competitive efforts toward providing value added services such as real time metering and control, energy management contracts, risk hedging and forward contracting, green power and other services. This is the strategy that the most successful ESPs are pursuing. A successful retail competition program can have additional social benefits by helping to improve the performance of wholesale markets. However, efforts to use creamy "shopping credits" to subsidize ESPs are misguided, raising both efficiency and equity concerns. The success of retail competition should be judged by the new value added services it brings to the system, not by the number of customers who switch to ESPs from BES and similar default services. Regulators who focus on retail switching statistics and who are subsidizing customer switching are likely to be making residential consumers worse off than they would be if BES had been made available to them by their UDC.

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[1] Department of Economics, Sloan School of Management, and Center for Energy and Environmental Policy Research at MIT. I would like to thank Carl Blumstein, Roger Bohn, Severin Borenstein, Theresa Flaim, Bill Hogan, Fred Kahn, Rick Shapiro, and Frank Wolak for comments on an earlier draft. I am grateful to the MIT Center for Energy and Environmental Policy Research for financial support.

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INTRODUCTION AND SUMMARY

A great deal of the popular discussion of electricity sector restructuring, competition and regulatory reform has focused on providing "customer choice" for all retail consumers --- small, medium or large. Customer choice programs separate the distribution of electricity, which remains a regulated monopoly,[2] from the financial arrangements for acquiring electric generation services in competitive wholesale markets and reselling these services to end-use retail consumers.[3] Utility distribution companies (UDCs) provide the first service. Independent unregulated electricity retailers (Electricity Service Providers or ESPs) provide the second energy supply service, relying on the UDC's distribution facilities to physically deliver the electricity. ESPs need own no physical electricity production or distribution facilities. ESPs are primarily financial intermediaries which acquire electricity in the

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[2] Electricity differs from telecommunications and related information services in this regard. With current technology, it is not expected that "facility based" distribution service competitors will evolve in the same way as cable, wireless, satellite and overbuild competition is emerging for delivery of telephone, data and video services to end-use customers.

[3] It should go without saying that a reasonably well functioning competitive wholesale market is a precondition for creating a well functioning competitive retail market. States which introduce retail competition without *first* creating the necessary supporting competitive wholesale market institutions are

competitive wholesale market and resell it at retail to residential commercial and industrial consumers. ESPs may provide their own metering, billing and customer care services to serve their retail supply customers, may rely on the UDC to provide some or all of these services, or can outsource some of these services to third parties. Customers who do not switch to an ESP can generally continue to be supplied with electric energy by the UDC ---via a default or standard offer service option --- based on a regulated price.

Regulators travel from conference to conference with their charts depicting how many ESPs have been licensed in their states and how many customers have switched to an ESP. They wring their hands when the data indicate that the number of customers, especially residential and small commercial customers, switching to ESPs is smaller than they had hoped and when they observe many ESPs withdrawing from the market soon after they have entered because they find it difficult to make a profit. The basic problem that many ESPs face is that they can't profitably compete with the standard offer or default service that continues to be available to customers from their local UDC. This appears to be an especially difficult challenge for serving residential and small commercial customers.[4] At the same time, many regulators are committed to protecting these small consumers from exploitation by ESPs trying to take advantage of the widespread confusion about electricity competition, poor information about market values and competitive options available, and generally high transactions and switching costs. These protections take the form of regulated UDC default service options, information provision programs and regulations, and minimum service standards for ESPs

ESPs are increasingly pressing regulators to find ways to put more "retail margin" into the system --- the difference between the *retail* price charged for generation service by the UDC to

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bound to run into serious problems.

[4] For example, in California about 25% of the large industrial load had switched to an ESP during the first year of customer choice despite no special provisions to create "retail margin" for ESPs. However, less

customers who do not switch to an ESP and the competitive *wholesale* market price of electric generation services that both ESPs and the UDC acquire in regional wholesale power markets. ESPs argue that the standard offer or default service prices offered by the UDC must be significantly higher than it now is so that ESPs can attract customers by offering them lower prices than they can obtain from standard offer or default service and still earn enough to cover their marketing, advertising, promotion, bad debt and any billing and metering costs they have chosen to incur. Some states have provided creamy "shopping credits" for consumers who choose ESPs in order to provide such a retail margin to them. These shopping credits effectively increase the regulated price that consumers who do not choose an ESP must pay to levels above the wholesale commodity cost of electricity and provide an opportunity for ESPs to attract customers by offering discounts even if the UDC continues to provide metering, billing and other customer services on behalf of the ESP.

At the same time, some astute policymakers have recognized that electricity consumers can get many of the benefits of competitive generation markets in a simple and straightforward manner by buying directly in the competitive wholesale market, without incurring additional marketing, promotion and advertising costs. Giving consumers direct access to the wholesale market also mitigates concerns about abusive sales practices, customer ripoffs, and the need for burdensome consumer protection regulations. This leads to an obvious question. If customers can "get it cheaper at wholesale," what value added do electricity retailers bring to the table once a competitive wholesale market is created and consumers given access to buy electricity there? Competitive retailing entails substantial increases in overall marketing, advertising and promotion expenses in the electricity sector. UDCs' costs in these areas are naturally quite low; electricity supply has never been an advertising/promotion intensive business. Accordingly, ESPs must bring some valued added to the system to make their activities

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than 1.5% of the residential load has switched to an ESP during the same time period.

beneficial from a societal perspective. More importantly, what are the costs and benefits of various regulatory initiatives designed to give ESPs more "retail margin" to help them to prosper?[5]

The popular focus on retail competition in electricity has been motivated by the view that allowing retail customers to choose their retail supplier from among many competing ESPs is the only way that small residential and commercial consumers can and will benefit from electricity competition. This view in turn reflects concerns (real or imagined) that smaller customers have not benefited greatly from the introduction of competition in sectors like telecommunications and natural gas supply which have gone through industry transformations similar to what is now taking place in electricity.

This view reflects, in part, the failure to understand the physical aspects of electricity supply and delivery and the opportunities these physical attributes create for giving customers the opportunity to buy directly in the wholesale market with low transactions costs. In fact, there is a simple and low-cost way to ensure that electricity consumers get the *price-related* benefits of competition among generation suppliers. The physical attributes of the production and delivery of electricity makes it very easy to give all retail electricity consumers the equivalent of direct access to the wholesale spot market for electricity and provides a natural benchmark that consumers can use to compare offers from ESPs. A Basic Electricity Service (BES) option provided by the UDC that allows retail customers to buy directly in the wholesale market should be the benchmark against which the social benefits of retail competition and the best mechanisms to realize these benefits should be judged. That is, successful retail competition should provide value-added services to consumers over and above what can they can realize in a simple and inexpensive way through direct access to the wholesale market. This is how retailers succeed in other industries. It is these retail value-added services that should support the retailing costs required to provide these additional retail services. If a retailer cannot provide value added over and above what a

[5] See for example, Alfred E. Kahn "Bribing Customers to Leave and Calling it 'Competition'," *The*

consumer can realize by buying at wholesale then the retailer should not expect to succeed. No retail value added, no retail margin! Moreover, success of retail competition should be measured by the valued-added services it brings to the system not by the fraction of customers who decide to buy at retail rather than at wholesale.

In this framework, the primary social value increasing role of ESPs is to provide enhanced customer services which provide value added to consumers over and above what consumers realize by purchasing at wholesale through the UDC.[6] These services include enhanced metering and control technologies, price and consumption hedge contracts, total energy management services, bundling of a gas, electric, telephone service,[7] and other innovative services that ESPs can create and endeavor to convince consumers to purchase. ESPs must then recover their retailing costs through the higher prices that consumers are willing to pay for these value-added services. Moreover, consumers are protected from unscrupulous retailers and excessive retail markups by having a transparent competitive wholesale market purchase option against which retail suppliers must compete and against which consumers can easily evaluate competing offers. This reduces the consumer protection challenges that have burdened state regulators.

It should not be surprising that ESPs would be opposed to allowing UDCs to offer this type of basic no-frills BES to retail customers. It provides a highly transparent benchmark against which ESPs

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Electricity Journal, May, 1999, pages 88 – 90.

[6] As I will discuss in more detail below, there are other potential social benefits associated with the development of an active retail market served by competing ESPs. If ESPs offer real time pricing options that allow consumers to adjust their consumption to rapidly changing electricity prices they can help to mitigate market performance problems that arise when wholesale supplies are scarce and there is no demand elasticity in the wholesale spot market. In addition, participation in the wholesale markets by multiple ESP buyers with varying demand patterns, contractual obligations, and risk preferences can increase wholesale market liquidity and improve wholesale market performance with forward contracting.

[7] For example, check out http://www.essential.com/. Also compare the quality of the information provided regarding prices and services on this site to what is available at http://www.utility.com/.

must compete. More importantly, the only way that an ESP can compete effectively with BES service is to offer value added services --- over and above commodity services available directly in wholesale spot markets ---- for which consumers are willing to pay a higher price. That price, in turn, must be high enough to cover their marketing, promotion, procurement, and capital costs.

On the other hand, ESPs would raise some legitimate objections to BES as I have described it so far. There are costs over and above the costs of wholesale power that a UDC incurs when it provides BES. These costs include customer service costs, billing costs, bad debt costs, meter reading costs, procurement expenses, advertising, etc. Some of these costs are potentially avoidable when an ESP attracts customers from the UDC while others the UDC must continue to incur to meet its service obligations. How much of these retail costs are avoidable when customers choose to be served by an ESP depends, in part, on what retail services ESPs provide (e.g. metering and billing services) and what residual customer service obligations are retained by the UDC. ESPs may be able to offer these retail services more economically than can the UDC. Thus, the "retail margin" issue is inseparable from issues associated with the unbundling of specific retailing services that are open to competition from ESPs, the pricing of these services, and the remaining service obligations of the UDC.

There clearly are potential opportunities for electricity retailers to provide value-added services to retail consumers, especially for larger commercial and industrial customers. Indeed, ESPs have been most successful in attracting these larger customers even in the face of default service prices that reflect only wholesale market prices for electricity. However, the opportunities for ESPs to add real value (net), the expectations we have for the behavior and performance of electricity retailing, and the public policies that affect how ESPs compete for retail customers, must be viewed from the perspective of the peculiar attributes of the supply and distribution of electricity that make direct access to the wholesale market very easy. The value-added opportunities are likely to depend heavily on the volume and

patterns of the customer's electricity consumption, how the customer uses electricity to provide end-use services, and opportunities to provide value to customers by bundling commodity electricity sales with other services ---- e.g. total energy management services. There are likely to be significant differences in value-added opportunities between residential, small commercial, large commercial and industrial consumers because of differences in the quantities of electricity they consume, how they use that electricity, and total energy management opportunities. There are also likely to be significant differences among these groups in the opportunities for consumer exploitation and the associated need for consumer protection initiatives.

It is sometimes argued that subsidies for ESPs are justified because this is an "infant industry" that needs help in getting going. Some even point to the PURPA experience as demonstrating how supra-competitive payments for electricity produced by Qualifying Facilities (QFs) has helped to stimulate the development on an independent power sector. One must be suspicious of infant industry arguments. Industries that have grown and (sometimes) prospered based on subsidies rationalized as necessary to promote a new industry often remain "infants" for decades. Temporary subsidies become difficult to withdraw. Many of the ESPs are not poor capital-starved infants but rather are affiliates of large corporations with substantial resources. PURPA has cost the U.S. tens of billions of dollars in excessive costs. We should at least try to find a less costly way to provide ESPs offering real value-added services with a reasonable economic environment in which to compete.

A more respectable argument for providing subsidies to encourage the development of ESPs is that ESPs, as a group, can help to improve the performance of wholesale electricity markets. The potential beneficial impacts of a competitive retail-ESP market on the performance of wholesale markets include increased liquidity in spot and forward markets, demand management in response to spot market price movements to mitigate market power problems when capacity is scarce and demand

is otherwise very inelastic, and contracting to insure against price spikes. The social value of these improvements in wholesale market performance cannot be fully captured through ordinary market processes. Accordingly, some type of subsidy may be justified in order to accelerate the evolution of retail loads served by ESPs. Before any such subsidies should be provided, however, the wholesale market performance problems they are designed to remedy should be fully understood, the magnitude of these performance problems assessed, and any subsidies should be *targeted* at stimulating ESP initiatives that remedy the wholesale market performance problems at issue.

The purpose of this paper is to make some sense of these issues and to identify and evaluate policy options. My focus here is on retail competition as it relates to residential and small commercial customers. I will argue that during a transition period, the UDC should offer residential and small commercial customers a BES option that gives them de facto direct access to the competitive wholesale market. This option would include credits for retail service costs that the UDC avoids when customers are served by ESPs. In the short run, the opportunities for providing value-added services to the bulk of these customers is small while the opportunities for increasing the costs these customers pay for electricity loom large. In addition, rate design changes are necessary to properly reflect retail service costs in prevailing rate designs in order to avoid cream skimming and redlining of certain groups of residential and small commercial customers. The BES option strikes a good balance between the promotion of efficient retail competition and consumer protection for smaller customers. For larger customers, the present opportunities for meaningful value added services appear to be much greater than for small customers, direct retailing costs are a much smaller component of total supply costs, the opportunities for customer confusion and exploitation of much less concern, and ESPs are already making significant inroads into these sectors, even in states where they feel that the economic incentives are not as favorable as they would like. Thus, there is little reason why the UDC should offer the large

customers a regulated BES service option at all. For the large customers, the UDC should continue to offer regulated "wires" services, associated customer support services, and continue to collect funds to cover stranded costs and various "public benefits" funds as they do now. Retail electricity supply services provided by ESPs, including utility affiliates, can be deregulated once competitive wholesale markets have been created.[8] Such a policy will channel retail competition toward the development of real value added services for customers, limit wasteful expenditures on advertising and promotion, provide time to rebalance regulated price schedules so that they better reflect costs causality, and protect smaller consumers from exploitation by providing a simple benchmark against which they can compare competing offers.

WHAT DO RETAILERS DO IN OTHER INDUSTRIES?

In other industries, retailers exist and prosper because they add value (real or imagined and I will not distinguish here between the two) to what consumers would receive if they purchased directly in the wholesale market. Retailers can add value in many different ways depending on the nature of the specific goods and services they supply and the evolution of retail service technology. The primary ways in which retailers typically add value are:

a. *By establishing convenient locations at which products are sold, by keeping the retail outlets open at convenient times of day and days of the week, and by providing other services that offer consumers a more convenient way to shop.* Convenient locations allow consumers to conserve on transportation costs. Convenient hours of operation allow consumers to allocate better the scarce time that they have available for shopping. The plethora of "convenience stores" and "24-hour stores" which sell a subset of the products available in

[8] With appropriate cost and behavior separations of the UDC's regulated distribution and competitive

full-line supermarkets are good examples of how convenient locations and hours of operation appeal to consumers. Convenience food+ stores typically charge higher prices than do full-line supermarkets, but they are right around the corner and are always open. Internet sellers like Amazon.com or Buy.com provide a more convenient way for consumers to shop from their homes and businesses. Retail gasoline stations provide convenient locations, arrange for transportation of the fuel from the wholesale terminal, are open at convenient times, maintain an inventory of gasoline in their tanks, stock fuel with different octane ratings, provide credit, etc. The difference between the retail price of gasoline (taxes aside) and the wholesale price of gasoline is the retail margin that retail gas stations rely on to pay for the costs of providing these services.

b. *By selling a wide range of complementary products and maintaining extensive inventories of several brands of each product in a single convenient location.* By offering a full line of substitute and complementary products at the same location, retailers reduce consumer search costs, facilitate comparisons of brands from both a price and quality perspective, and make it possible for a consumer to get the product she wants instantly. A deep inventory of products reduces "stockout" costs. Food supermarkets provide this type of retail value added as do department stores like Bloomingdales or Filenes. Malls provide a way for a variety of retail outlets to collocate to further reduce consumer search costs.

c. *By providing point-of-sale service to consumers.* There are many products for which consumers desire information and assistance in choosing the best product to match their

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retailing functions.

preferences before they make a final purchase choice. This pre-sale information can be provided by retail employees. The value of pre-sale information varies from product to product and from consumer to consumer. A full service personal computer superstore like CompUSA or MicroCenter provides this type of point-of-sale service (as well as the other convenience services noted above) and appeals to many consumers who know little about computers, software and peripherals. Computer mavens who know what they want and do not need further assistance can purchase instead directly from the manufacturer, for example using the Dell, Gateway or Sony web sites. Alternatively, computers and peripherals can be purchased from one of the mysterious virtual retail outlets located in Brooklyn (and elsewhere) that have ads in the Sunday newspapers paper offering amazing savings ($call$) and an 800 number to call to place your order. In either case, a knowledgeable consumer can save some money by buying at an outlet that provides little or no point-of-sale service compared to what she would pay at the full service outlet.[9]

d. *By providing post-sale service and return privileges.* For some products, consumers may need post-sale assistance to make effective use of the product or to deal with defects that are discovered when the product is first used. Some retailers provide this kind of service, but others do not (try getting such service from the mysterious computer outlet in Brooklyn). In some cases consumers may decide, on reflection, that they do not really want the product and seek to return it for cash or credit. For example, Toys-R-Us has an excellent reputation for taking toys back even months after they have been purchased. This kind of service can be quite

[9] Full service retail outlets often must confront a "free rider" problem. Customers come in to get information about a product and then go home and call the 800 number of the virtual retail outlet in Brooklyn to buy the product. The tortured history of antitrust policy governing so-called vertical restraints,

costly, however.[10]

e. *By passing along the benefits of any wholesale market buying power that a retailer might possess in the form of lower retail prices.* Large retailers which can buy in volume can often negotiate lower prices with wholesale suppliers, incur lower average transactions costs, and can pass some of their lower wholesale costs on to retail consumers. Wal-Mart has a reputation for being a tough bargainer with its suppliers. Costco concentrates its wholesale purchases in a restricted set of products to get better deals to pass along to consumers and changes the products it has available in its stores continuously as it follows the opportunities to get products at lower prices in the wholesale market. [11]

f. *By developing innovative retailing technologies that reduce retailing costs and allow retailers to pass the savings along to consumers.* Retail margins are lower in the U.S. than they are in almost any other OECD country. Moreover, we are in the midst of a retailing technology revolution that is placing even more pressure on retail margins. Even if an innovative retailer cannot provide better service, it may be able to reduce retailing costs and retail margins significantly by adopting more efficient retailing technologies. Sectors in which retail margins are particularly high are natural targets of opportunity for retailers who can develop and deploy more efficient retailing technologies and pass the retail cost savings along to consumers in the

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such as resale price maintenance, reflects conflicts between full-service and no-frills service retailers.

[10] Toys-R-Us has another attractive service. They will put the toys together for you, but for an extra fee. I have always found the fee to be very reasonable compared with the alternative of assembling the toys myself.

[11] Costco also reduces costs by increasing the minimum size of retail purchases. Costco is not the place to go if you want a half-pound of frozen shrimp. But if you want ten or more pounds of shrimp Costco will offer you a good price.

form of lower prices. This is one of the promises of Internet retailing, though for many internet retailers the costs of advertising and promotion are becoming an increasing challenge.

g. *By developing a reputation for providing accurate information about product quality and delivering on promises about product attributes and post-sale service made to consumers*. Many consumers place some value on dealing with a retailer who they can trust. This is especially true when the products they are purchasing are of particularly high value, where buying from a disreputable retailer may be especially costly, and/or where customer switching and search costs are high relative to the cost of the product. Developing and capitalizing on a reputation for providing high quality service is an increasing challenge for retailers as the population becomes more mobile, retail purchase options expand, and advertising provides more misinformation than information.

Retailers mix and match the provision of these different types of value-added services in many different ways as they try to appeal to consumers with diverse preferences, search costs, and information acquisition and processing costs. The activities of retailers as well as the cost and magnitude of the value added they bring to the economy varies widely from industry to industry depending on each industry's attributes. The nature and costs of retailing services also vary over time as consumer preferences change, search and information costs change, and new technologies for delivering retail services are deployed. Large commercial and industrial customers typically buy goods and services through different retail channels, or directly from manufacturers, than do individuals and small business customers. Several things are clear, however. We have seen enormous innovations in retailing generally in the last few years. These innovations have made it significantly more convenient for

consumers to shop for goods and services. The trend in retailing around the world has been to squeeze retail margins and to reduce the number of levels in the sales chain, so that retail consumers can get "closer" to the wholesale market.[12] Successful retailers must provide value added to consumers over and above the value that they get if they buy at wholesale or at a less costly retail outlet. This is the only way that retailers can collect a retail margin to cover their advertising, promotion, inventory, credit, rent, display, sales, and overhead costs. No incremental value added, no incremental retail margin!

PHYSICAL ATTRIBUTES OF ELECTRICITY AND IMPLICATIONS FOR RETAILING

Electricity has a number of peculiar attributes that are relevant for understanding where retail value added is likely to be found and where it is not:

a. The availability of convenient locations, convenient shopping times, a deep product inventory, a wide range of brands available under one roof, post-sale service and return privileges have few natural analogies with regard to the supply of retail commodity electricity. There is generally no direct physical relationship between a specific generating source and a specific retail customer or group of retail customers. The electricity produced by a generator goes into the pool of electrons and consumers and consumers take electricity out of the pool of electrons. The product gets delivered to everyone's door by the UDC and is automatically available every second over the UDC's distribution wires regardless of which ESP a retail customer has chosen to represent her. Electricity cannot be economically stored by the ESP. You can't return it. The reliability of service depends on the state of the network and supply

[12] Office supply superstores like Staples and Office Depot initially focused on provided "large customer discounts" to small businesses. Internet-based sales by companies like Dell allow individuals and small businesses to buy directly from the manufacturer as only large companies had previously been able to do.

and demand conditions in the wholesale market not on the individual retailer supplying a particular customer. When a generator fails to supply the customers of a retailer who has contracted with that generator, or the retailer runs off to Brazil without paying its bills, the retail customer continues to get electricity from the network as long as the customer pays her bills. In all of the organized wholesale markets in the U.S., the retailer whose generation supplier has failed to supply electrons to the system to match its contractual obligations now simply owes the network operator, which continuously balances physical supply and demand in the system, an imbalance payment. The retailer can then try to get the money back from the generators that breached their supply agreements.

The bottom line is that an ESP using the public distribution and transmission network only to buy and resell wholesale power cannot provide individual customers with more convenient delivery locations or change the basic reliability of the delivery of electricity to the customer. Regardless of the retailer chosen by a customer, the electricity gets delivered on the same wires and draws from the same pool of electrons with the same reliability.[13] Thus, the nature of a monopoly distribution and transmission network sharply constrains the ability of electricity retailers to do some of the most important things that retailers in other industries normally exist to do.[14]

b. Retailing commodity electricity *per se* (i.e. ignoring metering, various behind the meter

[13] As I will discuss presently, customer specific reliability and power quality enhancements generally require investments on the customer-side of the meter. This is an important value-added service that ESPs can and do provide to customers.

[14] This can be contrasted with what is evolving in telecommunications and information services where there are competing local "facility-based" service providers. The development of competing wireline, wireless and satellite delivery system has been accompanies by many product innovations that are integrated into the local delivery facilities themselves.

services, and other complementary services for the moment) involves primarily a set of financial relationships rather than physical production and delivery obligations. ESPs do not have to own any physical electricity production, transmission or distribution assets to be in business. They can buy electricity for resale in the wholesale market and do not need to own or operate any generating plants. They are not "facility-based competitors" in physical distribution or transmission. These services are acquired from the UDC. An ESP need not even have the capability to read a meter or render a bill under current arrangements but can typically rely on the UDC to do both on the ESP's behalf. As far as commodity electricity provided over the public network is concerned ESPs are primarily financial intermediaries between wholesale generation supply market institutions and the retail consumer.

c. At the present time, the way that retail consumption of electricity is measured for 99% of the consumers is poorly matched to the way electricity is traded in the wholesale market. Wholesale electricity prices and quantities vary at least from hour to hour and can vary more frequently. The variations in wholesale market prices over the course of a month can be a factor of 100 or more. Electricity consumed at 2 PM on a hot September day may be $500/Mwh and at midnight only $25/Mwh. But virtually all retail electricity consumption is measured on a monthly or semi-monthly basis. How then can we organize the system to properly charge a retail customer who has his air conditioner on full blast on a hot September day differently from the consumer who was on vacation in Canada that day? How do you match up a retailer's retail supply obligations with its retail customers' consumption from the system? The answer to these questions is that you can't without installing metering equipment that matches retail use with the contemporaneous wholesale market prices.

Promoting customer choice for all retail customers without requiring more sophisticated metering has made it necessary to rely on costly and highly imperfect load profiling systems. Load profiling takes the monthly consumption on the meter --- e.g. 1000 kWh --- and transform it into hourly consumption based on the consumption patterns of a sample of "similar" consumers who are placed on hourly interval meters. This is like a supermarket charging for a cart of groceries based on the average cost per pound of groceries in a sample of shopping carts that passed through the cashier's desk rather than based on the individual items in the cart.

HOW CAN ELECTRICITY RETAILERS PROVIDE VALUE ADDED?

Given these peculiar attributes of electricity supply, where are the retail value-added opportunities likely to lie in the electricity sector? Popular discussions of electricity retailing tend to focus on “head to head” price competition with the UDC’s basic electricity service by retailers who simply buy commodity electricity at wholesale and resell it at retail. While there may be some real value-added opportunities associated with this type of retailing, I will argue in the next section that these opportunities are likely to be small, especially for residential and small commercial consumers. Moreover, if buying electricity in the wholesale market and then simply reselling it at retail is the primary way that ESPs envision engaging in retail competition, there is little social value associated with it and, indeed, retail competition may be socially costly as a consequence of increases in aggregate marketing, advertising, promotion, billing, settlement and transactions costs associated with retail competition. *Retail competition beings additional costs into the system. We should expect a successful retail service program to provide consumer benefits that exceed these costs.* If retail competition is to be socially beneficial compared to BES (allowing retail customers to buy directly in the wholesale market) it must focus on a broader set of retail-valued added opportunities than simply buying and reselling

wholesale commodity electricity. Let me discuss the major potential areas where opportunities for retail value added services are likely to lie in electricity.

a. *Reducing the costs of retailing electricity.* The most straightforward way that ESPs might provide value added is simply by deploying less costly technologies for supplying those aspects of retail customer service (e.g. metering, billing, customer service) that are opened up to competition and which presently support basic electricity service now provided by UDCs. The savings in retailing costs could then be passed along to consumers in the form of lower rates. Internet retailers like www.utility.com and www.essential.com hope to use their internet platforms to reduce marketing and billing costs.

The opportunities for retail competition to reduce retailing costs overall depends upon a number of factors. These factors include: which retail services are opened up to competition; the nature of residual UDC obligations to provide customer services other than pure "wires services"; the magnitude of the UDC retailing costs that are avoided when customers choose ESPs; the way in which UDC retail service costs are presently reflected in retail rate designs; the costs that retailers incur to provide customer services. These factors also determine how much "retail margin" should be included in the BES benchmark service outlined earlier against which ESPs can compete and also whether competition actually increases social value added or merely exploits imperfections in the way regulators have allocated costs in prevailing rate designs.

b. *Superior wholesale power procurement*: If an ESP can buy wholesale electricity at a lower price than the prices prevailing in the organized wholesale market it can attract customers from the BES offered by the UDC by offering to sell electricity to them below the "generally available" wholesale market price. For example, an ESP may be able to achieve lower cost supplies by striking bilateral

forward contracts with generators. The contracts can support price hedges with the ESP's customers and can be used by generators who secure these contractual commitments to secure lower cost financing.

c. *Installation of more sophisticated metering and control technology*. Clearly, an important potential way for retailers to add value would to deploy more sophisticated metering and control technology to allow customers to see the variation in wholesale prices and to rely on ESPs to help them to manage their energy needs accordingly. One of the critical preconditions for retail consumers taking full advantage of competitive wholesale electricity markets is for them to see and be able to respond to wide variations in the prices in the wholesale market. This requires meters that measure consumption on an hourly basis and communications and control equipment that allow retail customers to participate as active demand-side bidders in the wholesale market. Consumers can then adjust their consumption patterns to reflect hourly price variations and increase the net value they receive from consuming electricity. Communications and control equipment that allows them to participate in the day-ahead and even hour-ahead market would give consumers even more flexibility in this dimension. Moreover, by creating an active demand side in the wholesale market, the performance of wholesale markets could improve significantly. It particular these activities could help to mitigate performance problems that have emerged in California and New England during tight supply situations when demand has zero price elasticity.

At the present time, this type of sophisticated metering and control equipment is economical only for larger customers. These costs are likely to fall over time, however, as communications, remote sensing and control technology advances. And perhaps someday when we all have fast internet connections and our refrigerators and washing machines have internet connections and control devices

as well, companies like Essential.com and Utility.Com will be able to provide remote real-time metering and demand management services to residential and small commercial customers. This is unlikely to be reality for most small customers in the near future, however.

c. *Hedging market price risk for customers*. If we take the most basic "buy it at wholesale" option as buying in the wholesale spot market, the consumer who buys electricity in the wholesale market has to confront significant price volatility. Since most consumers are risk averse, a demand for insurance or price hedges should be out there. However, the demand for price hedges is intimately related to the application of more sophisticated metering. If a customer's meter is read only once a month or once every two months and the customer's bill is determined by running these meter reads through a group load profile, a significant amount of the variation in prices necessarily gets averaged out this way. There is no intra-month price variability seen by the consumer at all with conventional monthly metering. Accordingly, the opportunities for ESPs to offer customers contracts that hedge price risks is related to the deployment of metering technology that allows customers to see the variations in wholesale market prices and to then evaluate what they are willing to pay to hedge the price volatility in the wholesale market.

d. *Hedging Weather and Other Consumption Uncertainties:* A typical consumer's demand for electricity varies with changes in weather patterns as a result of the associated variations in the demand for heating and cooling services. Thus, the volatility of a customers bill depends on both price volatility and weather variability. Moreover, extreme weather conditions are likely to be positively correlated with prices. When it is very hot, both electricity consumption and electricity prices will be relatively high. Risk averse consumers may see value in a weather-related insurance products that

mitigate both price and quantity risks.

e. *Behind the meter applications designed to provide higher quality services*. Design, construction and operation of on-site generating facilities, continuous power supplies and equipment to improve power quality can customize power supply quality attributes to better satisfy diverse consumer preferences for superior power quality and reliability. Energy management and energy efficiency investments also fall in the same category. Of course, there is no monopoly now on offering these services. Here the sale of commodity electricity is simply an add-on to the sale of power quality and supply reliability enhancing services.

f. *Green power*. Some consumers have revealed a preference for buying their electricity from environmentally benign sources. That's a fine thing and it's a service that should be available to consumers in a competitive market. Green power is not without some potential problems. For the reasons already discussed, the sale of green electricity products has a significant potential for misleading sales tactics because one can't physically direct only green electrons to a particular customer and distinguish them from brown electrons. At least in the short run if "green marketers" don't actually dispatch green generators that would not otherwise be dispatched based on their straight economics, every customer who purchases 500 kWh or green electrons, necessarily leads to another customer purchasing an additional 500 kWh of brown electrons. As a result, detailed auditing requirements have been urged by environmental groups which like green power sold, but want it to make a real contribution to reducing pollution.

g. *Total Energy Management/Utility Services*: Large commercial and industrial customers,

especially those with multiple production and sales sites spend considerable amounts of money procuring energy and managing their use of energy. For multi-site firms this task is complicated by having to deal with many different energy supply companies operating under rules and regulations that vary from state to state. These customers sometimes have costly internal energy procurement and management departments. Consumers in this situation have expressed a desire for "one stop shopping" for their energy needs (electric, gas, oil supplied around the country) and are interested in outsourcing the management of their energy procurement and utilization. ESPs can provide these customers with significant value added by serving all of their energy management needs in an integrated fashion. Enron appears to have focused on providing this type of service to commercial and industrial consumers.[15] Other services such as telephone and internet access could be added to the package as well. This type of service bundling is also emerging for residential customers. For example, www.essential.com[16]sells all of these services on the same internet site, bundles some of them together, and relies on internet billing. Joint sales, marketing, billing and bundling several services together can help ESPs to exploit economies of scope and conserve on marketing, promotion, and billing costs and reduce the average cost of retail services measured. This strategy may also be attractive to retailers so that they can develop relationships with consumers that can be utilized to sell them still other services.

Potential Social Value of A Robust Retail Market: As I have already indicated, there is also potential *social* value added associated with the development of a successful retailing sector. These social benefits are a consequence of the relationships between the wholesale market and the retail market. It has become clear from the experience in California, New England, and other areas of the country that the performance of wholesale markets is undermined by the absence of an active demand

[15] "Enron Does Deal with Pink Panther's Parent," *The Electricity Daily,"* September 27, 1999, page 2.

side (zero demand elasticity) and robust forward contracting activity. The absence of any short-run demand elasticity and limited forward contracting affects the incentives generators have to withhold supplies to drive up prices during tight supply situations. By successfully selling consumers price-sensitive energy contracts and contracting forward for supplies to meet their obligations to retail consumers, ESPs' wholesale market activities could reduce wholesale market price volatility and help to mitigate wholesale market power problems, especially during tight supply situations. However, short run price responsiveness can only be stimulated for those customers who can actually see the day-ahead and real time prices and have the metering, communications and control equipment that makes it possible for them to respond to it. Moreover, the incentive to pay for price hedging services will be reduced if customers do not have hourly interval meters since monthly averaging will hide the underlying price volatility. At the present time, the greatest opportunities for successfully marketing these types of services lie with larger customers for whom the benefits of load management, in terms of lower electricity bills, can pay for the necessary metering, communications, and load control costs.

Another way that ESPs can have a positive impact on wholesale markets is by increasing the number and diversity of buyers in these markets. At the present time UDCs are the primary buyers in wholesale markets. While in many regions of the U.S. there are a large number of UDC's on the buying side, including municipal and cooperative distribution companies, expanding the number and diversity of purchasing activity can increase market liquidity and increase opportunities for generators to lay off risks in the market at competitive prices. The dramatic growth in wholesale marketing activity over the last three years, combined with generation divestiture and the growing portfolios of industrial and large commercial loads turning to ESPs suggests that we are already on a path to mitigating remaining market liquidity problems in those regions of the country that have adopted retail competition programs.

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[16] See also http://www.telenergy.com and http://www.enermetrix.com/.

Extending policies to the rest of the country which at least functionally unbundle all generation from distribution, settle stranded cost issues, and require all generation supplies to be sold at market-based rates, will necessarily bring more UDCs (as buyers for their retail loads) and more generators (as sellers) into the wholesale market and will have the greatest positive effects on increasing market liquidity.

BENCHMARK PRICES

Most of the valued added opportunities that I have just discussed represent additional services, over and above the services that I have included in the benchmark basic electric service (BES) that gives retail consumers direct access to the wholesale market. The costs of providing these services, if they are of sufficient value to customers, should be recovered from higher prices that retailers can charge for these enhanced services. That is, retailers will have to look to customer's willingness to pay higher prices for enhanced services as the source of the retail margin they need to cover the additional costs of providing these services. Nevertheless, since much of the current discussion of retail competition, especially for small residential and commercial consumers, seems to focus on ESPs simply buying wholesale commodity electricity and reselling it at retail, and competing against the UDC's standard offer or default service based solely on price, it is useful to develop a set of benchmark prices and costs to provide a framework for discussing the potential social value added that ESPs bring to the system *if* reselling commodity electricity is their primary activity.

The primary goal of electricity restructuring in the U.S. is to create a system that, at the very least, would yield lower prices for consumers compared to the prices they would have paid if the old paradigm had continued, holding service quality and reliability constant.[17] The hope is that competition

[17] This has not been the goal of electricity restructuring in all countries. In many developing countries

will bring both lower costs and prices for "plain old electricity service" as well as innovative enhancements to the services available to electricity consumers for which consumers would be willing to pay something extra. In the absence of retail competition, the regulated retail prices paid by retail customers for utilities that have gone through restructuring, had their stranded costs valued, and participate in an organized competitive wholesale market, can be broken down into several components, some of which have or can be unbundled and opened up to competition:

Benchmark Regulated Retail Rate

The regulated bundled retail rate (P_T) of a typically vertically integrated utility has several major cost components:

$$P_T = G_w + S_g + T\&D + DSM + R_T = \text{Average total UDC bundled price/kWh}$$

Where:

G_w : Market value of generation services based on wholesale market prices

S_g: Stranded generation costs

T&D: Transmission and distribution costs, including ancillary services costs supplied by the network operator

R_T : Total retail service costs (metering, billing, customer care, energy procurement, etc.)

$R_T = R_m + R_c$

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electricity prices were too low, the quality of service was poor, and the sector was unable to attract investment to balance supply and demand efficiently. These problems have not been the motivation for electricity restructuring in the U.S.

R_m: Retail customer service costs for services the UDC is obligated to provide

R_c : Avoidable retail customer service costs for UDC services opened up to competition and provided by ESPs

DSM: Charges for energy efficiency and other "public benefit" (e.g. low-income) programs

For future reference, the average U.S. IOU Bundled Retail Price/kWh in 1997 for the standard broad customer classes was:

All Customers:	7.1	cents/kWh
Residential:	8.9	cents/kWh
Commercial:	7.8	cents/kWh
Industrial:	4.7	cents/kWh

In most of the following discussion I will assume that the stranded generation cost (S_g)and the public benefit (DSM) components of the utility's costs have been defined by regulators and are non-bypassable. *In addition, I will assume that a policy decision has been made to make customers' responsibility for stranded cost recovery independent of whether the customer chooses to be supplied by an ESP or continues to get basic electricity service from the UDC.* California and some other states have adopted this principle. The transmission and distribution component (T&D) of UDC rates is assumed to be regulated and to be non-bypassable as well.[18] The wholesale generation cost component (G_w) is based on the metered consumption of each customer, load profiling protocols in

[18] I recognize that there are some interesting distribution bypass issues, but I do not plan to discuss them in this paper.

effect, and the spot market prices for generation services acquired in the wholesale market. Retail services costs ($R_T = R_m + R_c$) reflect the total costs of metering, billing, bad debts, customer services, power procurement and any advertising costs that are presently recognized as being allowable costs for ratemaking purposes. The division of R_T into components R_m and R_c depends on regulatory policies I will discuss presently.

We can now construct two different conceptualizations of Basic Electric Service (BES) that gives UDC to customers who do not choose an ESP direct access to the wholesale market:

1. *Basic electricity service <u>without</u> unbundling of any retail customer services*:[19]

   Distribution Service Charge: $P_d = S_g + T\&D + DSM + R_m + R_c$

   Basic Electricity Service Charge: $P_{bg} = G_w$

A customer selecting an ESP continues to pay P_d to the UDC and pays the ESP for the generation service it provides. The ESP is responsible for imbalances in the wholesale market and continues to rely on the UDC to do metering and billing for the ESP.

[19] This could also be viewed as the price structure that would prevail in cases where some customer services are opened up to competition and unbundled, but where ESPs have the option of not supplying substitute customer services and continuing to rely on the UDC to provide them.

2. *Basic electricity service with unbundling of certain customer services that ESPs must provide to the customers they serve.*[20]

Distribution Service Charge: $P_{du} = S_g + T\&D + DSM + R_m$

Basic Electricity Service Charge: $P_{bgu} = G_w + R_c$

The division of total retailing costs (R_T) into a fraction (R_m) that the UDC, continues to recover from all customers and a fraction (R_c) that can be displaced by an ESP providing substitute customer services for those supplied by the UDC depends on what services the UDC is obligated to continue to offer to supply to some or all distribution customers, which services are opened up to competition, and how any retail transition costs are to be handled. R_c then represents the "retail margin" that an ESP has available to it to provide the *equivalent* of BES provided by the UDC without *increasing* the total price that a retail customer would have to pay as a result of retail competition. If an ESP is competing to supply the equivalent of BES it must cover its own retailing costs and provide any discount to attract consumers out of this margin unless it can convince consumers to pay more for what they would otherwise get from the UDC at a lower price or provide them with value added services to support a higher retail margin.

CURRENT UDC RETAIL SERVICE COSTS

In order to evaluate the potential opportunities for ESPs to compete primarily on the basis of providing more efficient retailing services and offering lower prices to reflect these efficiencies, it is useful

[20] To the extent that the UDC is required to stand ready to supply "competitive" customer services to ESPs requesting them, the effect will be to increase R_m. Moreover, if ESPs can rely on the UDC as a backstop to provide any retailing services the ESP chooses not to provide, there could be serious adverse selection problems since ESPs would have an incentive to choose to provide metering and billing services to those customers to whom it is cheap to provide these services and to lean on the UDC to supply these services to customers who are expensive to serve. How important this adverse selection problem will be will depend on exactly how retailing costs are unbundled and the details of the UDC's obligation to serve.

to get a sense for the magnitude of the retailing costs that are embedded in regulated UDC prices. This is not so easy to do since retail rates are not typically broken down in a way that identifies a separate price for retailing service. However, it is possible to go back to the FERC Form 1 data to develop rough estimates of the total costs incurred by a UDC is providing retail customer services of the types discussed above (R_T).

I have made a set of estimates of the total embedded costs of providing retail service using readily available FERC Form 1 data for 1996.[21] I have included in retailing costs all O&M costs listed in the following categories: meter reading, meter maintenance, customer accounts expenses (including bad debts), customer service and information expenses, and sales expenses, including advertising. I have also developed capital carry costs (depreciation, interest, return on equity and taxes) for meters and general plant, including a large fraction of IT facilities. The range of estimates is reported in a number of different ways in Table 1.

The estimated average cost of *all* retailing services R_T varies between 2.7 mills per kWh and 3.8 mills per kWh, between $5.80 and $8.25 per customer per month, and amounts to between 3.3% and 4.7% of total retail revenue.[22] The lower number includes all identifiable O&M costs (including bad debts) and the higher number includes the capital carrying costs of

[21] I have relied primarily on the Energy Information Administration's *Financial Statistics of Major U.S. Investor-Owned Utilities*," the latest version of which available when I made these calculations had data for 1996.

[22] This amounts to between $6.3 billion and $8.9 billion in the aggregate. It's not peanuts.

TABLE 1

AVERAGE EMBEDDED RETAILING COSTS

Per Kwh:	0.27 - 0.38 cents/Kwh
Per customer:	$5.80 - $8.25 per month

Retailing Costs Included: Meter reading, meter maintenance, meter carrying charges, billing costs, bad debts, customer services, advertising and promotion, A&G allocation. Calculated from data reported in *Financial Statistics of Major U.S. Investor-Owned Utilities (1996)*, U.S. Department of Energy, Energy Information Administration.

meters[23] and a good chunk of general plant.[24] Some of these costs are likely to continue to be incurred by the UDC even if all retail customers are served by ESPs (R_m). Some of these costs may be avoidable as retail customers move to ESPs (R_c).

These estimates indicate that total retailing costs incurred by UDCs are, on average, relatively small. Even if we assume, contrary to fact, that *all* of the retail service costs that I have identified are potentially avoidable as retail customers turn to ESPs *and* that ESPs can supply these services at a 25% lower cost, the potential reduction in the average customer's bill would be less than 1% or about $2 per month by switching to an ESP that passed along *all* of the cost savings. Moreover, there are good reasons to believe that aggregate customer service costs may actually increase as customers shift to ESPs. ESPs necessarily incur advertising and promotion costs to attract customers and to establish a brand name. Historically, there has been little advertising, promotion and marketing costs in the retail cost structures of most utilities.[25] Under the old regulated monopoly paradigm, consumers who needed electricity for lights, appliances and equipment, knew where to turn to buy it (no choice!). Most utilities were restricted in advertising to promote electricity use. With competitive retailing, advertising, marketing and promotion costs associated with electricity supplies are likely to increase significantly as ESPs compete to attract customers.[26] Other things equal, this increase in andvertising and promotion

[23] The carrying costs for meters are probably an overestimate since customer meters and meters at substations and other points on the network do not appear to be separated in these summary Form 1 data.
[24] Several commentators have suggested that my estimates are high, though the orders of magnitude are correct. The estimates may be high because some of the costs that I captured from the FERC Form 1 data (e.g. certain meter maintenance and carrying costs) may be more properly characterized as distribution or transmission rather than retail service costs because they reflect costs of metering flows on the distribution and transmission systems. In addition, even a UDC which provides only "wires" service will still incur customer service costs to respond to requests to connect, disconnect and change the level of service, to provide general information to consumers, to respond to outages and power quality problems, and to interface with ESPs.
[25] Utility advertising expenses amounted to less that 0.5% of the retail service cost estimates that I previously provided and total sales costs amounted to about 5% of total retail service costs.
[26] With current technology, meter reading for residential and small commercial customers may be

costs necessarily means that retailers will require a *higher* margin, over and above the competitive wholesale market cost of commodity electricity, than is now embedded in a utility's cost structure, to make a profit if they offer no other value added services. Unless ESPs can reduce other components of retailing costs (e.g. lower meter reading, billing, and customer service operating costs) or sell other value added services, the only way for them to cover the increased advertising and market costs they bring to the system is for retail electricity prices to increase compared to BES.

The competitive environment facing ESPs, the opportunities for ESPs to provide net value added, and the overall societal effects of retail competition depends not only on the average level of UDC retailing costs and the costs that retailers would incur for comparable services, but also on the distribution of retailing costs among customers with different utilization and demographic characteristics. Customers vary widely in the quantity of electricity that they consume and the costs of providing them with customer services. Accordingly, discussions of electricity retailing and retailing costs that focus only on averages, as has my discussion so far, can be misleading. There are two relevant dimensions to the distribution of retail service costs. The first dimension reflects cost causality. How do retailing costs vary as the attributes of the customers served varies? The second dimension reflects regulatory cost accounting procedures. How are UDC retailing costs allocated across customer classes (inter-class allocations) and in rate structures within customer classes?

From the cost causality perspective, retail service costs are likely to be driven more by the number of customers served by the UDC and individual customer credit histories than by the quantity of electricity consumed by individual customers. Retail service costs are driven by the costs of reading meters, creating and mailing bills, responding to requests to initiate or terminate service, responding to

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especially difficult to accomplish economically by ESPs if many different companies are reading meters for a small fraction of the customers in any given neighborhood. The meter reader now has to walk or drive by a lot of houses whose meters she does not read.

billing inquiries, following up with customers whose bills are delinquent, and bad debt costs. Many of these costs are unlikely to vary much with the quantity of electricity consumed by individual customers. The retail service costs for a residential customer (like me) who consumes about 1,200 kWh/month are unlikely to be three times as great as the retailing costs for a residential customer who consumes 450 kWh/month. To a first approximation, the retailing costs for these two customers are probably about the same. Indeed, to the extent that the average low-use customer has a lower income, is more likely to have credit problems, and changes residences more frequently, the retail service costs for a low-use customer may actually be larger (in absolute amount) than the retailing costs for a customer like me who pays his bills on time every month, has not moved in 20 years, and has never called the UDC's call center except to report an outage. If ratemaking procedures follow cost causality principles, then a large fraction of retail service costs should be allocated equally across customers and only small fraction allocated based on utilization (demand and kWh) and related customer characteristics.

It is extremely difficult to determine how retailing costs have been factored into retail rate designs and which cost allocation rules are applied in different states. My guess is that little thought has been given to these issues in the past because the costs involved are relatively small and there was no competition to exploit gaps between accounting costs allocations and the true economic cost of supplying retailing services to different types of customers. There are two issues here. One is the regulatory allocation of costs between customer *classes*. The second is the regulatory allocation of these costs *within* customer classes between customer charges that do not vary with kW/kWh usage and usage-related customer charges that vary with a customer's peak demand and kWh consumption.

TABLE 2

ALTERNATIVE RETAILING COST ALLOCATION METHODS

Per Kwh Allocation	Average Embedded RCS Cost/Month
Residential:	$ 2.25 - $ 3.20/month
Commercial	$ 15.30 - $ 21.75/month
Industrial	$407.50 - $578.70/month

70% Customer/ 30% per kWh Allocation	Average Embedded RCS Cost/Month
Residential	$ 4.75 - $ 6.73/month
Commercial	$ 8.66 - $ 12.30/month
Industrial	$126.33 - $179.38

Retailing Costs Included: Meter reading, meter maintenance, meter carrying charges, billing costs, bad debts, customer services, advertising and promotion, A&G allocation.

Table 2 displays the ranges for the average annual total "retail service bill" for residential, commercial and industrial customers based on different interclass retail service cost allocation assumptions. The first allocation rule allocates all retailing costs on a per kWh basis. The second allocates all costs 70% on a per customer basis and 30% on a kWh basis. It is evident from Table 2 that the retail service costs attributed to different types of customers in current rates varies widely depending on the regulatory cost allocation rule utilized. Using a mid-range estimate for total retail service costs, average simulated residential customer retail service bills (including both avoidable and fixed RCS costs) vary from $2.25 to $6.73 per month, average commercial customers' retail service bills from $8.66 to $21.75 per month, and average industrial customers' retail service bills vary from $126.33 to $578.70 per month, depending on the cost allocation method used. Additional variance would be introduced the more *intra-class* retail service costs are allocated on a per kWh basis rather than on a per customer basis. For example, many states implicitly subsidize low-use customers by setting the monthly customer charge at a very low level that is unlikely to recover all of the fixed costs associated with being a customer. Fixed customer costs include both some fraction of these retail service costs as well as costs associated with the "customer specific" portions of the distribution system. If the monthly customer charge is set at a level below the fixed customer cost then the residual is being recovered (shifted) in per kWh charges.

Clearly, the allocation of retail customer service costs to customer classes and within customer classes has important potential implications for the retail margin potentially available to ESPs serving different types of customers. For example, if cost causality implies an allocation such as the 70/30 allocation utilized in Table 2, a regulatory allocation procedures that, instead, allocates retailing costs based on kWh utilization could create significant distortions affecting the attractiveness of different types of customers to ESPs. In this case, small residential and commercial customers are likely to represent

relatively unattractive sales opportunities to ESPs, since the retailing costs allocated to them when they take BES from the UDC, and the associated retail margins that an ESP would have to live with if it attracted such customers, are below the true cost of supplying these small customers with retail service. On the other hand, commercial and industrial customers with high consumption levels may look much more attractive to ESPs purely on retail cost-savings grounds. Indeed, an ESP doesn't even have to be a more efficient supplier of retailing services than the UDC in this case for large customers to be attractive to them because the allocation of retailing costs in their UDC rates far exceeds what it actually costs the UDC to provide them with retail services.

If retail rate designs do not reflect cost causality and retail service costs are allocated instead based on customer-specific demand and kWh charges, retail competition can lead to the following effects: (a) retailing efforts will focus on relatively high use customers with good credit records; (b) as these customers shift to ESPs the retail service revenues produced by the remaining UDC BES customers will not cover their retailing costs since the cost savings associated with customers who do switch are less than the revenues lost when they switch; (c) retailing costs reflected in the UDC charges for the remaining BES customers will tend to rise as more of the retail costs are allocated (properly) to them; and (d) total retailing costs may increase as ESPs spend significant sums to compete aggressively to attract large customers with good credit records because regulatory cost allocation rules have created an artificial retail margin for these customers that far exceeds the true cost the UDC incurs to provide them with retail service.

If one believes that a significant benefit of retail competition --- compared to the benchmark BES described earlier --- is to be realized from driving the costs of providing retail service down, then it is important to ensure that if and when retail service costs are unbundled it is done so in a way that properly reflects cost causality. This is likely to require increasing non-usage sensitive customer charges

for residential and small commercial customers and decreasing utilization charges for distribution services by an equivalent aggregate amount.

These considerations lead me to conclude that if all ESPs do is to acquire electrons in a competitive wholesale spot market and then simply resell them to retail customers with a margin added to the wholesaler price, there is not likely to be much consumer value added in competitive retailing of electricity. Indeed, if retail electricity competition focuses only on effectively providing unregulated BES, in the absence of the continued availability of a regulated UDC supplied BES, the competitive equilibrium for residential and small commercial consumers could easily be characterized by higher overall retail service costs and higher prices for residential consumers.

The case for, and the evaluation of the performance of retail competition, should focus more on the ability of a competitive retailing system to provide some or all of the other dimensions of value added that I discussed above. We want to encourage retail competition if the ESPs that are competing are able to provide value added services to consumers that are not readily available today through a direct access wholesale tariff offered by the UDC. That is, we must distinguish between the benefits of *wholesale generation market competition*, which can be passed along to consumers in a cheap straightforward manner as discussed above, and the *incremental* benefits of retail market competition. In the end, whether there is a viable market for these value-added services, and what share of the UDC's retail customers with access to BES switch to an ESP from BES, should depend on whether or not ESPs can find customers willing to pay enough to cover the costs of providing these value added services. If few customers switch it does not necessarily imply either that retail consumers are not getting the benefits of competition or that unreasonable impediments restrict the expansion of ESP market shares. The low switching rates could simply mean that ESPs have been unsuccessful in finding value added services that makes it attractive for consumers to buy at retail rather than at wholesale. The

way to evaluate the success of retail competition is not to look at the number of customers who switch, or at ESP market shares, but at the value added services being offered by ESPs to various customer groups and their costs. *Since many of the value-added services that I have discussed are very difficult and costly to provide to small residential and commercial customers, it should not be surprising that retailers will find it difficult to compete against BES that offers consumers direct access to the wholesale market by providing standard offer or default service options that reflect wholesale market prices for electricity. The problem is not that BES is "too cheap" but that the ESPs have not found value added services to sell that are attractive to customers.*

STIMULATING RETAIL COMPETITION TO PROVIDE VALUE-ADDED SERVICES TO RETAIL CONSUMERS

These considerations lead me to the following preliminary conclusions about retail competition, as it relates to residential and small commercial customers: (a) at the present time retail competition is unlikely to provide much value added over a BES option that gives these customers direct access to the wholesale market; (b) retail competition may actually lead to higher retailing costs and higher prices overall; (c) simplistic unbundling of retailing costs (e.g. in kWh charges) can stimulate cream skimming and other adverse selection problems; and (d) unbundling retailing services and their costs in a way that does not lead to such adverse selection problems is likely to require significant rate rebalancing that will increase prices for consumers who use relatively small quantities of electricity and require the adoption of standard commercial practices for customers who pay their bills late or are credit risks.

In light of these conclusions, I believe that electricity retail competition policy for residential and small commercial consumers should pursue two primary goals: (a) provide a cheap, simple way for residential and small commercial customers to buy directly in the wholesale market through the UDC's

passive passthrough of wholesale spot market costs for a transition period; (b) create an economic environment that harnesses the power of competitive retailing to provide value added services of the type I have discussed (or others ESPs may develop); and (c) ensure that the allocation of any UDC retail service costs that are unbundled to face competition from ESPs reflect cost causality in order to mitigate cream-skimming, adverse selection, and associated waste and inequities.

If one accepts these conclusions and policy goals, it could rationally lead to the policy conclusion that the appropriate strategy is not to open up the residential and small commercial market to competing retail suppliers at all at this time. The costs of load profiling, increased settlement complications and costs, the difficulties of reallocating retail service costs, and a variety of potential consumer protection problems may simply make retail competition for these customers a cost increasing and value-reducing proposition. Instead, residential and small commercial customers would effectively be given the opportunity to buy electricity in the wholesale market at the competitive wholesale market. This could be accomplished by offering residential and small commercial customers what I referred to earlier as Basic Electricity Service without unbundling of any retail customer service costs (RCS), and without the option of being served by an ESP. The unbundled rates would take the following form:

BES Without RCS Unbundling

Distribution Service Charge: $P_d = S_g + T\&D + DSM + R_m + R_c$

Basic Electricity Service Charge: $P_{bg} = G_w$

Residential and small commercial customers would get the full benefits of wholesale market competition through their direct access to electricity at the wholesale market price (G_w). This service could be

enhanced by providing, for example, options to buy portfolios of green power at a premium price (G_{wg}) determined by competitive bidding by wholesale suppliers or by the prices in organized markets that included green power options, such as the market operated by the Automated Power Exchange in California (e.g. $G_{wg} \geq G_w$). This appears to be the approach that Oregon is taking for residential customers.[27] As time goes on and the retail market for larger commercial and industrial customers matures, the restrictions on retail competition as they apply to smaller customer can be relaxed as retail competition, consumer information, and the availability of value added services develops further. That is, at a future time when residential and small commercial customers can benefit from the "trickle down" opportunities that may be available from a mature retail market involving larger customers.

While this would seem to me to be a very sensible policy, it has some potential problems.[28] First, as a practical matter it's too late to withdraw the "customer choice" option from small retail customers in those jurisdictions which have already embraced it. Second, and more importantly, it could be argued that this policy presumes that we can predict with a reasonable degree of certainty where retail value added can be created and where it can't be created as a consequence of retail competition and the innovations brought to the world by ESPs.[29] While I think that my conclusions in this regard are likely to prove to be correct, I cannot be sure of them. One of the primary benefits of competition is that it unleashes competitors to try to develop and market innovate products and services. As long as the risks and rewards of pursuing such innovative ideas are not distorted by regulation, through rate structures that depart from cost causality principles, we should want to give ESPs a chance to show what they can do and give them an opportunity to compete, innovate and

[27] Oregon Senate Bill 1149, June 29, 1999.
[28] Nevertheless, I must commend policymakers in Oregon for having the intelligence to see through all of the rhetoric about retail competition and the courage to resist enormous political pressure to embrace it for all customers, to arrive at a retail competition policy that departs from what is trendy.
[29] Actually, this is a weak argument since as value added opportunities begin to emerge, Oregon's

provide the value-added services that don't appear to be particularly abundant for residential and small commercial customers. For both reasons, it seems to me that the adoption of a policy that allows ESPs to serve all retail customers, removes potential regulatory distortions to retail competition, and channels ESPs competitive energies toward increasing value added is the best way to proceed. We should not prejudge whether ESPs will be successful in marketing value-added services and we should not be surprised if the pace at which residential customers switch to ESPs is slow.

What would such a policy look like? UDCs would offer a variant of what I have called BES with unbundled tariffs, separating generation and other competitive services from distribution, transmission, stranded cost, unavoidable retail service costs and other mandated distribution company services. Retailing costs, both avoidable and unavoidable, would be properly allocated between customer-related and utilization-related charges. That is, all customers would have access to a variant of the second BES tariff discussed earlier. It would have the following basic structure:

BES with RCS Unbundling Based on Avoided Costs

Distribution Service Bill: $R_d = F_d + F_{rm} + (S_g + T\&D + DSM)*q$

Basic Electricity Service Bill: $R_{bgu} = F_{rc} + (G_w + r_c)*q$

Where:

F_d = non-usage sensitive customer distribution ("wires") service charge

F_{rm} = non-usage sensitive customer charge for unavoidable retailing costs

S_g = stranded generation cost charge (assumed to be utilization-related)

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restrictions on retail competition could be removed.

T&D = utilization related T&D price

DSM = energy efficiency and other "public benefits" charges

F_{rc} = Non-usage sensitive customer charge for *avoidable* retailing costs

G_w = wholesale generation services charge based on transparent wholesale market prices (including losses)

r_c = utilization-related charge for avoidable retailing costs

This Basic Electricity Service option reflects a dollar for dollar pass-through of the transparent spot market prices recorded in wholesale power markets plus a regulated price for "competitive" (i.e. avoidable) retailing costs. The latter reflects the UDC's retailing costs that are allocated based on cost causality principles between non-usage sensitive customer and utilization charges. Basically, the distribution utility offers consumers a simple straw to the wholesale market with no bells and whistles and consumers are assured of the opportunity to buy at wholesale. For example, in California the wholesale market price component would be the prices for energy in the PX and ISO; in New England, New York and the PJM region it would be prices for energy in the spot wholesale markets run by their respective ISOs. The avoidable retailing costs and their allocation between customer and kWh charges are determined by regulators. BES also serves as the default service for customers abandoned by their retailers or who can't find a retailer to take on the financial responsibilities associated with supplying them with generation service. The distribution utilities would not be allowed to offer any value added services (hedging, special metering, joint sales of multiple products, etc.) through the utility itself, though they could be offered through an unregulated affiliate.[30] Consumers who value those services would

[30] Obviously, accompanied by reasonable affiliate rules that guard against cross-subsidization of unregulated services from revenues earned from regulated services whose prices are based on accounting costs and abusive self-dealing. One affiliate rule that I object to is not allowing a retailer to use the utility's

have to turn to ESPs. When a customer chooses a competitive retailer that offers value added services, the basic generation service charge component disappear from the bill and the retailer takes over responsibility for paying for the electrons that pass through to the customer and for any customer services whose costs are included in F_{rc} and r_c which are no longer being obtained from the utility.

A critical component of this strategy must be a clear regulatory specification of those retail service functions that the UDC will be expected to continue to provide and those retail service functions that would be opened up to competition. The respective obligations of ESPs and the UDC must be defined. Similarly, the retail service costs that are properly associated with the competitive services must be carefully distinguished from retailing costs that reflect continuing obligations of the UDC. The competitive retail service costs, in turn, must be reflected on customer bills in a way that reflects the causal relationships between costs and customer services. This will almost certainly lead to the bulk of these costs being allocated through customer charges rather than through demand and kWh charges. The direct and indirect costs of residential and small commercial customers groups who may be expected to represent credit risks must be identified and handled in a way that does not invite ESPs to serve only the customers who do not represent credit risks and do not require a lot of customer service. This will require uniform connection and disconnection policies, uniform policies on billing for late payment, may require a special fund to provide money to compensate ESPs or the UDC for serving customer groups who are likely to be perceived as having poor payment records or requiring direct public assistance.

This approach has several attractive features. First, it creates an environment where there is a transparent wholesale market price against which consumers can compare offers from competing

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name when it markets. I think that such a rule gets it backwards. I want to know which company lies behind the ESP and I think that ESPs should be *required* to reveal who their parent is by reference to its commonly used name. Customers should be informed that they have no obligation to take services from

retailers. Second, it forces competitive retailers to focus on adding real value to what consumers can get by simply buying in the wholesale market. Third, it helps to protect consumers from being assigned to retailers who may ultimately exploit information and transactions costs to their disadvantage. Fourth, consumers get the benefits of competition by having the opportunity effectively to buy in organized competitive wholesale energy markets reflecting the "no frills" low cost "direct wholesale access" that a distribution company can so easily provide without incurring any significant incremental costs. Fifth, it will help to mitigate (but probably not fully mitigate) inefficient and inequitable adverse selection problems driven by differences between regulatory cost allocations and cost causality.

This basic approach to retail competition for residential and small commercial customers has some additional implications. First, one cannot judge the success of electricity restructuring and competition by looking at the share of retail customers who have switched to ESPs. I do not expect an enormous fraction of the residential and small commercial customers to switch under this policy until ESPs figure out how to provide real value added relative to buying electricity at wholesale through the UDC. The lack of switching does not mean that customers are not benefiting from competition. They get all of the benefits of wholesale competition. Second, one should evaluate the success of retail competition by examining the nature of the value added services that ESPs are providing to the customers that they do attract. It is surprising how little regulators and ESPs talk about the value added opportunities they are offering to residential and small commercial customers.

I do not anticipate that the availability of a BES of this form from the UDC for residential and small commercial consumers would be permanent. I see it as mechanism to assure a smooth transition to a retail competition environment that provides real value added to all customers. The availability of BES could be withdrawn gradually over a period of a few years to match the development of retail

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the affiliate.

competition and value added services. It would first be withdrawn from large industrial customers, then from medium-sized commercial customers, and finally from residential customers. As the availability of BES is withdrawn from a customer class, retail supply charges (obviously except T&D, stranded cost, DSM costs, residual customer service obligations, etc., that are the responsibility by the regulated T&D monopoly) would be deregulated for that class. They would effectively be forced to choose an ESP or remain with the utility (or an affiliate), but face prices regulated only by competition. In areas of the country with well developed wholesale markets, the transition could be accomplished over a three to five year period.

THE PENNSYLVANIA SHOPPING CREDIT APPROACH: A RIPOFF FOR RESIDENTIAL CUSTOMERS?

There has been great interest among ESPs, and among those regulators who (incorrectly) measure the success of their competition initiatives by how many retail customers have switched to ESPs, in the "shopping credit" approach adopted first by Pennsylvania and more recently by New Jersey. Basically, regulated UDC retail rates in Pennsylvania now include components reflecting T&D costs (including retailing costs), stranded costs and a “shopping credit.” When an ESP attracts a retail customer, the customer receives a “shopping credit” on her bill for each kWh that is now supplied by the ESP rather than the UDC. The shopping credits were consciously set at a level that exceeds, in some cases by a large amount, the wholesale market price of the electricity that the customer purchases. The difference between the shopping credit and the wholesale market price of electricity then becomes a “retail margin” that the ESP can use to offer customers a discount and to cover its retailing costs. The size of the credit was determined by the regulators in Pennsylvania and varies from utility to utility. For example, in 1999 a PECO residential customer would receive a credit covering both generation and

transmission costs equal to 5.65 cents/kWh while a PP&L customer would receive a credit only 4.26 cents/kWh.[31] Both credits exceed the wholesale price of generation and transmission service in the PJM area in which both companies buy and sell wholesale power. The difference in these credits reflect neither differences in retailing costs nor differences in wholesale power costs which are effectively the same since both companies are in PJM and can buy in PJM's wholesale markets. Indeed, the only rationale for the differences in shopping credits across companies can be that it reflects differences in stranded costs, not retailing costs, between them. Basically, customers that choose an ESP effectively get a discount on the stranded cost payments they make to their UDC, while customers who do not switch to an ESP effectively make a larger stranded cost payment.

To see this, we must look at the basic arithmetic of regulated electricity prices discussed earlier. The regulated bundled electricity price for a utility that has gone through restructuring has several components. Restating them:

$$P_T = G_w + S_g + T\&D + DSM + R_T = \text{average UDC bundled price/kWh}$$

Where the components of the charges are as before:

G_w : Generation services based on wholesale market prices

S_g: Stranded generation costs

T&D: Transmission and distribution costs, including ancillary services costs supplied by the network operator

DSM: Energy efficiency and other "public benefits" charges

R_T : Total retail service costs

[31] Includes both generation-related costs and transmission-related costs that ESPs are obligated to pay

R_m: Retail customer service costs the UDC is obligated to provide

R_c : Avoidable retail customer service costs for UDC services opened up to competition

$R_T = R_m + R_c$

At the present time,[32] under the shopping credit approach when a customer switches to an ESP, the net charges that it pays the UDC are given by:

$$P_{udc} = (G_w + S_g - SC) + T\&D + DSM + R_T = \text{UDC charges/kWh for ESP customer}$$

Where SC is the shopping credit which in turn is greater than G_w .

How can a shopping credit be set above the wholesale market price of electricity ($SC > G_w$) when, as in Pennsylvania, retailing costs have not yet been unbundled?[33] First, the stranded cost charge S_g could have been set at a level below the utility's actual stranded costs and the rest (or more than the rest) included in the shopping credit. Alternatively, the stranded cost charge might be an accurate measure of stranded costs, but the total regulated rate P_T has not been reduced sufficiently to reflect both the proper valuation of stranded costs and the value of electricity in the wholesale market. That is, the total bundled regulated rate that has been made available to all customers is greater than the regulated rate that *could* have been made available to all customers, while allowing the utility to fully recover its costs, including its stranded generation costs. This difference is reflected in the "above market" portion of the shopping credit. In the first case, the utility makes up for some, all, or more than all of its actual stranded costs from customers who do not switch. The more customers who switch the

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under the PJM rules for load serving entities.

[32] As I understand it, the UDC's retailing costs will be unbundled as well in the future.

[33] As I have already indicated, UDC retailing costs are not high enough to justify a credit of this magnitude

less the utility effectively collects in stranded cost charges and vice versa. In the second case, the utility recovers more than its actual stranded costs from those customers who do not switch since the bundled price (including charge for full recovery of stranded costs) has been artificially inflated and does not fully reflected the wholesale market value of electricity.[34] In both cases, customers who do not switch pay more of the utility's stranded costs than do customers who switch. In the second case, all customers may end up paying more than they would have if my proposed Basic Electricity Service, which gives direct access to the wholesale market to all customers and allows them to buy at the wholesale market price, had been adopted.

Whatever the source of the shopping credit, the effect is the same. If an ESP can buy wholesale power and transmission service in PJM for 4.0 cents/kWh and can sell against a credit of 5.6 cents/kWh when it snares a PECO customer, the ESP gets 1.6 cent/kWh of margin to play with. For example, the ESP could offer the customer an 0.8 cents/kWh discount and keep 0.8 cents/kWh to cover its retailing costs. This is a no brainer for a customer who understands what's going on. To get the credit, all a customer effectively has to agree to do is to change the name of the energy supply company on her bill. No real value added services need to be provided by the ESP to the customer. Not surprisingly, the areas of Pennsylvania with high shopping credits, like Philadelphia, have attracted a lot of ESP activity and a *relatively* large fraction of the residential customers have switched to ESPs. The opportunities for retailers in PP&L's area are much less attractive because the shopping credit is smaller. (more on this below)

Obviously, the shopping credit approach is a good deal for retailers and a good deal for customers who switch compared to those who don't switch since they presumably can share in the

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even if they were unbundled.

[34] If there is an ongoing true-up of stranded cost recovery, there would not be excessive compensation to the UDC. The customers who do not switch would still pay a larger share of the stranded costs than

margin the Pennsylvania PUC has left on the table.[35] But the credit is an arbitrary number that is based neither on market values nor on retailing costs. It effectively simply gives customers who switch a discount on their stranded cost obligations. If Pennsylvania had adopted the BES approach that I outlined earlier, they would have first arrived at a stranded cost charge which all customers would pay, whether or not they switched, and then given *all* customers the benefit of the competitive wholesale market prices available in PJM. Retail customers who don't have the wit to switch, or for one reason or other are not attractive targets for marketers, would not end up de facto paying a larger fraction of the host utility's stranded costs as they do under the "shopping credit" approach.

RETAIL CUSTOMER SWITCHING BEHAVIOR

It should come as no surprise that in states where regulators have used creamy shopping credits to induce customers to switch to ESPs, more customers have in fact switched to take advantage of the stranded cost discount opportunity that regulators have built into the UDC's regulated rates. Tables 3, 4, and 5 compare the penetration of ESPs for three states: Pennsylvania, which pioneered the lavish shopping credit approach, California which effectively gives UDC customers direct access to the wholesale market price (adjusted for distribution losses) and provides retailers with a modest RCS credit based on avoided costs, and Massachusetts which, until very recently, provided UDC customers with unbundled "standard offer" generation service at a level at or slightly below the wholesale market price (adjusted for distribution losses).[36]

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comparable customers who do switch, however.

[35] How good a deal it is for any customer in Pennsylvania depends on the magnitude of the separate stranded cost charge that all customers pay and whether it took into account the above-market generation service revenues that the Pennsylvania utilities continue to receive from those customers who don't switch. Since in many cases generating plants were evaluated administratively rather than through a market process it is hard to know how fair the deal is overall.

[36] Responding to pressure from ESPs, Massachusetts recently raised the standard offer for Boston Edison

to 4.5 cents/kWh, which is above the prevailing wholesale market price in New England. However, at the same time it reduced Boston Edison's stranded cost charge to keep the overall UDC price at the same level. To the extent that this leads to more customers switching to ESPs, this will extend the number of years into the future during which Boston Edison will continue to recover its stranded costs. "Power Cost May Spark Competition," *Boston Globe*, January 7, 2000, page D1.

TABLE 3

CUSTOMERS SWITCHING TO ESPs IN PENNSYLVANIA

PERCENTAGE OF LOAD SERVED BY ESPs

As Of 1/7/2000

(Choice started 1/1/99)

UDC	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	1999 RESIDENTIAL SHOPPING CREDIT
PECO	17.5%	39.15%	58.7%	5.65 ¢/kWh
PP&L	2.8	33.3	42.1	4.26 ¢/kWh
GPU ENERGY	6.7	58.2	67.3	4.53 ¢/kWh
DUQUESNE	13.6	41.3	13.4	4.75 ¢/kWh
ALLEGHENY	1.5	20.1	21.1	N/A

N/A: Comparable numbers are not available since transmission charges are treated differently for Allegheny. However, the comparable shopping credit for Allegheny is likely to be lower than those reported for the other utilities.

Source: Pennsylvania Office of Consumer Advocate

TABLE 4

RETAIL CUSTOMER SWITCHING TO ESPs IN CALIFORNIA
As of December 15, 1999
(Retail choice started 4/1/98)

	% of Demand	% of Customers
RESIDENTIAL	2.0%	1.7%
COMMERCIAL		
< 20kW	4.2%	3.4%
20 < kW < 500	14.6%	6.5%
INDUSTRIAL		
> 500kW	32.0%	20.1%

Source**:** California Public Utilities Commission, Direct Access Reports, December 1999.

TABLE 5

RETAIL CUSTOMER SWITCHING TO ESPs IN MASSACHUSETTS

As of November 1999
(Retail choice started 4/1/98)

	% of Retail Sales
Residential:	0.17%
Small Commercial:	1.69%
Medium Commercial:	5.0%
Large Commercial:	20.7%

Source: Division of Energy Resources, Commonwealth of Massachusetts, November, 1999.

It is evident from the data in these tables that customers in Pennsylvania have generally taken much greater advantage of the opportunity to reduce their rates by giving their business to ESPs than have customers in California and Massachusetts.[37] And there is some evidence that more residential customers have switched in UDC areas in Pennsylvania with the larger shopping credits. However, this does not imply that residential customers are better off than they would be if the Pennsylvania regulators had required UDCs to offer *all* residential customers direct access to the wholesale market with a BES option of the type I described above. Clearly the residential customers who have not switched, the vast majority of residential customers, are not better off with shopping credits than they would have been with BES. They are paying both stranded cost charges and a generation service price that is in excess of its wholesale market value. Nor are the customers who have switched likely to be better off than they would have been with BES. In Philadelphia, for example, the discount of the total UDC default rate offered by the most successful ESP is only about 0.5 cents/kWh, while BES would offer an discount of roughly 1.2 cents/kWh. The only real value added services that appear to be offered to residential customers are "green power" products. The kind of real time metering and control service that would help to improve wholesale market performance is not a major sales theme for ESP sales to residential and small commercial customers.

It is also worth noting that in Pennsylvania, larger customers have been able to take much greater advantage of retail competition than have smaller customers, despite the large residential shopping credits in some areas. Moreover, in California and Massachusetts, where the default and standard offer service has provide little if any margin over the wholesale price, ESPs have still been able to attract a large fraction of the largest customers. This suggests that ESPs can and do offer large

[37] It has been suggested to me that another reason why there has been so much switching in Pennsylvania is that utility retailing affiliates face fewer restrictions than in California and Massachusetts and are attracting a large share of the switching customers.

customers value-added services in addition to providing them with commodity electricity they acquire in the wholesale market.

SHOULD SUBSIDIES BE OFFERED TO HELP ESPs TO ATTRACT RETAIL CUSTOMERS?

Some regulators have recognized the creamy shopping credits for what they really are, but justify them as necessary to stimulate the development of a vibrant retailing sector. One argument is that this is an infant industry that needs to be encouraged now with the expectation that it will yield significant benefits in the long run when it matures. At least one regulator has even pointed to the PURPA experience as demonstrating how supra-competitive payments for electricity produced by QFs has helped to stimulate the development of an independent power sector. One must be suspicious of infant industry arguments. Industries that have grown and (sometimes) prospered based on subsidies rationalized as necessary to promote a new industry often remain "infants" for decades. Temporary subsidies become difficult to withdraw. Many of those who have entered the ESP business are not "infants" starved for capital, but are affiliates of large corporations with enormous financial resources. PURPA has cost the U.S. tens of billions of dollars in excessive costs. This is not an experience that we should be proud to repeat.

As I have discussed, however, there may be significant social value associated with the potential for a successful retail market to improve the performance of wholesale markets. This social value may be difficult to capture by market participants in standard market transactions. Accordingly, there may be a justification for public subsidies to stimulate the development of retail sales arrangements that contribute to the mitigation of wholesale market performance problems. However, if this is the rationale for subsidizing ESPs then it is important for policymakers to clearly articulate this rationale. More importantly, any subsidies should be targeted to stimulate ESPs to do the kinds of things that will help to

improve wholesale market performance. For example, subsidies might be limited to support for real time metering and communications equipment to create more demand elasticity in wholesale markets. General subsidies are likely only to stimulate a lot of customer churn, wasteful advertising and promotional expenditures, and inequitable distributions of stranded cost responsibility, without mitigating wholesale market performance problems.

CONCLUSION

The rhetoric about "customer choice" and "retail competition" as it applies to residential and small commercial customers has borne little relationship to the observable value added that ESPs are bringing to these customers. The physical attributes of electricity production, distribution and metering provide a simple and inexpensive method to bring a significant fraction of the benefits of electricity competition to all customers by giving them direct access to the wholesale market. The maxim "I can get it cheaper for you at wholesale" can be applied directly to electricity. At the same time, these same physical attributes make it very challenging for retailers to provide significant value added to residential and small commercial customers compared to the value they receive by getting simple cheap direct access to the wholesale market. ESPs should be given a fair opportunity to compete to attract retail electricity customers by offering to provide them with real value added services. However, they should be competing against a benchmark defined by the costs of providing customers with direct access to the wholesale market. Any retailing costs that are unbundled must reflect a careful specification of the respective service obligations of UDCs and ESPs, cost-causality relationships, and distinguish between avoidable and unavoidable costs required to meet UDC service obligations. Regulators must be on guard against cream skimming and redlining as it relates, in particular, to smaller customers with below average credit records who ESPs may seek to avoid, especially if regulated rates do not fully reflect

retail service cost causality. The success of any retail competition program should be judged by the value added it provides to consumers over and above the basic wholesale electricity service that I have described, not by the fraction of retail customers who have switched to ESPs.

Over time, I expect those ESPs who have been successful in developing and selling value-added services to larger customers will succeed in applying their skills to smaller and smaller customers. Future developments in communications, computation, control and metering technology will someday bring these value added services within reach of many more customers. In the mean time, BES provided by UDCs will make it possible to take advantage of the opportunity to provide all customers with low-cost direct access to the wholesale market to convey to them the benefits of generation service price competition and to channel the competitive energies of ESPs toward developing and marketing value added services, not just bringing new advertising, marketing, and promotion expenses into the system.