Retail Electric Competition:

A Blueprint For Consumer Protection

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Retail Electric Competition: A Blueprint for Consumer Protection

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Consumer Protection Issues

Almost every state has a proceeding underway to study or implement the move to retail electric competition. While 12 states (California, New Hampshire, Rhode Island, Maine, Massachusetts, Pennsylvania, Nevada, Oklahoma, Montana, Illinois, Connecticut, and Virginia) have adopted legislation to mandate retail electric competition by a date certain, many other states have initiated regulatory proceedings to explore, and, in some cases, implement, retail competition. In every state that is exploring retail electric competition, legislators, state energy regulators and other state policymakers, business groups, environmental and consumer advocates, and customer groups are trying to determine how this new industry structure will work, what it should look like, and how consumers will be affected.

The adoption of retail electric competition will require states to rethink a broad range of issues concerning the provision of basic electric utility services to all customers. This *Blueprint for Consumer Protection* is intended to help state decision makers respond to one significant part of the overall agenda, referred to as "consumer protection" issues and concerns. Basically, this set of issues will redefine the consumer's relationship with his/her energy supplier and redefine his/her rights and remedies to obtain and maintain electric service. This document does not address market structure, stranded cost recovery, divestiture, the approval of mergers and acquisitions, the relationship between retail competition and the environment, or the terms and conditions governing the relationship between distribution companies and new competitive suppliers. While these issues are crucial to the ultimate outcome of any retail electric competition effort, they are beyond the scope of this *Blueprint*.

In general, "consumers" refer to residential and small commercial customers. These customer groups are typically not offered the opportunity to negotiate a customer-specific contract. Rather, they are typically low-usage customers who use less energy or electricity than larger customers. In addition, they typically are offered pre-printed "take it or leave" contracts by suppliers of mass-marketed products; it is likely that electricity will be no exception to this general practice. Finally, these customers typically shop for mass-marketed products without expert assistance and usually do not have legal or financial assistance or the necessary background to negotiate specific deals in the marketplace for such items in their budget.

While most observers would certainly acknowledge that residential customers should be provided some standardized consumer protections, others may question the inclusion of small commercial customers in this group. However, most states that have adopted retail electric competition have included small commercial customers, defined with

respect to their electricity usage or demand criteria, within the consumer protections discussed in this *Blueprint*. Similar to residential customers, small commercial customers use less electricity than larger commercial or industrial customers and usually do not have the time or special skills required to obtain electricity on the basis of individually negotiated contracts. In many states, as well, policymakers have responded to the high incidence of telephone fraud and the unauthorized change of telephone supplier (referred to as "slamming") that has victimized small commercial, as well as residential, customers.

Consumer protection issues are crucial to the move from monopoly regulation of electricity and gas to a competitive market for generation services. Most participants in the restructuring debate agree that the general public will not consider the prospect of theoretically lower prices in the future as a sufficient tradeoff if the new market also means an increase in fraud, customer confusion, complaints, and inability to understand and participate in a new market structure. In short, consumer protection issues are crucial to the public's acceptance of competition.

This *Blueprint* is primarily aimed at state-level decision makers in states that have not yet adopted electric restructuring legislation, presenting examples from those states that have progressed to the implementation stage. For readers who may need a primer on the "whys and wherefores" of electric restructuring, Appendix A contains a short introduction to the forces that have stimulated the move to retail competition in the electric industry.

How The Blueprint Is Organized

The *Blueprint* is organized so that readers can quickly find specific issues and policy discussions. Each issue is presented with background information and a summary of recent state electric competition legislation or regulations on that topic. Key decisions and options are highlighted in text boxes that present examples from states that have already adopted legislation and regulations on these topics.

Chapter I presents an overview of consumer education and disclosure policies and programs. The purpose of these programs is to enable consumers to easily compare offers and to get them interested in shopping for electricity and electricity products. Because electric competition is not being undertaken in response to a grassroots effort (as explained more fully in Appendix A), it is important that residential and small commercial customers not be caught by surprise when these changes are implemented. In addition, a competitive market operates to keep prices as low as possible only when customers are knowledgeable about their options and can compare prices and select the product and price most beneficial to them.

Chapter II addresses the redefined role of the remaining monopoly, the electric distribution company. Every state that is moving to retail electric competition is adopting separate regulatory approaches for distribution and transmission and the generation or sale of electricity. This separation or "unbundling" of the current integrated utility, as well as the manner in which charges are presented on the customer's monthly utility bill, requires legislators to identify the public policy benefits that are built into the current regulatory structure and the regulated rates. Legislators must also determine whether existing or additional public policy benefits should be added to the new "unbundled" system. The distribution function will typically operate as a monopoly and the state utility commission will continue to regulate it as such. That means that the prices, services and consumer protections associated with the delivery of distribution services will continue to be regulated. However, the distribution company will have a different role from its current one. Its main obligation in the future will be to assure that customers are connected to the distribution system. This differs from the prior obligation of the electric monopoly supplier, which was to assure not only connection and delivery, but electricity services as well. The change in obligation has important implications for the historical state interest in assuring universal availability and affordability of electricity.

Chapter III focuses on regulation of the new actors in the competitive market: suppliers of electricity and electricity services. Suppliers will include new entities and new incarnations of current utilities. Their services and products will be competitive; that is, their prices will not be regulated. However, this does not mean that the competitive suppliers will be entirely free of regulation. Most states are creating licensing criteria and establishing minimum consumer protections, as well as prohibiting unfair trade practices. Such a regulatory approach is similar to other state-regulated businesses, such as consumer credit, banking, insurance and health care. Key issues with respect to the regulation of competitive suppliers include:

- how to prevent "slamming" (a change in the customer's supplier without permission);
- whether and how suppliers should be licensed;
- how to integrate the regulation of suppliers with existing state and federal consumer protection laws;
- what role suppliers will play in assuring that electricity is availability and affordable to all customers;
- how to prevent redlining; and
- how the supplier's contract terms and collection remedies should be regulated, if at all.

Chapter IV looks at a new opportunity that will arise with the onset of the electricity competition: the ability to aggregate or create customer pools based on political boundaries (municipal or county) or customer organizations or affinity groups. For example, some advocates for low-income customers point to the possibility of significant benefits for traditionally hard-to-serve customers by grouping them together into a single purchasing entity.

Chapter V explores the implications of the new industry structure on state approaches to regulation and on differences between utility regulation and the regulation of competitive business in general. In effect, the state regulatory approach will move from regulating prices to one that emphasizes consumer protection and fair trade practices. This fundamental change will require states to rethink the location of new regulatory duties, as well as the enforcement skills and resources that will be needed to accomplish new tasks.

Appendix A contains background information on the economic, technological and political forces that are driving the changes in the electric industry.

Appendix B contains examples of recently-enacted state legislation that addresses consumer protection issues associated with electric competition.

Appendix C contains a bibliography of useful reading materials on restructuring published by the National Council on Competition in the Electric Industry.

CHAPTER I

CONSUMER EDUCATION AND DISCLOSURE POLICIES

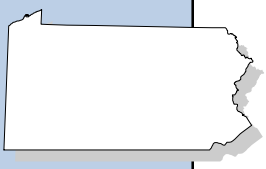
What if state and federal policymakers restructure the electric industry to create a competitive market, but participation by residential and small commercial customers is much lower than expected? A competitive market needs both willing buyers and sellers. If buyers don't participate in the competitive market, the ability of the competitive market to exert a better discipline on prices than traditional utility price regulation will be impaired. Indeed, if customers do not shop for electricity or suppliers do not market to residential customers, there is a real risk that the promise of competitive markets for electricity will not be realized. In a worst case scenario, the result may be the unintended creation of an unregulated monopoly or oligopoly.

While many key decisions that will impact the creation of a competitive market are not the subject of this *Blueprint*, two initiatives may go far to help stimulate customer interest in competition and help consumers develop the skills to shop for electricity. The first initiative focuses on how consumers learn about the move to electric competition. The second initiative focuses on giving consumers the tools to enter the competitive market and make an informed choice. The judicious use of disclosure requirements that enable customers to shop and compare offers, can help prevent fraud and abuse, and provide a form of regulatory investment that may prove cheaper than enforcement proceedings in a hearing or court room.

Consumer Education

Most residential and small business consumers routinely pay their monthly electric bill without much attention to regulated rates or usage patterns. Indeed, recent research reveals that most consumers do not know their annual energy usage or the price paid per kWh on their utility bill.[1] Residential households use far less energy than commercial or industrial customers and the annual residential energy bill (65% of which is electricity for households) typically

A customer who asked to be part of the **Pennsylvania** electric pilot programs in November, 1997, had this reaction to the offers that appeared in his mailbox from electricity suppliers, "Each had different information, a different pitch--you couldn't compare apples to apples." The customer felt that participating in the pilot program took more time than it was worth in potential savings.



"The Outlook," Timothy Appell, *Wall Street Journal*, December 15, 1997.

consumes 5% or less of household income.[2] Even in states with higher than average electricity rates, such as the New England states where residential rates average 11-13 cents per kWh, the monthly electric bill is still a relatively small portion of a typical residential customer's monthly budget. While residential customers often are concerned about electricity prices, the move to retail electric competition is not being driven by their concerns. Because of this, some observers believe that residential customers will not participate extensively in the new competitive market, especially when their initial savings may be 10% or less compared to current annual costs. Will customers be naturally inclined to shop and compare prices when savings on their bills during the early years may not exceed $5 to $10 per month? Will low-income, elderly and non-English speaking customers obtain the information necessary to understand an issue that appears complex, with a daunting new vocabulary, and that at first glance appears to threaten the reliability of their electric service?

Even though the long distance telephone market was first opened to competition in 1984, AT&T still had over a 50% market share in 1996.

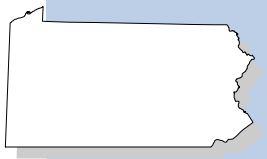
Telephone Restructuring: A Case Study

Policymakers are looking to lessons learned from restructuring of the telephone industry, which began with the break-up of AT&T and the onset of long distance telephone competition in 1984. In telephone industry restructuring, neither federal or state regulators undertook any significant public education campaign to prepare customers for changes. Once long distance telephone competition began, it produced a litany of complaints by residential and small business customers, alleging that their long distance service providers had been changed without their permission, a practice known as "slamming." Telephone customers also complained about aggressive marketing tactics, such as telemarketing calls during the dinner hour, or the high prices of some credit card and operator-assisted calls at pay phones. Many telephone customers also questioned the prices charged by some companies for pay-per-call services (1-900 calls) that appeared on their local phone bills and threatened the continuation of local phone service if the unregulated charges were not paid.

These developments have, in turn, resulted in legislative and regulatory efforts to belatedly address consumer protection and education issues associated with telephone restructuring. Customers have reacted to questions about electric restructuring by raising these same concerns and asking for protections to prevent their reoccurrence.

California's PUC has initiated a $90 million state-wide education program called "Plug In, California!" to stimulate customer awareness of competition. This program, funded by distribution utilities through rates charged to all customers, is designed to inform customers with TV and radio advertisements, followed by a direct mail campaign targeted to every household. In addition, more than $13 million is available to community-based organizations to focus on local education activities, especially for low-income, rural, and elderly customers.

The **Pennsylvania** PUC has ordered all distribution utilities to fund comprehensive consumer education programs with a statewide multi-media campaign and a local education effort that involves community organizations. The PUC has set program funding levels for each utility at $5 per customer over a 4-year period.



Careful attention to timing, educational messages, information disclosure, and assurance of consumer protections will accelerate the development of competitive retail markets for electricity and help ensure that the benefits of lower prices, more choices, and better service are available to all consumers.

The Implications for Electric Restructuring

Many states have concluded that the move to electric competition will require a larger educational effort than the traditional utility bill inserts or public hearings and workshops. Preparing customers to shop for electricity and then respond to marketing messages they receive will require a comprehensive and professional outreach and educational effort. Customers will need frequent messages from a variety of sources to understand their new rights, responsibilities, and opportunities. Outreach and education will probably require additional resources, since most state regulatory commissions have not had to conduct such efforts in the past. The dramatic change in relationship between customers and their electric utility cannot be accomplished by relying solely on the tools that have prevailed in a monopoly utility structure.

The purpose of a comprehensive public education program should be to maximize public participation in the implementation of retail competition, minimize customer confusion about the changes being undertaken, and equip *all* customers with the means to participate effectively in the competitive electric market. While any state-funded educational effort must be neutral and objective, it should not be confused with the promotional and brand name marketing efforts of competitive suppliers. Customer education and outreach programs in several states have been designed to motivate customers to learn about electric com-

The **Maine** Customer Education Advisory Board on Electricity Retail Access has recommended a $1.6 million education plan in four phases:

- Awareness
- Understanding
- Assurance
- Acceptance

petition with modern marketing techniques. Key components of a well designed electric competition education program have included:

- information dissemination by means of interactive activities, as well as brochures or other written materials, and use of a variety of mass media outlets, with the intent to motivate the public to become interested in, and learn more about, electric competition;
- explanations in clear language (and multiple languages in some states) of the basic concepts of electric restructuring, which include (1) information on how prices, consumer protections and low-income programs may be affected; (2) explanations of customer risks and responsibilities; (3) information about how to assess and make use of a household energy profile to shop for electricity; (4) how to compare offers from electric suppliers; (5) information about aggregation; and (6) information about dispute resolution mechanisms, including the role of state agencies in resolving disputes with retail electric suppliers;
- well-publicized public forums conducted in several geographical areas to obtain public input and provide opportunities for information exchange;
- active involvement of community organizations in developing messages and devising and implementing education strategies, particularly for low-income, elderly, foreign speaking, rural and other customers who may miss more traditional media-based efforts;
- use of focus groups and surveys to gather public input on both broad restructuring issues and concerns, as well as on public education needs and reaction to initial outreach initiatives;
- a toll-free hotline to provide guidance to consumers seeking advice about personal energy needs, the selection of a retail supplier, aggregation, or dispute resolution; and
- use of pre-established outcome measures of customer awareness, understanding and ability to act, which periodically evaluate education and outreach efforts.[3]

In states that have designed comprehensive electric restructuring education programs, the state public utility commission has taken a leadership role in coordinating, funding,

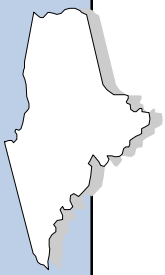
and implementing the program, although usually with a broad-based advisory committee or other public involvement process. While there are several funding options, such as state tax appropriation, increased commission budget, or funding via the distribution utility's rates, most states have opted to fund their education program through imposition of transition costs on distribution utilities.

Shopping for Electricity

The arrival of customer choice carries with it the potential for customer confusion. If the experience in other industries is any guide, comparing electricity pricing offers will be especially confusing and difficult. Is $5 a month and 10¢ per kWh better than $10 a month and 8¢ per kWh? Or $6 and 12¢ per kWh with a 40% off-peak discount? Furthermore, the sale of electricity itself may be bundled with other products, such as alternative meters (which will offer additional energy management services or pricing options), or even other products, such as Internet access or telephone services. Product linkages may make comparisons among offers by multiple suppliers even more difficult.

In some industries, such as consumer credit, appliances, cars, and food,[4] uniform consumer disclosures have been developing for decades.[5] This author has suggested that the lack of uniform price disclosure on bills and other marketing materials in the long distance telephone industry may have contributed in part to the lack of significant gain in market share for AT&T competitors for over a decade.[6] This same development may occur with the move to electric competition unless there is a concerted effort to adopt a different approach. The primary problem is that consumers lack both critical information and skills to easily evaluate different price offers. Furthermore, consumers have a long-standing habit of receiving their electric bills and paying them automatically. Nothing more has been expected of customers in a regulated market. If consumers do not take the time to shop in a competitive market, they cannot fulfill their essential role in making competition work in favor of the most efficient suppliers (or those suppliers promoting attributes other than price which may be valued by some consumers, such as environmentally friendly products or energy sources located in the consumer's state). In the absence of key consumer information, the marketplace works on the basis of information manipulation rather than

Maine's Consumer Education Program Rule requires distribution utilities to fund a Commission-approved $1.6 million consumer education program for electric restructuring over a four-year period. The assessment will be recovered from ratepayers. "This funding determination is based on the principle that those consumers who benefit from a program should pay to support it." *Order Adopting Rule*, Docket No. 97-



efficiency. This is particularly true for consumers whose monthly bill for electricity or telephone is a modest part of the household budget.

Recognizing this, the National Association of Regulatory Utility Commissioners (NARUC) in July 1996 urged states adopting retail direct access programs to include enforceable standards of disclosure and labeling that would allow retail consumers to easily compare the price, price variability, resource mix, and environmental characteristics of their electricity purchases.

Among other purposes, NARUC announced its belief that **"the electric industry should facilitate informed customer choice that will promote efficient markets."**

What Should Be Disclosed

Consumer research has confirmed that the public wants comparative price information. Focus groups and surveys in New Hampshire and Massachusetts of customers who had participated in pilot electric competition programs, documented confusion with the lack of standardized pricing statements and called for state regulation to provide standard price disclosures.[7] As a result of this experience, utility commissions in New England have worked together to develop a model, uniform Electricity Disclosure Label and a more detailed *Terms of Service* document for the sale of electricity to residential and small commercial customers to be used by suppliers marketing in the New England region. The following discussion summarizes key recommendations of this collaborative effort:[8]

Price

Customers should be able to compare prices on an "apples-to-apples" basis. The most commonly recommended approach is to disclose the supplier's price structure in a cents per kWh for 3-4 common usage levels (i.e., 500, 1000 and 2000 kWh levels for residential customers). One key policy issue is whether a uniform price disclosure method should reflect only the competitive generation service offered by the supplier or include all other pieces of the customer's monthly electric bill, i.e., distribution charges and possibly other unregulated services. Limiting price disclosure to generation services allows suppliers selling across a wide geographical area to use a single label without regard to differences in distribution charges. If distribution costs are included, it is impossible to include a label, for example, in a *Boston Globe* ad that reaches consumers in other utility service areas.

If suppliers are required to provide average price information at several typical usage levels, most customers can identify a level most closely matching their own. One-time cash rebates or other price inducements should probably not be reflected in the disclosure of average electricity price. Prices for time-of-use (TOU) rates should be based on consistent load profiles for customers, with usage levels shown. If a supplier uses variable prices in which prices

change according to an index, the disclosure could show prices reflecting a recent period or project under a uniform set of assumptions, much like variable rate consumer credit contracts (including mortgages) under the Truth in Lending Act rules.[9]

Contract Terms

In addition to price, consumers will need to know the contract duration and whether the price is fixed or variable over the term of the contract. Other important terms include penalties for early termination, late fees, or other extra charges. Because consumers are unlikely to actually sign a contract document to buy electricity, it will be important for consumers to know and understand the *material* terms of their agreement. After all, consumers will no longer be able to rely on the tariffs filed by their current utility with the public utility commission (a form of "master contract") for their purchase of electricity in a competitive market.

Supply Mix

Consumers are concerned about the environment, and want information about fuels used to generate electricity.[10] One supplier's electrons will not automatically flow only to the homes of its own customers. Rather, the local power pool will probably dispatch sufficient electricity to meet local demand based on cost and reliability factors of the total generation mix. Nonetheless, if more customers buy from "green" suppliers, renewable power will be an increasing part of the local power mix. Therefore, several states are working to develop a method of disclosing fuel mix on electricity product labels, showing major fuel types (coal, oil, nuclear, renewable energy) as a percent of the supplier's total generation mix. For example, California requires all suppliers to disclose their fuel mix based on an historical record.[11] If a supplier obtains "generic" power from the regional power pool, the fuel mix disclosure should reflect that power mix or a comparable substitute. If the supplier proposes to market power from a particular facility, the fuel source for that facility could be presented.

Emissions

Massachusetts has recently adopted regulations that require suppliers who market in that state to disclose price, fuel mix, and air emissions (sulfur dioxide, nitrogen oxides and carbon dioxide).[12] A supplier's generation source emissions must be expressed in a form which compares them to average regional emissions of all generating sources. This approach allows customers to compare a supplier's emissions profile with other power generators.

Labor

Massachusetts' electric restructuring law also requires suppliers to disclose the percentage of their generation mix that comes from power sources with employee union contracts and the percentage that comes from power sources that use replacement labor during labor disputes.

Terms of Service Document.
In addition to price, contract length, supply mix, and emissions data, other key disclosures that states should consider requiring suppliers to highlight in a *Terms of Service* document include:

- All additional fees, including early termination penalties or late fees
- Deposit policy
- Collection procedures, including right to payment arrangements, and special programs available for low-income customers, if any
- Supplier's dispute or complaint handling policy, including the state commission's toll free complaint number
- Limitations and disclaimers of warranties
- If applicable, the customer's right of rescission and how to exercise this right

When Disclosures Should Be Provided

There are at least three distinct events or points of contact in a customer's relationship with an electricity supplier that suggests a need for different disclosures. Suppliers should disclose information to their customers (or potential customers) in (1) promotional materials; (2) *Terms of Service* documents or contract summaries; and (3) monthly bills.

The first point of contact is at the time a supplier advertises its electricity products. Drawing comparisons to a requirement of the Truth in Lending Act, some experts recommend development of an Electricity Facts Label with disclosures concerning price, fuel mix and emissions (or other required items), which should appear in a supplier's printed advertisements and written promotional materials.[13]

A second point of contact is at the point when a customer enters into a contractual relationship with the supplier. In contractual terms, the supplier has made an offer which the customer has accepted. After the agreement is made, the supplier must inform the customer about the material terms of the agreement in order to have a legally enforceable contract. This can be done in a *Terms of Service* document, which should contain all the material terms of the contract, including the supplier's pricing method, fees, and complaint procedure. In California, Pennsylvania and Maine, the *Terms of Service* disclosure must also offer customers a "right of rescission" to cancel the contract without penalty within 3-5 days. If this right is prominently disclosed in the *Terms of Service* document, customers may examine the price and other contract terms in detail before deciding to continue the contractual relationship.

The third point of contact during which information should be disclosed is in the supplier's bills. Customers will receive a bill either directly from the supplier (which may or may not include the distribution/transmission portion of the bill) or as part of the customers' distribution company bill. At this point, customers would want to know the actual cost per kWh for electricity used during that billing period. Doing so would require suppliers to divide their customers' charges for electricity by total kWh usage. Note that such a disclosure requirement is not a substantive regulation of a supplier's rate design or pricing method. This proposal would allow customers to see the effect of their suppliers' price design on their own usage patterns.

CHAPTER II

CONSUMER PROTECTION AND PUBLIC PURPOSE PROGRAMS:

The Role of The Local Distribution Utility

The move to retail electric competition will require each state to redefine the role of its local utilities. For over 100 years local electric utilities have had a monopoly on the generation, distribution, and transmission of electricity. Now policymakers must decide what portion of this vertically-integrated industry will remain subject to monopoly regulation and what portion should be open to competition. The distribution function will remain a monopoly in all states which have adopted electric restructuring legislation to date. This will mean that the local poles and wires used to deliver electricity will not be duplicated. In some states, the distribution function will continue to include billing, metering and customer service functions, but in other states these services will also be opened to competition. The consumer protection implications of billing and metering competition will be explored further in Chapter III.

Long distance transportation—or transmission--of electricity through high voltage transmission wires will continue to be regulated under the federal jurisdiction of the Federal Energy Regulatory Commission (FERC). This transmission system is used primarily for wholesale transactions between today's utilities but is now being opened to private transactions by generation plant owners to assure nondiscriminatory access under FERC-controlled policies and prices. This division between the state-controlled distribution system and the federally-controlled transmission system generally conforms with the historical jurisdiction of states over the retail sale of electricity and the authority of the federal government (FERC) over wholesale transactions.[14] Although not required to do so, some regions are forming an Independent System Operator (ISO) to govern access to the transmission system and to establish price and access rules which accommodate competitive generation suppliers. This is still an evolving issue in many states.

In general, states are deciding how to regulate the three major functions of the electric industry:

Generation: The generation and sale of electricity

Transmission: The long distance transportation of electricity between distribution utilities and generating sources

Distribution: The local delivery system, including poles and wires

The changing role for utility companies to a more limited distribution function has important implications for consumer protection and public purpose programs. States will need to analyze the comprehensive regulatory scheme that is applicable to today's public utilities and decide which policies and regulations should continue to apply to the distribution portion of the business; which should be changed or added to respond to the new industry structure; and which should be created to apply to the competitive generation portion of the business. With respect to distribution companies, the most important policies and issues that should be addressed include

- obligation to serve;
- default service;
- reliability of service and service quality;
- Universal Service programs;
- credit and collection policies; and
- privacy of customer information.

The remainder of this Chapter will address these issues.

Obligation to Serve

The duty of the distribution utility will change from an *obligation to serve* to *access* to the electric grid on a nondiscriminatory basis. Under this approach, the distribution utility will continue to provide line extensions and assure connection to the local distribution system. Indeed, the distribution utility will probably retain its right to use eminent domain power to assure the proper design and operation of the delivery system. This continued delegation of state authority is often viewed as justification for continued utility participation in the implementation of state policies, such as encouraging energy efficiency, and supporting renewable resources and universal service programs. What is clear from this altered mission is that state regulators may no longer count on the local utility alone to assure that all households have access to reasonably priced electricity service.

Default Service

Every state that has considered the implications of a move to retail competition has determined that a Default Service option (also referred to as a "Standard Offer" or "Basic Service") must be provided to customers who do not choose a competitive supplier for generation services. In other words, customers will be assured a continuous source of electricity even if they do not choose a new supplier. In addition to those customers who "choose not to choose," there are other customers who must be assured access to electricity, such as

- those refused service by a retail supplier;
- customers whose supplier's electric service contract is canceled for any reason;

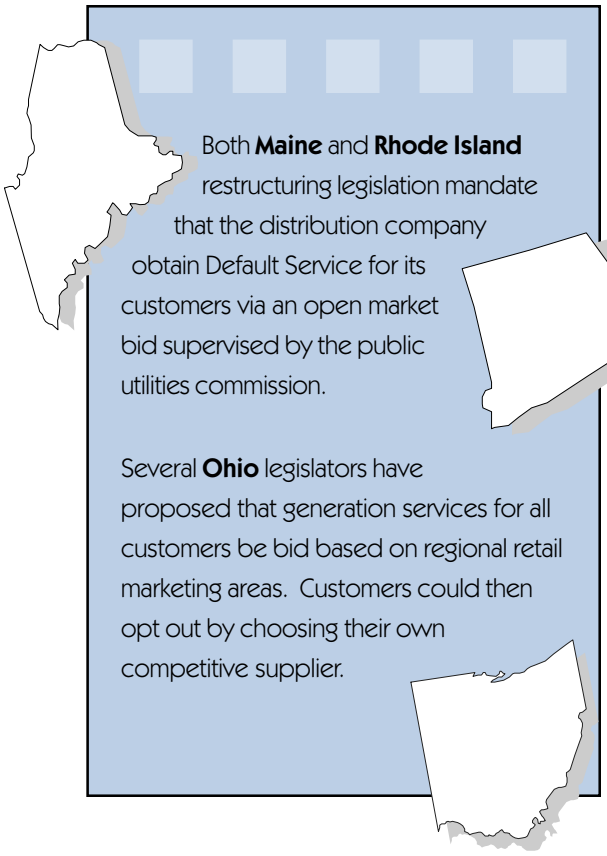
- customers who need supply during a transition to a new dwelling or who become new customers and have not yet chosen a supplier; and finally,

- those customers whose supplier stops doing business or whose license is revoked by a state agency.

It is important to recognize that the Default Service option exists to serve two different groups of customers: (1) customers who choose not to select a competitive supplier; and (2) customers who are unable to select or retain service from a competing supplier. The purpose of Default Service for customers who have options, but do not exercise them, is different from the purpose of safety net service for those who are unable to obtain competitive electricity services with reasonable terms. With regard to the choose not-to-choose group, states will have to decide who will provide the generation portion of the service. This decision will have a significant impact on market power (that is, whether the incumbent will be awarded these customers) and customer acceptance of change. If there is too little change, customers may not see the point of entering the competitive market. If there is too much change (i.e., the adoption of a volatile market-based price as a substitute for an historically stable rate structure), customers may resist and threaten the political acceptance of the move to competition. As in all other aspects of restructuring, the market price and number of competitors will have a great deal to do with customer reaction to, and interest in participating in, the competitive market.

The purpose of ensuring a safety net for customers who cannot obtain generation service at a reasonable price is related to universal service policy goals and the need to assure access to the electricity system for all customers. Whether technically low-income or not, these customers have a basic need for continuous electric service, and society has an interest in preventing unnecessary risks to household health and safety that could be caused by significant interruptions in the supply of electricity. The alternative is physical disconnection of service. Nothing would do more to create adverse reaction to competition than a significant increase in customer disconnections as a result of difficulties working with competitive suppliers or the inability of customers to obtain service from suppliers. Even if most customers need Default Service for only short periods of time, some kind of Default Service will *always* be needed and should not be confused with what may be a short-term need for Default Service for customers who choose not-to-choose.

Even though Default Service serves multiple purposes, it is possible to devise one regulated service to respond to different needs. Alternatively, a state could authorize two different services, one for a transition period which is available to current customers who choose not-to-choose, and another which is permanently available to any customer in transition or who enters the



Both **Maine** and **Rhode Island** restructuring legislation mandate that the distribution company obtain Default Service for its customers via an open market bid supervised by the public utilities commission.

Several **Ohio** legislators have proposed that generation services for all customers be bid based on regional retail marketing areas. Customers could then opt out by choosing their own competitive supplier.

competitive market and seeks to return to regulated rates. Massachusetts has pursued this approach. Utilities in the state will offer a Standard Offer rate to existing customers for a seven-year period, which will be regulated based on rates in effect prior to the onset of retail competition. Safety Net service, a permanent service with more volatile market-based rates, will be available to any customer who enters the competitive market and then seeks to return to regulated rates.

The most controversial policy issue associated with Default Service has been its impact on the existing utility company, particularly with respect to customers who do not choose in the early years of retail competition. If customers can, by doing nothing, remain customers of their current utility, then the distribution utility (and its retail sales affiliate) has gained a tremendous competitive advantage. Competitors will have an uphill battle to penetrate this almost guaranteed market, which may, in turn, discourage them from incurring marketing expenses associated with gaining residential and small commercial customers, especially in relatively small markets. In most jurisdictions, incumbent utilities have argued strenuously for the right to provide electricity to these customers and to be clearly identified as their electricity source. Potential competitors have just as strenuously objected, pointing out that this approach "gives" a significant share of the emerging market to incumbents and will prevent, or at least delay, the development of a competitive market.

States have identified four ways to provide Default Service:

Create a Bid Process

This process allows one or more retail suppliers to provide Default Service through a competitive bidding process. The winning bidder (or perhaps two bidders offering different rate designs) obtains the right to serve customers for a set period of time. The state requires the distribution company to offer electricity service pursuant to the bid conditions and procedures or establishes new regional entities to conduct bids for such services, thereby entirely eliminating the distribution utility. In either case, customers see a change in their electricity supplier. The distribution company or regional entity is required to act in a

fiduciary capacity on behalf of its customers in conducting the bid process so that their customers get the best deal possible, given the conditions of the stated offer. Under this approach, the state regulatory commission oversees the bid process and mandates key terms for Default Service: rate design, billing options, term of service, etc. This option has the advantage of providing a regulated service option with the least amount of change to customers but which builds upon the competitive aspects of the new electricity market.

Require Distribution Utilities to Provide Default Service at Market-Based Rates

Some states have chosen to anoint the distribution company as the provider of Default Service and to mandate a market price, that is, the price any customer would pay for access to short-term supplies of electricity. This scenario is often accompanied by a requirement that utilities divest their generation facilities or sell their power output into a pool and then obtain market priced electricity for default customers. Because short term market rates are often volatile, this option is often accompanied by legislative requirements to cap rates at current levels or even decrease rates overall.

Require Distribution Utilities to Provide Default Service Under a Rate Cap or Rate Decrease

Another variation on Default Service requires distribution companies to continue supplying electricity to its customers using its own generation facilities or energy obtained from the wholesale market. This option is also typically accompanied by a requirement that the utility provide either a rate cap or rate decrease during the transition years (the years in which stranded costs are being recovered). This option allows customers to do nothing and continue to receive electricity from their current utility.

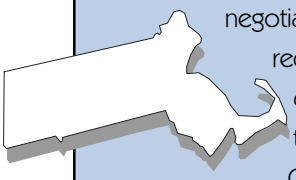
In **California** distribution utilities must sell all their power into the power pool (Power Exchange) and then obtain electricity for Default Service customers at the prevailing market price for a transitional period. This service is priced at market rates, but the customer's total bill reflects a 10% rate decrease in the early years, as mandated by the state's electric restructuring legislation.

Ballot and Spread by Random Assignment

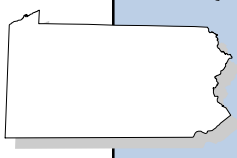
Prior to the implementation of customer choice, a state could mandate that customers choose an electricity supplier via a ballot system and randomly assign those who do not select a specific supplier to one of several suppliers who have registered and indicated a willingness to accept such customers. The commission would have the authority to mandate certain basic minimum terms which suppliers would have to meet as a

condition of providing this service. This approach has the advantage of forcing the development of a competitive market, but customers may not be ready to accept this mandated change in their electricity supplier.

In fact, this approach was used in some states following implementation of competition in the interstate long distance telephone market. Customers complained and resisted automatic assignment to a supplier, referring to it as a form of "regulatory slamming" and triggering association with the particularly egregious practice of changing customers' telephone providers without permission.



Larger utilities in **Massachusetts** have negotiated settlements which require distribution companies to continue to provide a Standard Offer based on current rates with a 10-15% decrease for customers who do not choose. In addition, these utilities must also provide a Safety Net Service to customers who enter the competitive market and then seek to return to the distribution company for a short period of time. This service must be provided at short term market rates. Recently-enacted electric restructuring legislation in Massachusetts has adopted this approach.



Pennsylvania's electric restructuring law does not mandate divestiture and requires the local utilities to continue to provide generation services subject to various rate caps during the period in which stranded costs are being collected. The PUC may choose an alternative method for Default Service after the transition period.

Assuring Reliability of Service

Distribution utilities will remain responsible for most aspects of power quality because of their retained ownership of the distribution system, that is, the poles and wires that deliver electricity to each customer's home and place of business.[15] Therefore, distribution utilities will remain responsible for service reliability (outages, their frequency and duration), installation of service (service drops, as well as line extensions in previously unserved areas), service disconnection, complaint resolution, change-orders, and billing and collection.

Electric restructuring legislation passed in several states has reaffirmed the duty of distribution utilities to maintain service quality and reliability in the transition to a new industry structure and has linked that obligation to the use of Performance-Based Ratemaking (PBR) in setting rates for distribution services. PBR typically retains strict control over basic service rates for core customers by either freezing prices or revenues or establishing a formula that restricts utilities' ability to raise prices or revenues for these customer groups. Utilities are usually given significant pricing

and marketing flexibility within limits set by either the rate freeze or the rate formula. In return, utilities assume more risk. Shareholders may retain earnings if the utility is efficient or if earnings increase, but must also assume the risk of loss if earnings drop during the term of the plan. Most of these alternative rate plans are multi-year in nature.

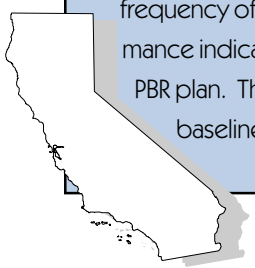
Utility commissions have struggled with how to assure adequate customer service and reliability through PBR. Commissions initially reasoned that they would rely on their existing rules and investigatory authority to monitor and respond to any deterioration in service quality or reliability. Many commissions dealing with deteriorating service quality in the telephone industry have found this approach to be insufficient.[16] More recent regulatory plans for both telephone and electric/gas utilities contain a specific customer service and reliability index that monitors selected attributes of service quality and establishes penalties in the form of customer rebates or earnings reductions if performance deteriorates during the term of the plan.[17]

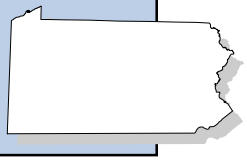
Universal Service Programs

A thorny issue in every state is how to address the impacts of a competitive electricity market on vulnerable customers. Some customers are vulnerable because of their inability to afford utility services or because they are unable to read and comprehend their rights and responsibilities in a competitive market. Most states fund universal service programs through utility rates, either directly or indirectly, which are designed to assist low-income, elderly, or disabled customers with affordable electric service. These programs typically include

- shut-off or disconnection moratoria;
- flexible payment arrangements;
- ratemaking policies concerning how utilities are "made whole" for bad debt and customer service expenses;

Both the **California** and **Pennsylvania** utility commissions have initiated rulemakings that mandate reporting requirements for their distribution utilities which monitor service reliability and other attributes of customer service. These proposed rules typically require distribution utilities to report key indices of reliability, such as minutes of outage per customer and frequency of customer outages. The California PUC will continue to include these performance indicators in the distribution utilities' Service Quality Index included in its PBR plan. The indices include financial penalties for failure to meet historical baseline performance standards.





- requirements for budget billing and bill payment counseling;
- bill payment assistance programs, rate discounts, percentage of income payment plans, and arrearage forgiveness when customers make regular payments; and
- targeted energy efficiency and weatherization programs.

Direct costs associated with targeted discounts and energy management services are relatively easy to identify, but the indirect costs or benefits of certain programs are not as easily identified. Utilities have argued that these programs should not be funded through rates in a competitive environment. Of course, competitive suppliers will have no obligation to comply with these traditional public purpose programs without specific regulatory directives. Distribution companies, although regulated, will have a much narrower role. Policymakers have legitimately asked whether electricity should be treated like food or gasoline—where the government's role to assist those without sufficient resources is handled through the tax system. Most commissions and state legislatures that have taken action in this area have announced their support for continuation of programs and policies that address low-income customers and others with special needs. Legislation adopted in some states not only mandates the continuation of current programs, but allows for expansion or development of new programs by the public utilities commission.

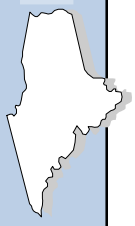
State policymakers are confronting inadequate funding of traditional financial assistance programs for basic needs,[18] and a lack of certainty about the future price of electricity, particularly for low-income customers who may be faced with few or no supplier options. Bill assistance and other programs have been created via utility regulation, modest to be sure in some states, for vulnerable customers facing unaffordable electric or gas bills. Proponents of funding such obligations by means of the state's general tax system argue that utilities are not social welfare organizations and that it is more equitable to fund assistance programs through the tax structure based on a household's income and ability to pay. Those who support funding these programs via utility rates argue that the cost of these programs is already included in rates, that the creation of a new tax-supported energy assistance program is unlikely to occur in the near future, and that a small per-kilowatt hour charge is a relatively small price to pay for universal service programs when industrial customers stand to reap significant benefits through lower prices and increased service options. [19]

The design and funding of these programs will no doubt vary among the states. In Maine, each utility has designed different programs to respond to local concerns within the statutory expenditure guideline of .5% of jurisdictional revenues. The Maine PUC has initiated a rulemaking to determine whether the programs should be operated on a statewide or distribution utility-basis and whether existing

programs, which are different at each utility, should follow a uniform approach.[20] The California Public Utility Commission has appointed a Low-Income Governing Board to recommend a statewide administrative structure for low-income programs funded through distribution utility rates.[21] The Pennsylvania PUC has ruled that existing utilities should maintain control and implementation of their low-income programs,[22] and has addressed the exact program design and funding level in each utility's restructuring plan. To date, the Commission has substantially increased the funding and eligibility for these programs.[23]

The role of competitive suppliers in funding and delivering universal service programs has been explored in some states, but no state has yet designed a system in which suppliers fund program benefits to low-income customers. However, the Pennsylvania PUC has ordered that bill payment assistance program credits, provided to qualified low-income customers, be "portable." That is, they must be applied in a pro-rata manner to both the distribution and the generation portions of the bill.[24] This will assure that low-income customers enter the competitive market with their bill credits (based on their total electric bill) intact.

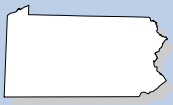
Selected Universal Service Programs



Maine: Distribution utilities must continue to fund low-income assistance programs up to .5% of jurisdictional revenues.

California: The existing 15% discount and access to no-cost weatherization programs for low-income customers will continue, funded by a Public Goods Charge applicable to all customers through their distribution companies.

New Hampshire: Based on the universal service directives in its electric restructuring legislation, the N.H. PUC approved a new low-income assistance program to be funded by distribution companies at a rate of 3 mills per kWh.



Pennsylvania: Electric restructuring legislation mandates, at a minimum, continuation of current programs and policies and requires such programs to be funded through a non-bypassable charge on customers. In the context of individual restructuring plans, the PUC has expanded both energy efficiency and bill payment assistance programs.

Illinois: Recent legislation authorizes a new $76 million low-income program to be funded by distribution utility ratepayers.

Credit and Collection Policies

Most states will continue to regulate the credit and collection practices of distribution utilities, much as they do today. These regulations typically include bill content and format requirements, credit and collection procedures, limitations on the disconnection of at-risk customers (particularly during extreme weather conditions), right to payment arrangements, and reconnection policies. Electric restructuring legislation in several states (Pennsylvania, Massachusetts, and Connecticut) has imposed some or all existing credit and collection rules on all competitive suppliers as well. Other states are creating separate rules of a less comprehensive nature. These issues will be explored in Chapter III of this *Blueprint*. However, with respect to distribution utilities, there are at least two issues that should be addressed in this chapter: physical disconnection of service and allocation of partial payments.

Disconnection of Service

In a competitive market, sellers usually do not have collection devices that prohibit non-paying customers from obtaining the same product from alternate sellers. Most state restructuring laws to date prohibit competitive suppliers from using the threat of physical disconnection at their customers' meters to collect unregulated charges. Of course, suppliers must be able to discontinue their services to nonpaying customers, but this can be accomplished by notice to customers (*Notice of Contract Cancellation*) and to the distribution company without physical disconnection of customers from the grid. If the distribution company fails to obtain specific instructions from its customers, the customer whose contract is canceled by a supplier will be provided with Default Service, which should be subject to actual disconnection according to commission-approved procedures. Competitive suppliers will be able to use standard collection options available to any competitive business, many of which are subject to state and federal consumer protection laws, discussed further in Chapter III. These options include contacting customers and attempting to directly collect unpaid bills, using debt collection agencies, Small Claims Court, and, in more serious cases, filing a civil complaint in a court of general jurisdiction. Suppliers will also be able to report customer credit histories to credit reporting agencies and make use of this information in determining credit terms for applicants.

Allocation of Partial Payments

Closely related to the discussion of service disconnection is the issue of allocating partial payments. If a customer pays only a portion of a total bill issued by a distribution company under contract with the customer's supplier, a rule must be established to determine how to allocate the partial payment between the regulated and non-regulated services. Because the distribution and transmission charges are regulated and the electricity sales are not, most states have determined that the customer's payment be first allocated to those services subject

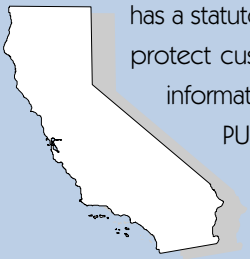
to disconnection (and for which there is no alternative). This is the same approach typically taken today when a regulated utility bills for non-regulated services, such as the sale or lease of water heaters by a gas utility. In addition, this approach also assures that customer payments will be allocated first to the nonbypassable charge which covers stranded costs included by distribution utilities on customer bills.

Customer Privacy

Consumers today should be able to expect that their utility billing and payment records are confidential. There is no federal law, however, that compels privacy, and in many states, there is no statute that specifically protects such records.

Typically, utilities protect this information from disclosure and do not routinely sell or make available customer-oriented research and survey results. In a retail competition scenario, the distribution company will have information concerning its customers that retail suppliers will want to obtain, such as usage profiles and billing and payment history. Allowing access to such information in a competitive market is complicated by the fact that regulated distribution companies will naturally want to give access and preferences to their unregulated retail sales affiliates. This may result in cross-subsidization of the utility's unregulated retail sales efforts by regulated rates for its monopoly distribution function, which, in turn, will hamper the development of a truly competitive market because other competitive suppliers will not have such an advantage. Indeed, because the distribution company and the marketing section of most current public utilities are one organization, this information is routinely exchanged now and, depending on who gets the billing and accounting computer, will continue in the future unless specifically prohibited.

States must strike a balance between the need for fair dealings in the use and access to customer information to enable development of a competitive market and customers' reasonable expectation that personal billing and



Unlike most states, **California** has a statutory policy to protect customer-specific information held by utilities. PUC Code §§585 and 588 establish a general policy that protects customer-specific information held by utilities without written authorization by the customer. Narrow exceptions for commission and law enforcement access to customer-specific billing and payment records require that any exception provide for "...protection of the reasonable expectation of customers of public utilities in the privacy of customer-specific records maintained by that utility." Even in providing for access to such information by law enforcement officials, a customer's usage is protected from access without a court order or subpoena.

payment information will remain private. Suppliers argue that customers benefit if, at least, their usage information is made available, because suppliers can better target their marketing offers based on usage profiles. However, most states have, to date, allowed the release of generic information (not customer-specific) without permission, and generally prohibited the release of customer-specific information without their permission. This requires the distribution company to obtain individual customer permission to release information to its retail sales affiliate or to any other supplier. In addition, states that have addressed this issue have required that distribution utilities provide their customers with historical usage history at least once per year at no cost.

State rules in this regard typically do not change the ability of the distribution utility or retail supplier to communicate customer-specific information to credit reporting agencies or debt collectors for lawful purposes as described in the *Fair Debt Collection Practices Act* or *Fair Credit Reporting Act* both of which are discussed further in Chapter III.

CHAPTER III

STATE REGULATION OF COMPETITIVE ENERGY SUPPLIERS

The Rationale for State Consumer Protection Regulation

While the move to retail electric competition is often referred to as "deregulation," this description is not entirely accurate. No state has proposed that the retail sale of electric or gas services be totally deregulated. Rather, this description is most often used to refer to the repeal of the state's traditional authority over prices charged for generation services. Traditionally, pricing authority has been exercised at the state level by a public utility commission which reviews and approves any rate or charge for services provided to retail customers. Rates, charges, and the terms of service are then set forth in "tariffs" that are mandatory terms or conditions of service under which utilities may provide services to customers.

While prices themselves will not be regulated, many other aspects of the bargain between the energy service provider and the customer, particularly the residential customer, will be subject to state regulation. State regulation will be based on consumer protection principles that form the basis for regulation of many products and services marketed to residential customers. State regulation is often justified by the importance of a particular product or service to consumer health and welfare. For example, housing prices are rarely regulated, but housing units must typically conform to state and local standards to prevent the sale or rental of substandard housing. State regulation also protects individual consumer bargaining power when dealing with sellers who seem to hold "all the cards" in the bargaining game. Consumers are often presented with "contracts of adhesion," which are pre-printed contracts that contain detailed terms that bind them after the deal is struck and over which they have little bargaining ability. In other words, while nominally competitive, the market may be one that favors one side of the bargain unduly even if the price is technically subject to competition. Rental housing, consumer credit, and insurance are examples of industries in which states have traditionally played an active role in regulating contract terms. Regulatory

> Retail electric and gas competition substitutes contracts between parties in place of traditional state-approved tariffs. The buying and selling of generation services is thus governed by the law of contracts and not the non-negotiable tariffs of a fully regulated public utility industry.

action may take the form of disclosure (uniform methods of price disclosure, plain language contract requirements) or outright regulation of certain terms (prohibiting certain practices, allowing a contract term only under certain conditions and with certain disclosures, providing a right of rescission or cancellation).

The sale of electricity is a prime candidate for this traditional form of state consumer protection and contract regulation for several reasons. First, electricity is a necessity of life. Most state and local housing laws include lack of electricity and heating in the definition of "substandard housing."[25] Second, consumers are not prepared to shop for electricity after almost a century of "cradle to grave" regulation over every aspect of their electric and gas utility services. Even in New Hampshire, after extensive publicity and marketing efforts by suppliers which began early in 1997, most residential and small commercial customers were not aware of retail electric competition or the probable impact of competition on their monthly electric bill in a survey conducted in the fall of that year.[26] Results such as these suggest that consumers are not prepared for dramatic changes and may need additional consumer protections during a transitional period.

And third, most contract terms offered to residential and small business consumers will not be subject to negotiation. They will resemble typical "contracts of adhesion," which have boilerplate provisions not subject to individual negotiation. Therefore, it is likely that states will seek to regulate some aspects of the contractual bargain between the sellers of competitive energy services and residential and small commercial customers. Such state regulations should be applicable to transactions by both distribution companies (with regard to the direct provision of generation services) and retail electric suppliers in their dealings with residential and small commercial customers. Most states to date have concluded that transactions by larger commercial and industrial customers do not need standardized protections.

Finally, the need for state contract regulation and consumer protection reflects lessons learned during telephone deregulation. Many states have taken steps to regulate certain electric competition practices based on their experience with, and customer reaction to, long distance telephone competition.

Existing State and Federal Consumer Protection

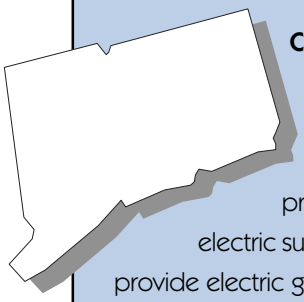
The regulation of competitive energy suppliers should reflect existing state and federal consumer protection laws, the most important of which are briefly highlighted below.

Application for Credit

The federal Equal Credit Opportunity Act (ECOA)[27] applies to the granting of "credit," including credit for utility services.[28] The term "credit" in this federal statute is defined very broadly to include any agreement in which the obligation to pay is deferred, even when there is no finance charge and regardless of the number of installments required for repayment. The ECOA prohibits credit discrimination on the basis of race, color, sex, marital status, religion, national origin, age, handicap, receipt of public assistance (such as the receipt of Temporary Assistance for Needy Families (TANF), formerly the Assistance for Families with Dependent Children (AFDC) program, or food stamps) and exercise of dispute and enforcement rights under federal consumer protection statutes. The ECOA is particularly important to electricity sales because it may be an important tool to prevent the practice of "redlining." "Redlining" refers to the practice of denying credit or altering credit terms to residents, simply because they live in certain neighborhoods.[29]

Furthermore, under the ECOA, a creditor may not alter deposit requirements or adopt different disconnection procedures based on race, receipt of public assistance, or because another family member owes a balance on a separate account. The ECOA incorporates the "effects test" used in housing and employment litigation to prevent discrimination that, while not intended to rely on an illegal basis for credit denial, has a demonstrated adverse effect on a minority group with racial, ethnic, or other characteristics listed in the ECOA.[30]

The Fair Credit Reporting Act (FCRA)[31] is a more specialized federal statute aimed



Connecticut's policy concerning discrimination in the application for electricity service provides that... "No electric supplier...shall refuse to provide electric generation services to, or refuse to negotiate to provide such services to any customer because of age, race, creed, color, national origin, ancestry, sex, marital status, sexual orientation, lawful source of income, disability or familial status. No electric supplier shall decline to provide electric generation services to a customer for the sole reason that the customer is located in an economically distressed geographic area or the customer qualifies for hardship status....No electric supplier shall terminate or refuse to reinstate electric generation services except in accordance with the provisions of Title 16 of the General Statutes." *An Act Concerning Electric Restructuring, Public Act No. 98-28*, §29.

primarily at the practices of organizations who maintain data on consumers and sell it to businesses, who then use it as part of their evaluation of applications for credit, insurance, or employment, or other transactions initiated by consumers. The statute was originally enacted in 1970, but was extensively amended in 1996 (Public Law 104-208). The FCRA requires that when a business relies on information in a consumer report to deny or alter credit terms, certain disclosures must be made in writing to the affected consumer. This law currently applies to public utilities and will apply as well to retail energy suppliers. A key change of the 1996 FCRA amendments requires that providers of credit information, such as stores, banks, insurers, energy suppliers, and others, report accurate information.

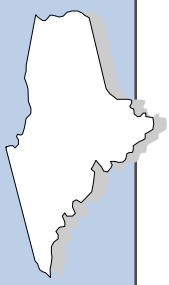
Both statutes are enforced by consumers (who may file for statutory damages and attorney fees), the state Attorneys General, and the Federal Trade Commission through cease and desist orders, court action, restitution, and injunctive relief, as well as other specialized agencies for creditors under their jurisdiction, such as banking authorities.

Credit Terms (Truth in Lending Act)

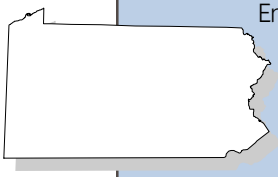
Both the state regulation of finance charges, consumer credit terms, and the federal Truth in Lending Act (TILA)[32] have not generally applied to public utilities because these laws apply to a narrow definition of credit. For the most part, the federal TILA and state consumer credit laws regulate transactions in which a finance charge is imposed, i.e., when a debt is deferred and an interest rate charged for installment payments. A credit transaction subject to the TILA triggers a host of disclosure, procedural,

Selected Services Subject to Competition

California has ordered that so-called "revenue cycle services" (billing, metering and consumer services) be subject to competition for large customers in 1998 and for residential and small commercial customers beginning in 1999.

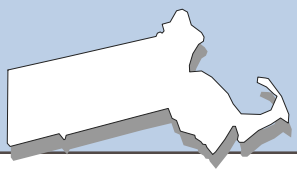


Maine's electric restructuring legislation mandates that billing and metering competition commence no later than 2002, two years after full retail competition begins in 2000.



Pennsylvania's electric restructuring legislation does not specifically provide for competition in services other than generation. However, the recent PECO Energy restructuring plan settlement calls for billing and metering competition in that utility's service territory beginning in 1999.

Massachusetts' legislation requires a study of metering, customer billing and information services competition by January 2001.



and substantive requirements. It is possible that retail energy suppliers will devise payment plans that resemble credit sale transactions or sponsor open-end credit plans for the sale of electricity which will trigger the TILA disclosure and disputed bill procedures. It is more likely, however, that electricity sales will not fall under the TILA because sellers will typically not structure contracts to allow for extended payments, partial payments, or a finance charge as that term is defined in the TILA. Instead, retail electric sale contracts that require the customer to pay in full within a certain number of days or pay a specified late fee will be more common transactions. These terms, by themselves, usually do not qualify as "credit" within the meaning of the TILA.

Unfair and Deceptive Practices

The Federal Trade Commission (FTC) Act prohibits "unfair methods of competition and unfair or deceptive acts or practices in or affecting commerce."[33] All states have adopted a similar statute, sometimes referred to as the "Unfair and Deceptive Practices Act" or UDPA, typically enforced by the state Attorney General. Under federal law the FTC has jurisdiction to define such practices in generic rules where deceptive practices are widespread, or to enforce the prohibition through individual adjudicatory proceedings, using cease and desist orders and taking businesses to federal court to obtain penalties and redress to affected consumers. Most state Attorneys General have similar remedies under UDPAs. While the FTC Act does not give consumers a private right of action, under some state laws individual consumers can sue businesses and seek actual damages (with a minimum amount), equitable relief, and attorney's fees. Class actions by consumers are also an option under some state laws. Historically, these statutes have been used to prevent unlawful and deceptive advertising, deceptive pricing, and unfair trade practices, and to regulate special sales approaches, such as door-to-door sales, multi-level marketing or pyramid selling schemes, and negative option plans.

The FTC Act exempts federal banking and insurance industries on the grounds that these industries are closely regulated by other federal and state authorities. Some state statutes also exempt state banking and insurance industries because unfair and deceptive practices are also tightly regulated by other state authorities. Some state UDPA laws specifically exempt public utilities[34] and about half of the state consumer protection laws have a provision which generally exempts transactions which are subject to some regulation by a state or federal administrative agency from regulation under the UDPA.[35] State courts have interpreted this exemption both narrowly (the specific conduct must be condoned by the state or federal agency) and broadly (the business is exempt if it is subject to regulation), depending on the nature of the state exemption statute and the nature of the regulatory scheme. This situation will need to be clarified with respect to the activities of retail energy suppliers, particularly the affiliates of regulated distribution companies.

Debt Collection

The Fair Debt Collection Practices Act[36] (FDCPA) regulates the conduct of debt collection agencies and others, including attorneys, who collect debts owed to a third party. Therefore, although an important consumer protection statute, the FDCPA does not directly apply to a seller or creditor, e.g., energy supplier, who collects debts owed directly to him or her under most circumstances. Third parties who collect debts owed to a utility or a competitive electric service provider would, however, be subject to the FDCPA.

Telemarketing and Consumer Fraud and Abuse Prevention Act

Congress enacted this legislation[37] to combat the growth of telemarketing fraud by providing law enforcement agencies with powerful new tools to provide consumers with new protections, and to provide guidance for lawful telemarketing activities. Under this Act, the FTC adopted the Telemarketing Sales Rule.[38] Key provisions of the Rule require specific disclosures by telemarketers, prohibit misrepresentations, set limits and times telemarketers may call consumers, prohibit calls after a consumer asks not to be called, and requires that specific business records be kept for two years. The Telemarketing Sales Rule also restricts telemarketing calls to the hours between 8 am and 9 pm. Utilities and competitive electric suppliers will be subject to this Act and the FTC Rule.

Cooling Off Rule

The FTC has also promulgated the Cooling Off Rule[39] which gives consumers three days in which to cancel and receive a full refund on sales of $25 or more when the sales transaction is made at the consumer's home, his/her workplace, or at facilities rented by the seller on a temporary basis, such as hotel rooms or convention centers. The Cooling Off Rule is relevant to electricity sales that occur in locations away from the seller's normal place of business. Sales that occur subject to this Rule require the seller to provide the buyer with a summary of the buyer's cancellation rights, and two copies of an actual cancellation form. Some states have extended their version of this rule to sales made over the telephone, thus triggering a 3-day right of cancellation for sales of electricity via telemarketing.

Definition of Services Subject to Competition

All state electric restructuring legislation adopted to date defines competitive services to include, at a minimum, the generation and sale of electricity. The most controversial issue surrounding the definition of competitive services has been whether they should include billing, metering, and associated consumer services.

Proponents of competition in billing and metering services point to the potential for customer savings if a competitive market is allowed to develop. Suppliers also argue that they need to be able to

package these services with electricity sales so as to link the many products that may be bundled, thus emphasizing the key role played by the bill as a marketing tool. Other advocates for billing and metering competition point to the value of "real-time" meters that send proper price signals concerning customer electricity use at certain hours of the day or times of the year, a feature not available on most residential and small commercial customer meters today. Many suppliers have pointed out that their motivation to sell electricity to low-usage consumers may be greatly influenced by their ability to market additional (and perhaps more profitable) services to them. The impetus of technological developments in the metering industry in particular, coupled with lower costs, suggests that customers will have substantially more choices for metering and billing in the future.

Opponents of competitive billing and metering point out that customers will be confused enough with generation competition without allowing additional services to be unbundled from the current utility bill and subject to competitive marketing. In addition, union representatives in particular emphasize the impact on local jobs if billing and metering are suddenly subject to competition. Utilities themselves argue that these services are part of the natural delivery services monopoly and that some of these services cannot be provided more economically in a competitive market.

Whether states move to outright competition in these areas or allow developments to proceed at a slower pace, they will face the following concerns:

Should suppliers be able to offer alternative meters to their customers that allow for different pricing options, such as time-of-day and time-of-year prices?

Some higher-use customers may have a lower monthly bill with meters that allow more sophisticated pricing structures. Suppliers may also offer energy management or home energy systems with meters that allow integration of energy services with alarms, automatic appliance controls, and even telecommunications services. However, low-usage residential customers (who do not have electric hot water or heat or other high-use appliances) may not benefit from such oppor-

Norway's *Guidelines for Metering and Settlements of Electricity Trade* (November 5, 1994) require large customers to obtain real-time meters to allow billing on their actual hourly usage characteristics. Residential and small commercial customers with traditional meters are billed on the adjusted load profile of the network, or distribution area in question. The adjusted load profile is calculated as the difference between the network owner's system load profile, adjusted for network losses, and usage by end users with real-time meters. These load profiles are calculated quarterly. Most states in the U.S. have adopted Norway's approach.

tunities because both the equipment (meter) and billing costs are likely to be higher than the potential savings.

Who should be able to issue bills to customers?

Suppliers argue that it is unfair to allow distribution utilities to issue a combination bill that includes both regulated and competitive services without providing such an option to them as well. The California deregulation order, which allows suppliers to issue a unified bill, makes it clear that suppliers who negotiate such an option with distribution companies must assume the risk of collection for both the regulated and stranded cost charges. This will require suppliers to conduct their own collection programs without benefit of the distribution company's "threat of termination" or "disconnection" service policies.

How should these services be unbundled from current rates?

If suppliers can sell and bill separately for metering services, state regulators will then have to unbundle these charges from current rates and give customers who obtain them a credit on their distribution charges so that customers do not pay twice.

Should meter installation be tested differently?

Some states may want to separate physical installation of the meter from automatic meter reading options offered by some suppliers. This would allow utilities to maintain control over meter installation (with its safety considerations), but allow customers to have alternative meter usage data accessed directly by suppliers.

How should customers with standard meters be treated?

Customers who do not have or want a "high tech" meter should be able to participate in the competitive market with their standard mechanical meter. Although some states require that large industrial customers obtain "real time" meters to enable more accurate billing, all other customers should be billed on the basis of standard load profiles for the customer class in question, rather than on different rates for each hour of service. This approach was pioneered in Norway, a country that moved to retail electric competition several years ago.

Licensing Criteria for Suppliers

Many industries and businesses whose activities can affect public health and safety, such as hospitals, nursing homes, insurance companies, debt collection agencies, home repair contractors, and banks are required to meet minimum state requirements to conduct business in that state. In a similar vein, whether referred to as "registration," "certification," or "licensing," most state electric restructuring legislation requires prospective electricity suppliers to comply with minimum state requirements.

Typically, states require a form of security, or bond, to assure reimbursement of customer deposits, advance payments, or restitution ordered by a regulatory

body. The amount of the bond is set high enough to compensate parties adversely affected by a firm's failure to perform. Requiring a bond (like a performance bond on a construction project) or a letter of credit has at least two beneficial consequences. First, a company's ability to obtain a bond or a letter of credit is proof of its financial soundness. Second, the bond provides a source of funds for compensation to individual parties. Most states require a bond as a condition of licensure, the amount of which reflects the different types of retail suppliers likely to emerge.

Typical state electric restructuring legislation requires the state regulatory authority, usually the public utility commission, to license retail electric or gas suppliers before conducting business within the state. Licensing requirements may include the following minimum criteria:

- Evidence of general financial integrity
- A bond or equivalent security in an amount based on the applicant's volume of sales
- Evidence that the firm is technically qualified to conduct its proposed business
- Information on disciplinary or enforcement actions in other states in which it operates
- Information concerning the applicant's consumer complaint history in other states
- Disclosure of its ownership structure and affiliates doing business in the state
- Location(s) of the applicant's office in the state, or, if no office, its agent for service of process and its geographic scope of business
- A description of services that will be offered
- The name and telephone number of a customer service individual for customers to contact the supplier

The licensing process should not be a barrier to entry, as is the typical Certificate of Convenience and Necessity used for most public utility licensing today. Rather, the role of the utility commission in the licensing process is to ensure financial safety, system reliability and basic consumer protections.

Disclosures

Specific disclosure requirements that a state should consider as part of its regulatory scheme for electric suppliers are described in detail in Chapter 1.

Regulation of Credit Practices

Most state electric restructuring legislation imposes only those credit-related rules on suppliers that already exist in state and federal consumer credit laws (such as the ECOA, discussed earlier in this Chapter). However, some states have recently required suppliers to comply with most or all credit and application-for-service rules currently applicable to utilities. The Massachusetts and Connecticut electric restructuring statutes require suppliers to comply with existing consumer protection rules with respect to credit and application-for-service. The Connecticut statute also requires suppliers to recognize a customer's right to a medical emergency, winter-based moratoria on cancellation, and payment arrangement requirements.

Regulation of Contract Terms

Suppliers typically include contract terms most favorable to them in their pre-printed contracts with residential and small commercial customers. While disclosure of these contract terms in a *Terms of Service* document, coupled with a right of rescission, is an important consumer protection tool, disclosure alone may not be sufficient remedy. It is unlikely that suppliers will compete on many of these pre-printed terms. Some suppliers may offer superior customer service (such as fast-acting 1-800 call centers, more billing options and fast response to disputes and questions). It is less likely that suppliers will compete to offer generous payment arrangements for those who cannot pay in full every month, waive contractual cancellation penalties for customers who need to move to Default Service, or waive collection costs for low-income customers. Therefore, the following substantive contract terms are candidates for state regulation:

- **Late Fees:** States may establish a maximum monthly late fee. No more than 1.5% per month is typical, but Massachusetts rules prohibit late fees for residential customer transactions.

- **Notice of Renewal:** Some states require suppliers to notify customers at least two billing periods in advance of the need to renew and the consequences of failure to renew.

- **Length of Contract Term:** Some states are considering whether residential and small commercial contracts should have a maximum term (1-2 years), at least during a transition period. This would allow customers to become more experienced prior to allowing door-to-door sales representatives to obtain customer signatures on 5-year agreements with excessive early termination penalties, a practice that occurred in Toronto, Canada, at the onset of retail gas competition.

- **Collection Costs:** Suppliers should be prohibited from charging collection costs or damages in addition to the overdue amount.

- **Payment Arrangements:** States have differed on whether suppliers must offer at least one reasonable payment arrangement to residential customers prior to contract cancellation.

- **Notice of Cancellation:** Suppliers should be required to provide a minimum notice period prior to cancellation of a contract for non-payment and establish the content of the notice.

- **Medical Emergency:** Most states (Connecticut is a notable exception) have not required suppliers to honor a medical emergency at the customer's household if declared by a registered physician for a minimum period, but this is a typical provision of state utility regulation.

- **Pre-Payment Meters:** Pre-payment meters are controversial because they allow customers to be disconnected from all electric service during extreme weather without notice or compliance with health and safety concerns. States may want to consider ruling against the use of such meters as a condition of service for low-income customers, unless suppliers require such meters as a condition of service for *all* its customers.

- **Deposits:** Several states regulate a maximum deposit amount for residential customers. In Pennsylvania, suppliers may not require the deposit unless customers have a history of failure to pay for electric service, thus prohibiting suppliers from basing their credit worthiness decisions on non-utility service history.

- **Right of Rescission:** Most states require suppliers to provide all new customers with a 3-day right of rescission that is triggered by their receipt of the *Terms of Service* brochure with its price and contract term disclosures.

- **Dispute Resolution:** Most states require suppliers to notify customers of their right to refer disputes to the state regulatory agency, if a supplier cannot resolve it satisfactorily. The ability to refer disputes to a neutral regulatory agency has an additional benefit beyond that offered to the individual consumer. Dispute resolution authority allows the regulatory commission to monitor sales practices as well as compliance with basic consumer protection rules.

Regulation of Unfair Trade and Marketing Practices

Most state electric restructuring legislation invests the state utility commission with authority to adopt regulations which prohibit unfair trade and marketing practices by energy suppliers. Other states may rely on their existing consumer protection laws and the jurisdiction of the Attorney General for this type of regulation. Regardless, every state so far has sought to adopt specific provisions to prevent slamming and to encourage renewable energy development.

Slamming

One potentially unfair trade practice that most states have already decided to regulate is "slamming," which is switching the customer's supplier without permission or with fraudulently-obtained permission, a practice that has been the subject of widespread complaint and condemnation in the telephone industry. This course of conduct is sufficiently likely to occur with competitive electric suppliers that state restructuring legislation has either prohibited the practice outright or authorized the regulatory commission to prevent it.

The most controversial issue associating with anti-slamming regulation has been whether customers must provide signed authorization before their distribution company switches suppliers. Proponents of such an approach view a signed authorization as the best method to prevent slamming. On the other hand, signature requirements provide an enormous advantage to existing utilities, as the signature acts as a barrier to contracts with competitive suppliers.

For example, if a customer personally communicates with a distribution company to authorize the switch and provides identifying information, such as his/her account number, additional barriers to finalizing this transaction should not be erected. After all, the contract to supply electricity is between the customer and the supplier. The distribution company's obligation is merely to record the change for billing purposes. Reliance on oral communication from the customer in such situations should be allowed. But what if the supplier has initiated contact with the customer (via telemarketing or mail) and has obtained valid consent over the telephone? Should the distribution company be allowed to switch the customer's supplier upon notice from the new supplier? What if the customer has cashed a check from the new supplier which states that cashing the check will cause the customer's electricity supplier to be changed?[40] Opening up the authorization to include anyone other than the consumer opens the door to fraud. Even requiring that the authorization be signed by the consumer (thus preventing telemarketing alone from finalizing the sale) is fraught with difficulty, as the check cashing scheme demonstrates.

Recent legislation in California,[41] Massachusetts,[42] and Connecticut[43] reflects a growing attempt to deal with this problem. Customers who are solicited by a

supplier, or his agent, to switch companies must not be switched until the new supplier obtains authorization in one of three methods: oral verification by an independent third-party; electronic verification; or written authorization. These options have proven to be the least likely to result in slamming, but they are not foolproof if a supplier is determined to commit fraud. In addition, this approach is likely to be most successful if accompanied by a "right to rescind" any contract for electricity within three business days after a customer receives a written *Terms of Service* brochure. If state policy links the "right of rescission" with receipt of contractual disclosures, suppliers will be stimulated to confirm their sales promptly. This approach will also accommodate the expectations of most customers who do not currently sign written contracts to obtain electricity, natural gas, propane and fuel oil.

At their annual meeting in California in 1998, the National Association of Attorneys General (NAAG) formed a task force to study the marketing of "green" power and other claims by electricity marketers. The task force is working to develop a set of model marketing guidelines for consideration by states moving to retail electric competition.

Marketing Renewable Energy

A marketing and disclosure issue that is sure to remain controversial is the manner in which electricity sources should be advertised as "green," "renewable," "less polluting," or "environmentally-friendly," how such disclosures should be regulated and, if so, by who and how. Recent national and regional surveys have confirmed that many customers want to shop for electricity based on environmental criteria.[44] Marketing campaigns conducted as part of the New Hampshire electric competition pilot program in 1997 confirmed this trend. Suppliers used such phrases as "We donate 1% of your power bill to groups working to protect New Hampshire's environment" (Working Assets, Inc.) and "Now is the time to start saving money and saving the planet" (Green Mountain Energy Partners, selling Hydro Quebec power). Because customers want to include environmental criteria in making their electricity purchase decisions, suppliers will want to focus on these aspects of their service to obtain new customers.

There is risk associated with marketing renewable energy, particularly insofar as advertising is concerned. Both state and federal laws prohibit deceptive advertising. At the federal level, the Federal Trade Commission (FTC) enforces the Federal Trade Commission Act;[45] state Attorneys General typically have primary authority for implementing state consumer laws relating to deceptive advertising and marketing. The FTC has issued policy statements describing its policies with respect to unfair or deceptive advertising

claims.[46] In addition, the FTC requires that all important marketing claims, whether expressed or implied, be substantiated.[47] The FTC has adopted specific guidance for environmental claims, *FTC Guides for the Use of Environmental Marketing Claims (16 CFR § 260)*. While these guidelines do not specifically mention electricity sales, general provisions, such as a requirement that sellers document their claims based on a reasonable interpretation by consumers, do apply. The *FTC Guides*, among other things, state that general environmental claims should be avoided or qualified, as necessary, to prevent deception about the specific nature of the environmental benefit.

CHAPTER IV

THE MANY FACES OF CUSTOMER CHOICE:

Aggregation And Group Buying Power

Individual customers will be able to participate in competitive electric and gas markets in several ways. The most common is referred to as "direct access." In this approach, customers enter into a bilateral contractual relationship with their chosen electric or gas supplier. The contract governs services, terms and conditions, and fees associated with provision of these services. Even though a distribution company may act as the billing agent for the supplier, the rights and remedies of the customer and the supplier will be established in the contract between them.[48] This chapter of the *Blueprint* addresses how the state may stimulate and regulate alternative approaches to electric competition that enhance its benefits to residential customers. These approaches, however, are not viewed as substitutes for consumer protection policies identified elsewhere in this document.

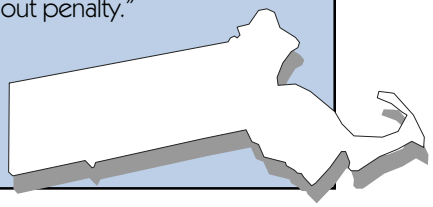
An alternative to direct access is a form of group buying that is generally referred to as "aggregation."[49] Under this approach, the customer enters into a relationship with an entity that acts as a middleman between him/her and the retail energy supplier. The entity may be a political subdivision, such as a municipality or county, or a national, state, or local organization that seeks to obtain energy and other products on behalf of its members. Aggregation may be based on geographic location or non-geographic criteria, such as membership in a group, or employment. In some states, efforts

Excerpt from Massachusetts legislation:

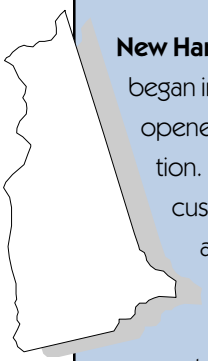
"Following adoption of aggregation through the votes specified above, such program shall allow any retail customer to opt-out and choose any supplier or provider such retail customer wishes.... Nothing in this section shall be construed as authorizing any city or town or any municipal retail load aggregator to restrict the ability of retail electric customers to obtain or receive service from any authorized provider thereof.

It shall be the duty of the aggregated entity to fully inform participating ratepayers in advance of automatic enrollment, that they are to be automatically enrolled and that they have the right to opt-out of the aggregated entity without penalty. In addition, such disclosure shall prominently state all charges to be made and shall include full disclosure of the standard offer rate, how to access it, and the fact that it is available to them without penalty."

Section 247, adding Section 134 to Chapter 164.



are underway to create non-profit entities which aggregate the sale of electricity and energy management services to residential or low-income residential customers. Aggregation in particular is often viewed as a way to stimulate creation of a competitive market for low-use customers who may not otherwise be the target of marketing efforts by energy suppliers.



New Hampshire's electric pilot program began in April 1997, when the state PUC opened 3% of the state to competition. Half of the participating customers were picked by lottery and half participated by virtue of their location. Called "Geographic Areas of Choice," certain municipalities were chosen as targets for competition. These municipalities were allowed to determine how suppliers would be selected and how residents would be recruited to participate. When Peterborough, N.H., solicited proposals, 13 energy suppliers responded. Four public hearings were held. Once the supplier was selected, each citizen had to affirmatively choose to receive electricity from the winning bidder. Out of 5,000 residents, 1,400 actually participated. The resulting two-year, fixed-price contract was estimated to save participants 15-20% on their electric bill. The winning supplier also contributed $25,000 to the town's economic development fund.

Consumer Benefits From Aggregation

Both customers and power suppliers may benefit from aggregation:

- Low-use residential and small business customers may not benefit from direct access because their usage characteristics, coupled with a lack of advanced metering systems, may make them expensive to serve. Marketing costs to reach and consummate deals with these customers may exceed profit potential on electricity sales alone, unless the volume of sales is high. On the other hand, if a power supplier can negotiate one sale with an entity that represents a large group of customers with a similar energy profile, without incurring upfront marketing costs, lower prices may result.

- If Default Service is based on the market price or is priced below market rates by regulators, individual residential customers may not find energy any cheaper in the marketplace. However, an aggregator may be able to offer other valuable services and products, such as energy management or even telephone service, in a package deal that is desirable to customers.

- Aggregation may improve the market power of residential and small business customers. The aggregator that can deliver a significant energy load can bargain for a lower price

and enhanced energy management services on behalf of group members.

- Aggregation may also be an important tool to achieve a state's Universal Service goals. In general, low-income customers use less energy than other residential customers. Furthermore, while most low-income customers do pay their bill, a high percentage of low-income customers cannot pay their electricity or gas bill in a timely manner because of its significant impact on household income (over 20% for some customers with higher-use and very low household income). Therefore, it is likely that low-income customers may need more customer service support, or carry a high risk of bad debt expense. Whether low-income customers should be the focus of aggregation efforts or whether they are better off in general as part of the residential class is a hotly debated topic among customer advocates. However, there is little debate about the notion that if suppliers do not market to residential customers in general, low-income customers will most likely be ignored.

Barriers to Effective Aggregation

Advocates have sought to remedy several potential barriers to aggregation in state electric restructuring legislation. Should customers be required to "opt in" to be bound to a contract for the sale of electricity negotiated by a group or organization? Or should customers be presumed to be bound and have the option to "opt out"? In other words, should a customer be bound to a contract with the aggregator in the same way that a customer can be bound in a contractual relationship with a direct access supplier? Proponents of aggregation argue that for benefits to be realized, membership in the group should signify that customers approve the group's power supplier; cost savings, due to economies of scale, may then, in fact, be realized.

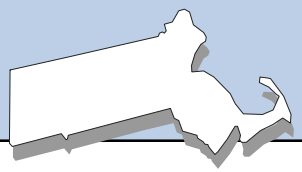
Membership rights and responsibilities may affect supplier bids; suppliers may not bid on a group contract if the number of ultimate customers is unknown. However, aggregation proponents note that the "opt out" approach has not been successful in most states. Only Massachusetts has adopted legislation which allows a municipality, after a detailed public process, to presume that their residents' power supplier will be switched to the town's selection unless the customer opts out of the program. California's legislation specifically requires individuals to opt in to an aggregation plan, including one proposed by their local municipality.[50] No state legislation

has allowed a private aggregator to group customers without specific affirmative approval from each customer in the group. This means that, for example, if the American Association of Retired Persons (AARP) seeks to aggregate customers in a state, the members who want to approve AARP's plan must *positively* approve it; membership alone will not suffice to presume supplier choice.

A second potential barrier to the use of aggregation, especially applicable in the municipal context, is the process a town must follow to solicit proposals and select a winning bidder. It is likely that in most states, a municipality will need legal authorization to initiate this type of activity. At the very least, the selection process requires public presentation of final bid offers, public meetings or hearings, and public comment and review of the town's proposed selection.

Municipalities and quasi-governmental agencies need to establish a framework within which an aggregation program is designed. This may present a third barrier. For example, Massachusetts requires that a municipality first devise an energy plan and establish criteria for selection of a power supplier. The state has also legislated minimum requirements for any municipal solicitation for power supply, which is designed to assure customer service and consumer protection provisions are not compromised for lower prices. A town may select a supplier on the basis of criteria that includes, but does not rely entirely on, price. This allows a municipality to choose a supplier that furthers environmental and energy efficiency goals, as well as price competitiveness. The town's plan and contract requirements may also be subject to approval by the state, which may impose additional requirements on the solicitation process.

Massachusetts legislation allows a town to run its own energy efficiency programs with a Systems Benefit Charge (up to 3 mills per kWh) and to directly invest (up to 1 mill per kWh) renewable energy funds in its own community.



In most states a private aggregator, doing business as an individual or an organization, must obtain a license to sell electricity and agree to comply with all appropriate state regulations. In other words, such issues as price and contract term disclosures, collection remedies, bill format, and other consumer protection procedures will also be applicable to contracts negotiated by aggregators. However, some state licensing requirements distinguish between suppliers and aggregators or brokers who do not take title to electricity. Such distinctions may impact requirements for bonding and other financial securitization. Substantial bonding requirements may act as a barrier for small non-profit groups attempting to provide aggregation services on behalf of its members.

The Consumer Electric Cooperative (CEC) proposes to deliver important services to low-income households, including

- aggregating the market power of low-income customers into larger groups for the purpose of negotiating better prices;
- delivering energy efficiency programs to reduce total bills; and
- pursuing bill minimization policies, such as switching customers from electric space heat to a less expensive fuel source.

Consumer Energy Cooperatives

Energy advocates in Vermont are designing a full-service consumer-owned energy cooperative whose mission is to lower members' energy bills by combining competitive energy pricing with comprehensive energy services. Its proponents differentiate their strategy from competitive energy suppliers as described below.

Most retail competitors are expected to offer primarily a single energy source and compete primarily on the basis of price. By contrast, the cooperative will feature value-added services designed to lower members' total energy bills. Bill savings will be achieved through competitive purchasing of energy and aggressive delivery of comprehensive energy-efficiency measures addressing all energy sources. The Consumer Energy Cooperative (CEC) will also lower bills by helping customers select the most cost-effective mix of energy sources for their individual energy service needs. CEC will offer its members the convenience of a single bill for all energy services.[51]

While the CEC states that it will target low-income customers with specific services that meet their needs, it will not focus exclusively on these customers, but seek a broad-based membership among residential customers. The CEC will seek to aggregate low-income customers through partnerships with existing community-based networks.

A Note on the "Muni-Lite" Concept

Some municipal aggregation models closely resemble municipal power districts or rural electric cooperatives. However, there is a significant difference. Unlike traditional municipal utilities or cooperatives, a municipal aggregator does not seek to own or control the local distribution system; the poles and wires remain the property of the local distribution utility. But what if a town seeks to gain access to the wholesale market on behalf of its residents and compete with the local utility without any changes to the state's electric power laws? This is what Palm Springs, California, sought to do in 1996. The City of Palm Springs applied to the Federal

Energy Regulatory Commission (FERC) for approval to purchase wholesale power, which would then be transported to customers by the local utility, Southern California Edison (SoCal Edison). SoCal Edison opposed the proposal, arguing that residents were attempting to avoid paying state-approved retail rates which included costs not reflected in the wholesale market price. In August 1996, FERC denied Palm Springs' claim and stated that its attempt to establish ownership of the distribution system by purchasing duplicate meters was not enough to trigger its access to the wholesale market.

As a result of this ruling, it is now likely that municipalities cannot obtain access to the wholesale market and escape their current franchise utility unless the state restructures its retail service or moves to create a new municipal utility with all the rights and duties of such an entity. This latter option would then require the municipality to contract with the local utility for use of the distribution system already in place, or seek to obtain such property from the utility by eminent domain and pay its fair market value.

CHAPTER V

THE NEW CONSUMER PROTECTION ROLE:

Jurisdictional And Enforcement Implications

This *Blueprint* highlights the policy implications of new relationships between consumers and their electric supplier and between retail suppliers and regulators. If the regulatory approach for public utilities has historically been dominated by a traditional model of total price and entry controls, the new regulatory model will rely instead on consumer protection and lower barriers to entry for new firms with little or no price regulation. Instead of monopoly power, with its focus on prices and rate design, the new competitive market structure will likely be accused of fostering "unfair" competition, caused by inadequate access to information by buyers and unequal bargaining power between buyers and sellers. These are crucial defects for a commodity widely regarded as a necessity.

If states are to transform their approach to a truly competitive market, they must acquire new tools for working effectively with the electric industry, and make innovative use of old ones. Examples of new tools include

- setting licensing criteria as a screening function to reinforce standards or norms defined in regulations;
- educating customers to participate in the competitive market based on informed choice;
- responding quickly to unfair and deceptive marketing and advertising practices;
- policing standards of conduct between holding companies and affiliates to assure the development of a competitive market structure; and
- umpiring disputes between competitors and between customers and their suppliers.

Jurisdiction of the State Utility Commission

The degree to which an existing state public utility commission will have jurisdiction over non-traditional suppliers of electricity, i.e., retail electric suppliers, will be decided by state legislation. Jurisdictional areas that might be addressed include

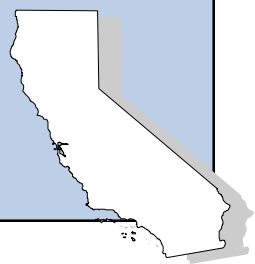
- licensing;
- disclosure requirements for advertising, terms of service contracts, and monthly bills;
- contract terms;
- prevention of unfair trade and marketing practices;

- authority to resolve customer disputes;
- the interaction of retail sales affiliates with parent utility holding companies or distribution utilities; and
- establishment of minimum billing, credit and collection practices.

In some states, the utility commission may share its jurisdiction with the Attorney General's office. However, no state has enacted retail electric competition by relying entirely on state and federal Unfair Trade Practice Acts or their equivalent. Nevada's electric restructuring law includes a reorganization of its consumer protection and public advocacy functions by combining them in one division of the Attorney General's office, while at the same time granting concurrent jurisdiction to the public utility commission to license and regulate the conduct and contract terms of competitive suppliers.

Whether state public utility statutes already contain sufficient jurisdictional authority for the commission to regulate retail electric suppliers, as well as aggregators and brokers who do not take title to electricity, will require detailed state analysis. Some jurisdictional statutes for public utilities link the state authority with ownership or control of property in the state or require utilities to own generating facilities to qualify. These restrictions do not allow jurisdiction over aggregators, brokers, or marketers without additional legislation. In addition, legislative guidance is necessary to establish policies for regulation of retail suppliers and the manner in which regulation should be different from traditional price and entry regulation applied to utilities and future distribution companies.

California's original electric restructuring legislation (AB 1890) granted the PUC jurisdiction over competitive suppliers for registration and certain complaints, but deferred to other state agencies for key consumer protection oversight. In August, 1997, a comprehensive consumer protection bill applicable to suppliers expanded the PUC's jurisdiction and required significantly more oversight in registration criteria and regulation of contract terms and disclosures. *SB 477 (Stats. 1997, ch. 275).*

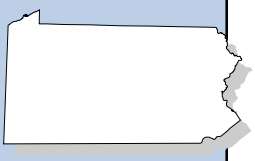


Because most states have assumed that some legislative changes will be required in any case to implement full retail competition, it will be important for such legislation to clarify the regulatory commission's role in licensing, monitoring, regulating, and enforcing minimum market standards of conduct on all major participants. Indeed, all state electric restructuring statutes enacted to date either assume or make clear commission jurisdiction over new market entrants for the purposes of registration or licensing and, at a minimum, consumer complaints.

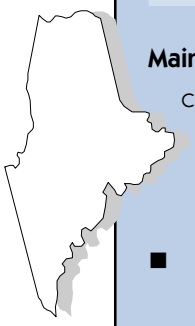
Recently enacted **Illinois** restructuring legislation created a separate unit within the Attorney General's office to handle consumer protection issues related to the electric industry. This action will concentrate resources and develop expertise that exists only at the utilities commission in other states.

The typical state approach to date has been to define "retail electric supplier" (or an equivalent term) to refer to those entities that will sell or offer to sell electricity to retail consumers. This definition of retail supplier includes the retail sales affiliates of traditional public utilities, newly formed entities which sell electricity from supplier-owned generation facilities located both in or out-of-state, as well as aggregators, marketers and brokers who market electricity from generation facilities which they do not directly own or operate. From the viewpoint of consumer protection, it will be important for a state to regulate any entity that seeks to promote or market the sale of electricity, whether or not the entity owns generation supplies. The term does not usually include entities which offer only to sell demand-side management or energy efficiency services, or metering equipment, or other enhancements to the sale of electricity.

Each state must also decide how the new competitive market will apply to publicly-owned utilities, such as municipal or rural electric cooperatives. Commission jurisdiction over these entities differs from state to state. However, policymakers involved in this debate will want to consider that exempting publicly-owned electric companies from licensing and consumer protection requirements imposed on other retail electric suppliers will grant them a more favorable market position. If publicly-owned electric departments or cooperatives seek to enter the competitive market to sell electricity to the general public, it seems reasonable to include



The **Pennsylvania** *Customer Choice Act, Section 2803* defines "electric generation supplier or electricity supplier" as "a person or corporation, including municipal corporations, which chooses to provide service outside their municipal limits except to the extent provided prior to the effective date of this chapter; brokers and marketers, aggregators or any other entities, that sell... electricity or related services, utilizing the jurisdictional, transmission, or distribution facilities; or an electric distribution company that purchases, brokers, arranges or markets electricity or related services for sale to end-use customers, utilizing the jurisdictional, transmission and distribution facilities of an electric distribution company."



Maine's electric restructuring legislation clarifies the Public Utilities Commission's jurisdiction over retail electric suppliers to include

- licensing, including renewal and revocation;
- informational filings; public information disclosures;
- standard consumer protection provisions;
- penalties of up to $5,000 for each violation;
- dispute resolution;
- cease and desist orders;
- restitution; and
- court enforcement by the PUC directly or through the Attorney General.

them in the same overarching consumer protections adopted by the state for other competitive suppliers.

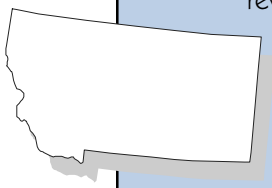
Access to Books and Records; Enforcement Tools

In addition to clarifying commission jurisdiction over competitive suppliers, state legislation may also need to make clear the extent of a commission's ability to obtain access to a supplier's books and records. As a practical matter, a commission is unlikely to conduct routine audits, but legislation should address regulatory authority to conduct investigations upon reasonable cause and to obtain access to books and records for enforcement purposes.

Furthermore, if a commission does not already have the authority to order restitution to affected consumers or levy fines or penalties, such authority should be considered as part of state restructuring legislation. While a commission without such authority may have wielded its regulatory powers via rate cases and other certification procedures required for traditional public utilities (such as providing a lower rate of return in response to inefficient management or poor service quality), these rate case tools will not be available to change the behavior of errant retail suppliers in a competitive market.

If a commission does not obtain authority to order restitution or fines, it will most likely be unable to respond promptly and forcefully to an emerging pattern of fraud or violation of consumer protection rules, and may be forced to make use of its license revocation authority when a lesser penalty might be more appropriate. For example, under current statutory authority, the New Jersey Board of Public Utilities may only seek a fine of up to $500 per violation against public utilities. While this may even be inadequate for enforcement against public utilities, the existence of ratemaking treatment amelio-

Montana's electric restructuring legislation specifies that the Commission may revoke or suspend the license of an electricity supplier, impose a penalty, or both, "for just cause on the commission's own investigation or upon the complaint of an affected party if it is established that the supplier



- intentionally provided false information to the commission;
- switched, or caused to be switched, the electricity supply for a customer without first obtaining the customer's written permission;
- failed to provide a reasonably adequate supply of electricity to its customers in Montana; or
- committed fraud or engaged in deceptive practices."

Fines are set at the range of $100 to $1,000 per day for each violation.

rates this defect to some extent. Without such rate case tools, this small penalty would probably be inadequate to prevent widespread abuse of consumer protection rules by competitive suppliers who are not subject to price regulation.

The Role of the Consumer Advocate

In most states, residential consumers are represented before the public utilities commission by independent legal consumer advocates. While commissions themselves are re-thinking their new regulatory roles, so are consumer advocates. State consumer advocates are often housed in the Attorney General's office or as part of the Executive Branch. Should the consumer advocate be given authority to participate in any commission rulemaking, licensing, or other policy decision with respect to supervision of retail electric suppliers? Should consumer complaints that find their way to the public advocate be coordinated with the utility commission or the Attorney General? States that have adopted legislation to date provide a continuing significant role for the consumer advocate with authority to participate in commission proceedings during the transition to competition.

Public advocates are also exploring new roles as participants in statewide consumer education programs and have, in some states, taken a lead role in coordinating the exploration of innovative aggregation options for residential customers. Several consumer advocates have sought increased legislative appropriations to pay for intensive participation in key proceedings and customer outreach efforts that need to be quickly accomplished in preparation for retail competition. Furthermore, most consumer advocates expect to play an

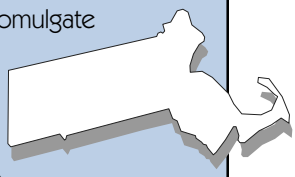
important role in monitoring commission compliance with statutory directives in a competitive marketplace, to use their authority to appeal commission decisions before the courts, and to seek customer restitution for violations.

The Role of the State Energy Office

For states with a strong energy office, such as **Massachusetts** and **California**, electric restructuring legislation imposes important new authority with respect to energy efficiency, environmental disclosures associated with energy sales, and renewable energy development. In those two states, as in others, the state energy offices took a lead role in policy discussions leading to adoption of electric restructuring legislation. The Massachusetts Department of Energy Resources (DOER) proposed a complete plan to achieve customer choice in that state and submitted it to the Department of Public Utilities and to the State Legislature. The DOER and the Attorney General (within which the public advocate resides) then took the lead role in negotiating settlements with major utilities that ultimately formed the basis for many policies adopted by the State Legislature.

Similarly, the California Energy Commission played a key role in design and implementation of environmental disclosures, and has responsibility for the State Trust Fund to support "the operation of existing, and the development of new and emerging, in-state renewable resource technologies.[52]

Massachusetts' electric restructuring legislation authorizes the Department of Energy Resources to promulgate rules that define minimum demand-side efficiency programs operated by distribution utilities. The funding level for such programs starts at 3.3 mills per kWh in 1998 and phases down to 2.5 mills in 2002, with a total of about $500 million. Included in this funding amount is a permanent set-aside of .25 mills for low-income energy efficiency programs. Funding for renewable energy averages 0.7 mills per kWh for the first five years (about $150 million), and 0.5 mills thereafter.



California's *Senate Bill 1305* requires that all retail suppliers selling electricity in California disclose their sources of electricity, using a format developed by the California Energy Commission. The bill also requires suppliers to report fuel type and fuel consumption information to system operators and make such information available to the Commission to verify their customer disclosures.

CONCLUSION

The move to retail electric competition in states across the country will be accompanied by the review and revision of many existing public policies and regulatory approaches associated with our 100-year old system of regulating electric service to all homes and businesses. This *Blueprint for Consumer Protection* has explored many issues associated with consumer protection and universal service. States that have already adopted retail electric competition legislation have provided excellent models. They have recognized that consumer protections are vital to political acceptance of electricity competition. As one commissioner stated at a recent National Association of Regulatory Utility Commissioners meeting, "The safest job in my commission is the consumer complaint specialist!"

ENDNOTES

[1]. K. Winneg, M. Herrmann, A. Levy and B. Roe, *Baseline Survey, Consumer Knowledge, Practices and Attitude: Electric Utility Deregulation and Consumer Choice,* National Council on Competition and the Electric Industry (NCCEI), Consumer Information Disclosure Project, January, 1998. This and other NCCEI research can be obtained from their website: http://eetd.lbl.gov/NationalCouncil/ and at the Regulatory Assistance Project (RAP) website: http://www.rapmaine.org.

[2]. Baxter, Lester, *Low-Income Energy Policy in a Restructured Electricity Industry: An Assessment of Federal Options*, Oak Ridge National Laboratory, U.S. Department of Energy, ORNL/CON-443, July, 1997, Figure 1 at 6. Low-income households have a higher energy burden; that is, they spend 10% or more, over 20% in many cases, of their household income on energy compared to households with average income.

[3].Schachter, Deborah, "Public Outreach and Education in Electric Utility Restructuring," in Alexander, Barbara, *Consumer Protection Proposals for Retail Electric Competition: Model Legislation and Regulations*, Regulatory Assistance Project, Gardiner, Maine, October, 1996. Ms. Schachter's paper summarized the results of a study of California's Caller ID Education Program by Dr. Brenda Devlin of Ohio State University for the California PUC, and preliminary results of the New Hampshire Electric Pilot Program. These materials are also available at the RAP website.

[4]. In the *Fair Packaging and Labeling Act*, Congress declared that, "Informed consumers are essential to the fair and efficient functioning of a free market economy. Packages and their labels should enable consumers to obtain accurate information as to the quantity of the contents and should facilitate value comparisons." 15 U.S.C. §1451.

[5]. A reasonable consumer disclosure policy can overcome potential legal hurdles. This footnote summarizes a legal memo by Michael Stoddard of Conservation Law Foundation (May 20, 1997), which summary also appeared in Oppenheim and Alexander, *Model Electricity Consumer Protection Disclosures*, NCCEI, January, 1998; also available at the RAP website.

Commercial speech is that which is solely related to the economic interests of speaker and audience. It may be constitutionally regulated if it is misleading, unlawful (*e.g.*, promoting an unlawful service), or where the government has a substantial interest (such as consumer protection) that is directly advanced by the regulation and the regulation is narrowly tailored to the objective. Disclosures have been held to be a direct and narrowly tailored means of achieving consumer protection, although a demonstration that it is reasonable to expect deception may be required. Zauderer v. Office of Disciplinary Counsel, 471 U.S. 626, 105 S. Ct. 2265, 2282, 85 L.Ed.2d 652 (1985), quoting In re R.M.J., 455 U.S. 191, 201, 102 S.Ct. 929, 936, 71 L.Ed.2d 64 (1982). Lack of standardization in the marketplace and public lack of knowledge are among the standards used in such an inquiry.

States may also regulate interstate commerce to further a legitimate state interest, such as protecting consumers and preventing deception or unfair competition. Such state regulation must not, on its face or in practice, discriminate against out-of-state products and services, and may not impose a burden on interstate commerce that is out of proportion to the state interest.

[6]. Alexander, Barbara, *The Transition to Local Telecommunications Competition: A New Challenge for Consumer Protection*, Public Counsel Section, Washington Attorney General, October, 1997. Available at http://wa.gov/ago/utility/alexander.html.

[7]. New Hampshire survey results are available from the New Hampshire PUC website: http://www.state.nh.us/puc; The national focus group research is summarized in Holt, Edward, *Information Consumers Want in Electricity Choice: Summary of Focus Group Research*, NCCEI, December, 1997.

[8]. T. Austin et al., *Uniform Consumer Disclosure Standards for New England: Report and Recommendations to the New England Utility Regulatory Commissions*, NCCEI, October, 1998.

[9]. *Truth in Lending Act*, 15 U.S.C. §1601, et seq. and its implementing Regulation Z, 12 C.F.R. Section 226. For example, for variable rate credit applications and solicitations, creditors must disclose the fact that the rate may vary and state how the rate will be determined, including identifying the index or formula and any margin or spread added to the index or formula. For introductory "teaser" rates that are temporary, the creditor must also disclose the annual percentage rate that will apply after the introductory rate expires. Special rules also govern the accuracy and currency of disclosed rates. See, e.g., 12 C.F.R. 226.5a(b)(1). Variable rate mortgages must disclose how the interest rate would change based on the prior 15-year history of the index used to trigger rate changes.

[10]. Both the previously cited New Hampshire survey and the NCCEI Report summarizing national focus group research have confirmed this desire for information on supply mix.

[11]. California Senate Bill 1305 (enacted October 8, 1997) requires all retail suppliers selling electricity in California to disclose the sources of electricity they sell, using a format developed by the California Energy Commission.

[12]. Investigation by the Massachusetts Department of Telecommunications and Energy upon its own motion, commencing a Notice of Inquiry/Rulemaking, pursuant to 220 C.M.R. §§ 2.00 et seq., establishing the procedures to be followed in electric industry restructuring by electric companies subject to G.L.C. 164, Docket 96-100 (February, 1998). Attachments B-1–B-4 contain sample labels.

[13]. The Truth in Lending disclosure requirements are not limited to printed materials, but the New England collaborative has recognized the difficulty of presenting information provided on the Electricity Label in an oral format.

[14]. FERC has adopted several criteria to assist in the determination of the boundary between state distribution jurisdiction and FERC transmission jurisdiction in its seminal decision on wholesale competition, Federal Energy Regulatory Commission, Order No. 888, Final Rule issued on April 24, 1996 (Docket Nos. RM95-8-000, *Promoting Wholesale Competition Through Open Access Nondiscriminatory Transmission Services by Public Utilities,* and RM94-7-001, *Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*).

[15]. The distribution system is the source of the vast majority of customer outages. Power reliability related to the long distance transmission system may be the subject of additional federal legislation.

[16]. Davis, Vivian, et al., *Telecommunications Service Quality,* National Regulatory Research Institute, Columbus, Ohio, March, 1996.

[17]. This section draws heavily on Alexander, Barbara, "How to Construct a Service Quality Index in Performance-Based Ratemaking Plans, *The Electricity Journal*, April, 1996. Additional materials on this topic may be found in a recent NARUC publication, "*Performance-Based Ratemaking Regulation in a Restructured Electric Industry,*" particularly the chapters on Quality of Service and Universal Service Indices (NARUC, Washington, D.C., 1998), available from the NARUC website: http://www.naruc.org.

[18]. Baxter, Lester, Op. cit. at 6. Even considering benefits under most common low-income programs, low-income households must allocate over 20% of their monthly budget to retain energy services in some states. Furthermore, targeted energy assistance funds, such as the Low-income Home Energy Assistance Program (LIHEAP) and DOE's Weatherization Assistance Program (WAP) have suffered significant program cuts in recent years.

[19]. In Massachusetts, for example, the largest electric utility, the New England Electric System (NEES), supports the continuation of low-income rate discounts as part of their support for electric restructuring. In Maine, the Industry Energy Consumer Group, representing the largest industrial customers, has supported the continuation of funding for low-income programs through the distribution service rate as a condition of the move to retail electric competition, albeit as part of a package of proposals negotiated with consumer and low-income advocates.

[20]. Maine PUC, *Inquiry Regarding Possible Low-income Assistance Legislation*, Docket No. 97-582, October 7, 1997.

[21]. California PUC, *Interim Opinion on Public Purpose Programs—Threshold Issues*, Decision 97-02-014, February 5, 1997.

[22]. Pennsylvania PUC, *Final Order Re: Guidelines for Universal Service and Energy Conservation Programs*, Docket No. M-00960890F0010, July 11, 1997.

[23]. The Pennsylvania PUC's recent Restructuring Orders for electric distribution companies have increased funding for both the rate payer assistance program (CAP) and the Low Income Usage Reduction Program (an energy management program) as follows:

PECO Energy: The Commission approved a settlement which calls for a $50 million universal service budget, of which $5.6 million is energy management.

PP&L: The CAP or rate assistance program was expanded from $2 million to $11.7 million; LIURP expanded from $4 million to $4.7 million with an added program targeted to baseload electricity usage.

West Penn Power: CAP expanded from $.9 million to $5.88 million; LIURP expanded from $.8 to $2.2 million.

Duquesne Light: CAP expanded from $.55 million to $5.3 million; LIURP expanded from $.7 million to $1.75 million.

Pennsylvania Electric Co. (**GPU Energy**): CAP expanded from $620,000 to $4.9 million over 4 years; LIURP expanded from $652,000 to $1.9 million.

Metropolitan Edison (**GPU Energy**): CAP expanded from $452,000 to $4.6 million over four years; LIURP expanded from $772,000 to $1.8 million.

[24]. Pennsylvania PUC, *PECO Energy Restructuring Order on Joint Petition for Full Settlement*, Docket No. R-973953, May 14, 1998.

[25].While electricity is not often used nationally as a primary heat source, most other forms of heat (fuel oil, natural gas) cannot operate without electricity to power their motors and exhaust fans.

[26]. RKM Applied Research, (Benchmark Research Summary presented to the N.H. Public Utilities Commission) *Residential Consumer and Small Business Study*, Portsmouth, N.H., October 15, 1997. Most residential and small business respondents had heard only a little (46%) or nothing at all (15%) about the introduction of competition in the electric industry. Fifty-five percent of the respondents said that they were unsure whether their monthly electric bill would increase or decrease under competition, but for those who stated their bill would likely decrease, the average customer thought their bill would decrease 17.6%, far higher than most observers estimate is likely to occur.

[27]. 15 U.S.C. §1691-1691f. The ECOA is implemented by Regulation B, 12 C.F.R. §202.

[28]. The Federal Reserve Board's Regulation B exempts public utilities from some specific provisions, such as those relating to the use of spousal credit history and spousal income, but even these exemptions are applicable only to public utilities whose rates are approved by a state regulatory agency. Reg. B, 12 C.F.R. §202.3(a).

[29]. Sheldon, Jonathan, *Credit Discrimination*, (National Consumer Law Center: Boston, 1993) at 59-60.

[30]. Regulation B explicitly incorporates the effects test as a basis for discriminatory conduct. Federal Reserve Board Official Staff Commentary, §202.6(a)-2.

[31]. 15 U.S.C.§§1681-1681u. There are no interpretive regulations, but the FTC has issued a Commentary, 16 C.F.R. Part 600, and Notices of Rights and Duties under the Fair Credit Reporting Act, 16 CFR Part 601.

[32]. 15 U.S.C.§§1601 et seq., Regulation Z, 12 C.F.R. Part 226.

[33]. 15 U.S.C. §45(a).

[34]. Delaware Code §2513(b); Louisiana-LSA-Rev. Stat. 51:1406(1); Maryland Code, Comm. Law, §13-104(2); Ohio Rev. Code §1346.10; West's Rev. Code Washington Ann. §19.86.170.

[35]. E.g., Maine, Massachusetts, Michigan, Rhode Island, South Carolina, cited in Alperin and Chase, *Consumer Law* (West Publishing Co., 1968), §114.

[36]. 15 U.S.C. §1692-1692o.

[37]. 15 U.S.C. §§6101-08, August 16, 1994.

[38]. 16 C.F.R. Part 310.

[39]. 16 C.F.R. Part 429.

[40]. This practice was started by telecommunications providers and copied by several energy suppliers in the New Hampshire and Pennsylvania retail competition pilot programs.

[41]. A.B. No. 1890, §366(e).

[42]. Chapter 164 of the Acts of 1997 (eff. November 25, 1997), Section 193.

[43]. *Connecticut Public Act No. 98-28*, eff. 4/29/98, §30.

[44]. See the NCCEI research cited in prior footnotes and available on their website.

[45].15 U.S.C. §45

[46]. See *Federal Trade Commission Policy Statement on Deception*, appended to Cliffdale Assocs., Inc.. 103 F.T.C.110, 174 (1984); *Federal Trade Commission Statement Regarding Advertising Substantiation*, appended to Thompson Medical Co., Inc., 104 F.T.C.648, 839 (1984); *Federal Trade Commission Unfairness Policy Statement*, appended to International Harvester Co., 104 F.T.C. 949 (1984).

[47]. 49 Fed. Reg. 30,999 (1984).

[48].The material terms of this contract will be disclosed in the *Terms of Service* brochure described in Chapter I and subject to the basic consumer protection provisions discussed in Chapter III.

[49]. The state's creation of a Default or Standard Offer, as discussed in Chapter II, is a form of aggregation for those customers who do not choose a supplier; this Chapter, however, focuses on customers who positively select an aggregator or power broker to obtain energy on their behalf.

[50]. This issue is closely related to the state's policy concerning how a customer provides authorization to select or change his or her electric supplier. At the very least, a customer's authorization to select an aggregator as the supplier, thus authorizing the aggregator to obtain electricity on the customer's behalf, should not be more difficult or require additional procedural hurdles, compared to customer selection of a supplier under direct access.

[51]. *Prospectus (DRAFT), Community Energy Cooperative*, Prepared by the Community Energy Cooperative Development Team, February 21, 1997, at 1.

[52]. AB 1890, §381, August 31, 1996.

APPENDIX A

A SHORT PRIMER ON RETAIL ELECTRIC RESTRUCTURING

Since the turn of the century, electric utilities have been viewed as "natural monopolies." Because of the tremendous costs involved in building power plants and transmission lines, electric utilities were assumed to provide a service that only one entity in a given area could deliver efficiently. Utilities were granted exclusive franchises in exchange for submitting to regulation, the purpose of which was, and has continued to be, to assure adequate service at reasonable cost. This traditional picture is changing and this vertically-integrated industry (production/generation, transmission, delivery and sale to retail customers) is being broken into pieces or "unbundled." Increased competition is coming to the electric industry, due to the interaction of five key factors:

- **New technologies in energy production, conservation and information systems are creating opportunities for more efficient production, delivery and consumption of electricity.** The most important development in this area has been rapid price reductions associated with the construction of new natural gas-fired turbine and combined cycle plants. This has meant that electricity can be generated at lower cost than at many older and more expensive power plants.

- **Federal laws have been changed to encourage new entrants in electricity generation and to create a competitive wholesale transmission market.** The Public Utility Regulatory Policies Act (PURPA) of 1978 requires utilities to buy power from independent power producers; this law initiated the growth of electricity generation outside the vertically-integrated public utilities. The 1992 Energy Policy Act (EPAct) authorized the Federal Energy Regulatory Commission (FERC) to order transmission-owning utilities to provide transmission service to any buyer or seller of wholesale electricity. Under this authority, FERC has issued a series of decisions designed to create a wholesale market in the sale of electricity.

- **New players are seeking to enter the industry at all levels: wholesale and retail sales, generation, transmission ownership, merchant and aggregation functions, and conservation services.** As these new players see opportunities for competition, they will create a significant political and economic force for change.

- **Industrial customers are insisting on lower rates and higher efficiencies from their utility suppliers, that has led the way in most states for development of a retail market.** These proponents of competition point to the positive benefits from

increased competition in the airline, gas, trucking and telecommunications industries as a rationale for initiating electricity competition. Industrial customers are skilled and sophisticated; they understand the potential advantage in bargaining for their electricity needs in the open market.

- **Electricity production accounts for over 50% of key air pollution emissions, focusing attention on the industry.** Policymakers and consumer advocates are looking for the most efficient way to assign risks and costs to the production and use of electricity. The current regulatory structure provides an inherent incentive for electric utilities to increase their sales of kilowatt-hours because most state ratemaking policies encourage utilities to increase their profits by selling more electrons. Such regulatory imperatives, in turn, result in higher air emissions than might otherwise occur in a competitive market, as well as increased air pollution from older power plants which are required to comply with the more stringent emission standards of newer plants.

The call for increased competition in the electric industry has coincided with a push toward privatization in many other countries and with a political desire to decrease our reliance on regulation in favor of more competition in many industries. In the telecommunications industry, for example, Congress enacted the Telecommunications Act of 1996 which, among other requirements: (1) calls for competition in the local provision of telephone service; (2) opens up the previously separated cable and long distance telephone companies to competition from each other; and (3) replaces a long history of state and federal price regulation with calls for market fairness and consumer protection. The push for retail competition in the electric industry has not been far behind.

Twelve state legislatures have already mandated retail competition in their states with implementation dates that vary from 1998-2006 (See Appendix B). Almost every other state has initiated proceedings to examine whether retail competition is either an inevitable or desirable result. In addition, several federal legislative proposals that mandate retail competition are slated for serious attention in the near future.

Proponents of these changes emphasize that lower costs typically result from competitive, as opposed to regulated, markets. They theorize that allowing competition in at least the generation portion of the business will result in lower prices than under the traditional monopoly regulation approach. While it is undeniable that retail competition will create an opportunity for some customers to negotiate for lower prices, consumer advocates question whether this benefit will flow automatically to lower-use residential and small commercial customers in general or low-income customers in particular. These observers point to the airline industry in which

prices have, in fact, dropped for customers who can travel at certain times but significantly increased for business customers traveling at peak days or times. This has come at a cost of reduced service and higher fares for small cities across America. Consumer advocates also point to the recently deregulated telecommunications industry where competition for basic exchange service has appeared in large cities and for large volume users, but not for rural or most residential customers.

As a result of these concerns, the debate about electric competition in many states has included an extensive analysis of the public benefits associated with traditional regulatory structures and efforts to either address those benefits directly in the new industry structure or transfer them to the new competitive retail market. These public benefits include

- conservation and demand-side management initiatives mandated by state policy makers;
- universal service and low-income programs;
- utility-sponsored research and development;
- consumer protection policies and programs associated with the sale of electricity to residential and small commercial customers; and
- support for renewable energy and environmentally beneficial energy sources as embodied in PURPA and least cost planning policies.

Overarching this debate about competing public policies and whether to protect or abandon them is the controversy surrounding "stranded costs." These costs dwarf those associated with public policy initiatives and may determine whether most customers see any reduction in prices as a result of the move to competition. Stranded costs represent the capital invested by utilities in power plants and power-purchasing contracts that will not be profitable in a competitive market. The difference between what the utilities invested in these plants and contracts and what they are worth on the open market in the next several years is the "stranded" portion of these costs. Utilities want to be reimbursed for these costs as part of the transition to competition. They argue that their shareholders had every reason to expect these costs to be recovered because they were incurred with the knowledge and blessing of state and federal regulators.

Opponents argue that the change to competition will produce winners and losers and that utility shareholders must share in the pain. Some states, like California, Maine, and Massachusetts, are allowing utilities to recover most or all of their stranded costs, but they are requiring them to sell some or all of their power plants. This "divestiture" approach prevents the old monopolies from putting

their new competitors at a disadvantage, because, as continuing owners of the transmission and distribution system, they might give their own power plants special treatment. Divestiture is particularly important because of the increasing number of mergers among utilities in the last several years, which have set the stage for a potential reduction in competition in some regional electricity markets.

Readers interested in a more detailed discussion of the economic and public policy issues associated with the move to retail electric competition may find additional information from the National Council on Competition and the Electric Industry (NCCEI), a joint project of state utility regulators, through the National Association of Regulatory Utility Commissioners (NARUC), legislators, through the National Conference of State Legislatures (NCSL), and energy officials, through the National Association of State Energy Officials (NASEO). The National Council's website includes links to their publications **http://eetd.lbl.gov/nationalcouncil/.**

APPENDIX B

EXCERPTS FROM STATE ELECTRIC RESTRUCTURING LEGISLATION

AGGREGATION

California Senate Bill 477 (Stats. 1997, ch. 275).

Section 366 is added to the Public Utilities Code to read:

366. (a) The commission shall take actions as needed to facilitate direct transactions between electricity suppliers and end use customers. Customers shall be entitled to aggregate their electric loads on a voluntary basis, provided that each customer does so by a positive written declaration. If no positive declaration is made by a customer, that customer shall continue to be served by the existing electrical corporation or its successor in interest.

(b) Aggregation of customer electrical load shall be authorized by the commission for all customer classes, including, but not limited to small commercial or residential customers. Aggregation may be accomplished by private market aggregators, cities, counties, special districts or on any other basis made available by market opportunities and agreeable by positive written declaration by individual consumers.

(c) If a public agency seeks to serve as a community aggregator on behalf of residential customers, it shall be obligated to offer the opportunity to purchase electricity to all residential customers within its jurisdiction.

Massachusetts: Chapter 164 of the Acts of 1997, eff. November 25, 1997.

Section 134. (a) Any municipality or any group of municipalities acting together within the commonwealth is hereby authorized to aggregate the electrical load of interested electricity consumers within its boundaries; provided, however, that such municipality or group of municipalities shall not aggregate electrical load if such are served by an existing municipal lighting plant. Such municipality or group of municipalities may group retail electricity customers to solicit bids, broker, and contract for electric power and energy services for such customers. Such municipality or group of municipalities may enter into agreements for services to facilitate the sale and purchase of electric energy and other related services. Such service agreements may be entered into by a single city, town, county, or by a group of cities, towns, or counties.

A municipality or group of municipalities which aggregates its electrical load and operates pursuant to the provisions of this Section shall not be considered a utility engaging in the wholesale purchase and resale of electric power. Providing electric power or energy services to aggregated customers within a municipality or group of municipalities shall not be considered a wholesale utility transaction. The provision of aggregated electric power and energy services as authorized by this Section shall be regulated by any applicable laws or regulations which govern aggregated electric power and energy services in competitive markets.

A town may initiate a process to aggregate electrical load upon authorization by a majority vote of town meeting or town council. A city may initiate a process to authorize aggregation by a majority vote of the city council, with the approval of the mayor, or the city manager in a Plan D or Plan E city. Two or more municipalities may as a group initiate a process jointly to authorize aggregation by a majority vote of each particular municipality as herein required.

Upon an affirmative vote to initiate said process, a municipality or group of municipalities establishing load aggregation pursuant to this Section shall, in consultation with the division of energy resources, pursuant to Section 6 of Chapter 25A, develop a plan, for review by its citizens, detailing the process and consequences of aggregation. Any municipal load aggregation plan established pursuant to this Section shall provide for universal access, reliability, and equitable treatment of all classes of customers and shall meet any requirements established by law or the department concerning aggregated service. Said plan shall be filed with the department, for its final review and approval, and shall include, without limitation, an organizational structure of the program, its operations, and its funding; rate setting and other costs to participants; the methods for entering and terminating agreements with other entities; the rights and responsibilities of program participants; and termination of the program. Prior to its decision, the department shall conduct a public hearing. The department shall not approve any such plan if the price for energy would initially exceed the price of the standard offer, as established pursuant to Section 1B of this chapter, for such citizens in the municipality or group of municipalities, unless the applicant can demonstrate that the price for energy under the aggregation plan will be lower than the standard offer in the subsequent years or the applicant can demonstrate that such excess price is due to the purchase of renewable energy as described by the Division of Energy Resources pursuant to Chapter 25A.

Participation by any retail customer in a municipal or group aggregation program shall be voluntary. If such aggregated entity is not fully operational on the retail access date, any ratepayer to be automatically enrolled therein shall receive standard offer service unless affirmatively electing not to do so. Within 30 days of the date the aggregated entity is fully operational, such ratepayers shall be transferred to the aggregated entity according to an opt-out provision herein. Following adoption of aggregation through the votes specified above, such program shall allow any retail customer to opt-out and choose any supplier or provider such retail customer wishes. Once enrolled in the aggregated entity, any ratepayer choosing to opt-out within 180 days shall do so without penalty and shall be entitled to receive standard offer service as if he was originally enrolled therein. Nothing in this Section shall be construed as authorizing any city or town or any municipal retail load aggregator to restrict the ability of retail electric customers to obtain or receive service from any authorized provider thereof.

It shall be the duty of the aggregated entity to fully inform participating ratepayers in advance of automatic enrollment that they are to be automatically enrolled and that they have the right to opt-out of the aggregated entity without penalty. In addition, such disclosure shall prominently state all charges to be made and shall include full disclosure of the standard offer rate, how to access it, and the fact that it is available to them without penalty. The Division of Energy Resources shall furnish, without charge, to any citizen a list of all other supply options available to them in a meaningful format that shall enable comparison of price and product.

(b) A municipality or group of municipalities establishing a load aggregation program pursuant

to Subsection (a) may, by a vote of its town meeting or legislative body, whichever is applicable, adopt an energy plan which shall define the manner in which the municipality or municipalities may implement demand side management programs and renewable energy programs that are consistent with any state energy conservation goals developed pursuant to Chapter 25A or Chapter 164. After adoption of the energy plan by such town meeting or other legislative body, the city or town clerk shall submit the plan to the department to certify that it is consistent with any such state energy conservation goals. If the plan is certified by the department, the municipality or group of municipalities may apply to the Massachusetts Technology Park Corporation for monies from the Massachusetts Renewable Energy Trust Fund, established pursuant to Subsection (a) of Chapter 40J, and receive, and if approved, expend moneys from the demand side management system benefit charges or line charges in an amount not to exceed that contributed by retail customers within said municipality or group municipalities. This will not prevent said municipality or municipalities from applying to the Massachusetts Technology Park Corporation for additional funds. If the department determines that the energy plan is not consistent with any such state-wide goals, it shall inform the municipality or group of municipalities within six months by written notice the reasons why it is not consistent with any such state-wide goals. The municipality or group of municipalities may re-apply at anytime with an amended version of the energy plan.

The municipality or group of municipalities shall not be prohibited from proposing for certification an energy plan which is more specific, detailed, or comprehensive or which covers additional subject areas than any such state-wide conservation goals. This subsection shall not prohibit a municipality or group of municipalities from considering, adopting, enforcing, or in any other way administering an energy plan which does not comply with any such state-wide conservation goals so long as it does not violate the laws of the commonwealth.

The municipality or group of municipalities shall, within two years of approval of its plan or such further time as the department may allow, provide written notice to the department that its plan is implemented. The department may revoke certification of the energy plan if the municipality or group of municipalities fails to substantially implement the plan or if it is determined by independent audit that the funds were misspent within the time allowed under this subsection.

CONSUMER PROTECTION POLICIES

California Senate Bill 477 (Stats. 1997, ch. 275).

Sec. 391: The Legislature finds and declares all of the following:

(a) Electricity is essential to the health, safety, and economic well-being of all California consumers.

(b) The restructuring of the electricity industry will create a new electricity market with new marketers and sellers offering new goods and services, many of which may not be readily evaluated by the average consumer.

(c) It is important that these customers be protected from unfair marketing practices and that market participants demonstrate their creditworthiness and technical expertise in order to engage in power sales to these members of the public.

(d) Larger commercial and industrial customers are sophisticated energy consumers that have adequate civil remedies and are adequately protected by existing commercial law, as demonstrated by the absence of significant amounts of contract litigation between commercial and industrial natural gas users and natural gas marketers in California.

(e) It is important to create a market structure that will not unduly burden new entrants into the competitive electric market, or California may not receive the full benefits of reduced electricity costs through competition.

(f) It is appropriate to create a system of registration and consumer protection for the electric industry, designed to ensure sufficient protection for residential and small commercial consumers while simplifying entry into the market for responsible entities serving larger, more sophisticated customers.

(g) It is the intent of the Legislature that:

(1) Electricity consumers be provided with sufficient and reliable information to be able to compare and select among products and services provided in the electricity market.

(2) Consumers be provided with mechanisms to protect themselves from marketing practices that are unfair or abusive.

(3) Pursuant to the authority granted to the commission in this part as to registration and consumer protection matters, the commission shall balance the need to maximize competition by reducing barriers to entry into the small retail electricity procurement market with the need to protect small consumers against deceptive, unfair, or abusive business practices, or insolvency of the entity offering retail electric service.

CONSUMER EDUCATION

Maine: Public Law 1997, ch 316 (May 29, 1997)

Sec. 35A § 3214: Bill Unbundling; Consumer Education

1. Unbundled bills. Beginning January 1, 1999, electric utilities shall issue bills that state the current cost of electric capacity and energy separately from transmission and distribution charges and other charges for electric service. By January 31, 1998, each electric utility shall file with the commission a bill unbundling proposal. The commission shall complete its review of those proposals and adopt a rule establishing unbundled bill requirements by July 1, 1998. Rules adopted under this subsection are routine technical rules pursuant to Title 5, Chapter 375, subchapter II-A.

2. Consumer education advisory board; rules. The commission shall adopt rules implementing a consumer education program in compliance with this subsection.

A. The commission shall immediately organize a consumer education advisory board to investigate and recommend methods to educate the public about the

implementation of retail access and its impact on consumers. The commission shall ensure broad representation of residential, industrial and commercial electric consumers, public agencies and the electric industry on the advisory board. Members of the board shall serve without compensation.

B. In its recommendations, the advisory board shall address:

(1) The level of funding necessary for adequate educational efforts and the appropriate source of that funding;

(2) The aspects of retail access on which consumers need education;

(3) The most effective means of accomplishing the education of consumers;

(4) The appropriate entities to conduct the education effort; and

(5) Any other issue relevant to the education of consumers regarding the implementation of retail access and its impact on consumers.

C. The commission shall consider the recommendations of the advisory board when adopting rules to implement a consumer education program. Rules adopted under this subsection are major substantive rules pursuant to Title 5, Chapter 375, subchapter II-A. The commission shall provide these rules to the Legislature in accordance with Title 5, Chapter 375, subchapter II-A, no later than February 1, 1998.

Nevada: Assembly Bill 366, July 16, 1997.

Sec. 48

3. The commission, before the commencement of direct access to alternative sellers for an electric service, shall carry out an educational program for customers to:

(a) Inform customers of the changes in the provision of electric service, including, but not limited to, the availability of alternative sellers of electric service;

(b) Inform customers of the requirements relating to disclosures, explanations or sales information for sellers of competitive services; and

(c) Provide assistance to customers in understanding and using the information to make reasonably informed choices about which service to purchase and from whom to purchase it.

CONSUMER DISCLOSURES

California Senate Bill 477 (Stats. 1997, ch. 275).

Sec. 394.5

(a) Except for an electrical corporation as defined in Section 218, or a local publicly owned electric utility as defined in subdivision (d) of Section 9604 offering electrical service to residential and small commercial customers within its service territory, each entity offering electrical service to residential and small commercial customers shall, prior to the commencement of service, provide the potential customer with a written notice of the service describing the price, terms, and conditions of the service. The notices shall include all of the following:

(1) A clear description of the price, terms, and conditions of service, including:

(A) The price of electricity expressed in a format which makes it possible for residential and small commercial customers to compare and select among similar products and services on a standard basis. The commission shall adopt rules to implement this subdivision. The commission shall require disclosure of the total price of electricity on a cents-per-kilowatthour basis, including the costs of all electric services and charges regulated by the commission. The commission shall also require estimates of the total monthly bill for the electric service at varying consumption levels, including the costs of all electric services and charges regulated by the commission. In determining these rules, the commission may consider alternatives to the cent-per-kilowatthour disclosure if other information would provide the customer with sufficient information to compare among alternatives on a standard basis.

(B) Separate disclosure of all recurring and nonrecurring charges associated with the sale of electricity.

(C) If services other than electricity are offered, an itemization of the services and the charge or charges associated with each.

(2) An explanation of the applicability and amount of the competition transition charge, as determined pursuant to Sections 367 to 376, inclusive.

(3) A description of the potential customer's right to rescind the contract without fee or penalty as described in Section 395.

(4) An explanation of the customer's financial obligations, as well as the procedures regarding past due payments, discontinuance of service, billing disputes, and service complaints.

(5) The entity's registration number, if applicable.

(6) The right to change service providers upon written notice, including disclosure of any fees or penalties assessed by the supplier for early termination of a contract.

(7) A description of the availability of low-income assistance programs for qualified customers and how customers can apply for these programs.

(b) The commission may assist registered entities in developing the notice. The commission may suggest inclusion of additional information it deems necessary for the consumer protection purposes of this section. On at least a semiannual basis, registered entities shall provide the commission with a copy of the form of notice included in standard service plans made available to residential and small commercial customers as described in subdivision (a) of Section 392.1.

(c) Any entity offering electric services who declines to provide those services to a consumer shall, upon request of the consumer, disclose to that consumer the reason for the denial in writing within 30 days. At the time service is denied, the entity shall disclose to the consumer his or her right to make such a request. Consumers shall have at least 30 days from the date service is denied to make such a request.

Massachusetts: Chapter 164 of the Acts of 1997, eff. November 25, 1997.

Section 1F

(5)(i) Before service is initiated by a generation company, aggregator, or supplier to any customer, the generation company, aggregator, or supplier shall disclose information on rates and other information to a customer in a written statement which the customer may retain. The department shall promulgate rules and regulations prescribing the form, content, and distribution of such information to be disclosed, which shall include, but not be limited to, the following: the disclosure of the rate to be charged; whether the generation company or supplier operates under collective bargaining agreements and whether such generation company or supplier operates with employees hired as replacements during the course of a labor dispute; any charges, fees, penalties, or other conditions imposed upon a customer should he or she choose to purchase power from another generation company, aggregator, or supplier during the term specified in the contract; the fuel mix and emissions of the generation sources; whether a credit agency will be contacted; deposit requirements and the interest paid on deposits; due date of bills and all consequences of late payment; consumer rights where a bill is estimated; consumer rights of third-party billing and like arrangements; consumer rights to deferred payment arrangements; low-income rates; limits, if any, on warranty and damages; the applicable provisions of this section; the provisions for default service; a toll-free telephone number for service complaints; any other fees, charges, or penalties; and the methods by which a consumer shall be notified of any changes to any of these items. A generation company, a supplier, or an aggregator licensed by the department to do business in the commonwealth pursuant to this section shall prepare an information booklet describing a customer's rights under the provisions of this chapter. Such company, supplier, or aggregator shall annually mail this booklet to its customers.

(ii) A generation company, an aggregator, or a supplier shall be allowed to advertise the percentage of its power or energy portfolio that is generated by employers that operate under collective bargaining agreements or that operate with employees hired as replacements during the course of a labor dispute or that connotes or signifies to the ratepayer the relative environmentally beneficial effects of the power or energy sold by said generation company, an aggregator, or a supplier pursuant to rules and regulations promulgated by the department.

(iii) In addition to the disclosure requirements provided for in Subparagraphs (i) and (ii), the department shall promulgate such rules and regulations prescribing information to be disclosed by a generation company in any advertising or marketing of electricity rates, which regulations shall include, but not be limited to, disclosure of the rate to be charged in bold print in the case of print advertisements or through clear spoken language in the case of television or radio advertisements and on any monthly billing materials. The department shall coordinate with the attorney general to avoid duplication and to ensure consistency with the attorney general's regulations.

(6) The department shall promulgate uniform labeling regulations which shall be applicable to all suppliers as a condition of licensure pursuant to paragraph (1). Such information to be required by regulation in said labeling shall include price data, information on price variability, and customer service information and information about whether the generation company or supplier operates under collective bargaining agreements and whether such generation company or supplier operates with employees hired as replacements during the course of a labor dispute, fuel sources, and air emissions of sulfur dioxide, nitrogen dioxides, carbon dioxide, heavy metals, and any other emission which the department may determine causes significant health or environmental impact and for which sufficiently accurate and reliable data is available. The department shall require that such an electricity information label provide prospective and existing customers with adequate information by which to readily evaluate power supply options available in the market. Electricity suppliers shall be required to present such information, including information about the environmental characteristics of the sale of electric power products and services and whether the generation company or supplier operates under collective bargaining agreements and whether such generation company or supplier operates with employees hired as replacements during the course of a labor dispute to customers, in conformance with department requirements as to form and substance, and shall comply with federal and state laws governing unfair advertising and labeling.

CONSUMER COMPLAINTS

California Senate Bill 477 (Stats. 1997, ch. 275).

Sec. 392.1

(a) The commission shall compile and regularly update the following information: names and contact numbers of registered providers, information to assist consumers in making service choices, and the number of customer complaints against specific providers in relation to the number of customers served by those providers and the disposition of those complaints. To facilitate this function, registered entities shall file with the commission information describing the terms and conditions of any standard service plan made available to residential and small commercial customers. The commission shall adopt a standard format for this filing. The commission shall maintain and make generally available a list of entities offering electrical services operating in California. This list shall include all registered providers and those providers not required to be registered who request the commission to be included in the list. The commission shall, upon request, make this information available at no charge. Notwithstanding any other provision of law, public agencies which are registered entities shall be required to disclose their terms and conditions of service contracts only to the same extent that other registered entities

would be required to disclose the same or similar service contracts.

(b) The commission shall issue public alerts about companies attempting to provide electric service in the state in an unauthorized or fraudulent manner as defined in subdivision (b) of Section 394.25.

(c) The commission shall direct the Office of Ratepayer Advocates to collect and analyze information provided pursuant to subdivision (a) for purposes of preparing easily understandable informational guides or other tools to help residential and small commercial customers understand how to evaluate competing electric service options. In implementing these provisions, the commission shall direct the Office of Ratepayer Advocates to pay special attention to ensuring that customers, especially those with limited-English-speaking ability or other disadvantages when dealing with marketers, receive correct, reliable, and easily understood information to help them make informed choices. The Office of Ratepayer Advocates shall not make specific recommendations or rank the relative attractiveness of specific service offerings of registered providers of electric services.

LICENSING:

California Senate Bill 477 (Stats. 1997, ch. 275).

Sec. 394.25

(a) The commission may enforce the provisions of Sections 2102, 2103, 2104, 2105, 2107, 2108, and 2114 against registered entities as if those entities were public utilities as defined in these code sections. Notwithstanding the above, nothing in this section shall grant the commission jurisdiction to regulate registered entities other than as specifically set forth in this part. Registered entities shall continue to be subject to the provisions of Sections 2111 and 2112. Upon a finding by the commission's executive director that there is evidence to support a finding that the entity has committed an act constituting grounds for suspension or revocation of registration as set forth in subdivision (b) of Section 394.25, the commission shall notify the entity in writing and notice an expedited hearing on the suspension or revocation of the entity's registration to be held within 30 days of the notification to the entity of the executive director's finding of evidence to support suspension or revocation of registration. The commission shall, within 45 days after holding the hearing, issue a decision on the suspension or revocation of registration, which shall be based on findings of fact and conclusions of law based on the evidence presented at the hearing. The decision shall include the findings of fact and the conclusions of law relied upon.

(b) A registered entity may have its registration suspended or revoked, immediately or prospectively, in whole or in part, for any of the following acts:

(1) Making material misrepresentations in the course of soliciting customers, entering into service agreements with those customers, or administering those service agreements.

(2) Dishonesty, fraud, or deceit with the intent to substantially benefit the registered entity or its employees, agents, or representatives, or to disadvantage retail

electric customers.

(3) Where the commission finds that there is evidence that the entity is not financially or operationally capable of providing the offered electric service.

(c) Pursuant to its authority to revoke or suspend registration, the commission may suspend a registration for a specified period or revoke the registration, or in lieu of suspension or revocation, impose a moratorium on adding or soliciting additional customers.

Any suspension or revocation of a registration shall require the entity to cease serving customers within the boundaries of investor-owned electric corporations, and the affected customers shall be served by the electrical corporation until such time as they may select service from another service provider. Customers shall not be liable for the payment of any early termination fees or other penalties to any entity under the service agreement in the event the serving electric service provider's registration is suspended or revoked.

Maine Public Law 1997, ch 316 (May 29, 1997)

Sec. 35A § 3203: Licensing of competitive electricity providers; consumer protections; enforcement

1. Authority. In order to provide effective competition in the market for the generation and sale of electricity in the State and to provide an orderly transition from the current form of regulation to retail access, the commission shall license competitive electricity providers in accordance with this section.

2. Requirements. A competitive electricity provider may not undertake the sale of electricity at retail in this State without first receiving a license from the commission. Before approving a license application, the commission must receive from the applicant:

A. Evidence of financial capability sufficient to refund deposits to retail customers in the case of bankruptcy or nonperformance or for any other reason;

B. Evidence of the ability to enter into binding interconnection arrangements with transmission and distribution utilities;

C. Disclosure of all pending legal actions and customer complaints filed against the competitive electricity provider at a regulatory body other than the commission in the 12 months prior to the date of license application;

D. Evidence of the ability to satisfy the renewable resource portfolio requirement established under Section 3210; and

E. Disclosure of the names and corporate addresses of all affiliates of the applicant.

The commission shall consider the need for requiring and, if it determines there is a need, may require a competitive electricity provider to file a bond with the commission as evidence of financial ability to withstand market disturbances or other events that may increase the cost of providing service or to provide for uninterrupted service to its customers if a competitive electricity provider stops service.

3. Informational filings; public information. The commission shall establish by rule information disclosure and filing requirements for competitive electricity providers. The rules must require generation providers to file their generally available rates, terms and conditions with the commission. The commission, subject to appropriate protective orders, may require the submission of individual service contracts or any other confidential information from a competitive electricity provider.

   The commission by rule shall establish standards for publishing and disseminating, through any means considered appropriate, information that enhances consumers' ability to effectively make choices in a competitive electricity market.

   Rules adopted under this subsection are major substantive rules as defined in Title 5, Chapter 375, subchapter II-A and must be provisionally adopted by March 1, 1999.

4. Standard consumer protection provisions. As a condition of licensing, a competitive electricity provider that provides or proposes to provide generation service to a customer, wherever located, with a demand of 100 kilowatts or less:

   A. May not terminate generation service without at least 30 day prior notice to the customer;

   B. Must offer service to the customer for a minimum period of 30 days;

   C. Must allow the customer to rescind selection of the competitive electricity provider orally or in writing within 5 days of initial selection;

   D. May not telemarket services to the customer if the customer has filed with the commission a written request not to receive telemarketing from competitive electricity providers;

   E. Must provide to the customer within 30 days of contracting for retail service a disclosure of information provided to the commission pursuant to rules adopted under Subsection 3 in a standard written format established by the commission; and

   F. Must comply with any other provisions adopted by the commission by rule or order.

5. Licensing renewals and revocations. Consistent with all applicable requirements of Title 5, Chapter 375, the commission may limit the duration and effectiveness of a license to a specified term, may conduct proceedings for the renewal of licenses and may conduct proceedings for the revocation of a license when a requirement of this section has not been complied with by a competitive electricity provider. The commission shall adopt rules governing the procedures for issuing or revoking a license under this section and related matters.

6. Consumer protection standards; rules. The commission shall establish by rule consumer protection standards and standards to protect and promote market competition in order to protect retail consumers of electricity from fraud and other unfair and deceptive

business practices.

7. Penalties. In an adjudicatory proceeding, the commission may impose a penalty of up to $5,000 for each violation of this section or any consumer protection rule adopted under this section. Each day a violation continues constitutes a separate offense. Penalties collected by the commission under this section must be deposited in the Public Utilities Commission Reimbursement Fund under Section 117.

8. Dispute resolution. The commission shall resolve disputes between competitive electricity providers and retail consumers of electricity concerning standards established pursuant to Subsection 6.

9. Additional actions. The commission may impose by rule any additional requirements necessary to carry out the purposes of this chapter, except that this section may not be construed to permit the commission to regulate the rates of any competitive electricity provider.

10. Cease and desist orders. The commission may issue a cease and desist order:

   A. Following an adjudicatory hearing held in conformance with Title 5, Chapter 375, subchapter IV, if the commission finds that any competitive electricity provider or transmission and distribution utility has engaged or is engaging in any act or practice in violation of any law or rule administered or enforced by the commission or any lawful order issued by the commission. A cease and desist order is effective when issued unless the order specifies a later effective date or is stayed pursuant to Title 5, Section 11004; or

   B. In an emergency, without hearing or notice, if the commission receives a written, verified complaint or affidavit showing that a competitive electricity provider or a transmission and distribution utility is selling electricity to retail consumers without being duly licensed or is engaging in conduct that creates an immediate danger to the public safety or is reasonably expected to cause significant, imminent and irreparable public injury. An emergency cease and desist order is effective immediately and continues in force and effect until further order of the commission or until stayed by a court of competent jurisdiction. In a subsequent hearing the commission shall in a final order affirm, modify or set aside the emergency cease and desist order and may employ simultaneously or separately any other enforcement or penalty provisions available to the commission.

11. Restitution. The commission may order restitution for any party injured by a violation for which a penalty may be assessed pursuant to this section.

12. Enforcement. The commission through its own counsel or through the Attorney General may apply to the Superior Court of any county of the State to enforce any lawful order made or action taken by the commission pursuant to this section. The court may issue such orders, preliminary or final, as it considers proper under the facts established before it.

13. Notice to Attorney General. If the commission has reason to believe that any competitive electricity provider or transmission and distribution utility has violated any provision of law

for which criminal prosecution is provided and would be in order or any antitrust law of this State or the United States, the commission shall notify the Attorney General. The Attorney General shall promptly institute any actions or proceedings the Attorney General considers appropriate.

14. Disconnection restricted. A transmission and distribution utility may not disconnect service to a consumer due to nonpayment of generation charges or any other dispute with a competitive electricity provider, except that the commission may permit disconnection of electric service to consumers of electricity based on nonpayment of charges for standard-offer service provided under Section 3212.

15. Standard billing. The commission shall consider requiring standard billing information on bills for electric power service. If standard billing information is required, the commission shall investigate the possibility of adopting standards consistent with other New England states. The commission may not prohibit transmission and distribution utilities from contracting with generation service providers to include both entities' charges on a single bill. The commission may not preclude the inclusion of other information on bills for electric power service.

16. Access to load data. Upon request from a competitive electricity provider, the commission shall provide load data on a class basis that is in the possession of a transmission and distribution utility, subject to reasonable protective orders to protect confidentiality, if considered necessary by the commission.

17. Rules. Except as otherwise provided in this section, rules adopted pursuant to this section are routine technical rules as defined by Title 5, Chapter 375, subchapter II-A.

Massachusetts: Chapter 164 of the Acts of 1997, eff. November 25, 1997.

Section 1F

The department shall promulgate rules and regulations to provide retail customers with the utmost consumer protections contained in law, including, but not limited to, the following provisions:

(1) The department shall license to do business in the commonwealth all generation companies, aggregators, suppliers, energy marketers, and energy brokers in accordance with the provisions of Subparagraphs (i), (ii), and (iii). The department shall maintain a list of all licensed generation companies, aggregators, energy brokers, energy marketers, and suppliers, which shall be available to any consumer requesting such information through the department for a reasonable fee.

(i) All generation companies shall submit a license application to the department for approval to sell electric power or provide generation services within the commonwealth. Such application shall include the following: the company's technical ability, as defined pursuant to regulations promulgated by the department, to generate or otherwise obtain and deliver electricity and provide any other proposed services; documentation of financial capability of the applicant to provide the proposed services; a description of the company's form of ownership; and documentation regarding any valid purchase power contracts between the company, the company's affiliates, or the company's parent or subsidiary, and any electric company formed pursuant to the provisions of this

chapter. A license shall not be granted unless and until all of the above information is provided with the payment of a fee, the amount to be determined by the department.

(ii) All private, non-profit, or co-operative aggregators established pursuant to Sections 135 and 136 seeking to do business in the commonwealth shall submit a license application to the department, subject to rules and regulations promulgated by the department and subject to the payment of a fee, the amount to be determined by the department.

(iii) All energy brokers, energy marketers, and other suppliers seeking to do business in the commonwealth shall submit a license application to the department, subject to rules and regulations promulgated by the department and subject to the payment of a fee, the amount to be determined by the department.

Montana Senate Bill 390, Amending Title 69, Montana Code Annotated

(Eff. May 2, 1997)

25-8-404. Licensing.

(1) Except as provided in 69-8-311, an electricity supplier shall file an application with and obtain a license from the commission before offering electricity for sale to retail customers in the state of Montana.

(2) As a condition of licensing, an electricity supplier shall identify and describe its activities and purposes and the purposes of each of the electricity supplier's affiliates, if any, including whether an affiliate that owns or operates distribution facilities offers customer choice through open, fair, and nondiscriminatory access to the electricity supplier's or the electricity supplier's affiliates distribution facilities.

(3) The commission may require electricity suppliers that provide electricity supply service to small customers to make a standard service offer that ensures that those customers have access to affordable electricity.

(4) The commission may require:

(a) proof of financial integrity and a demonstration of adequate reserve margins or the ability to obtain those reserves; and

(b) a licensee to post a bond should an electricity supplier fail to supply electricity or lack financial integrity.

(5) An electricity supplier shall provide the commission and all distribution services providers with copies of all license applications pursuant to Subsection (2). Licensees shall update information and file annual reports with the commission and all distribution services providers.

(6) License applications are effective 30 days after filing with the commission unless the commission rejects the application during that period. If the commission rejects a license application, the commission shall specify the reasons in writing and, if practical, identify alternative ways to overcome deficiencies.

(7) Notwithstanding this chapter, a cooperative utility is not required to apply for a license from the commission to be an electricity supplier to customers served by that cooperative utility in its electric facilities service territory or to any customers served by another cooperative utility subject to the consent of the other cooperative utility's local governing body.

69-8-408. Penalties — license revocation.

(1) The commission may begin a proceeding to revoke or suspend a license of an electricity supplier, impose a penalty, or both, for just cause on the commission's own investigation or upon the complaint of an affected party if it is established that the electricity supplier:

(a) intentionally provided false information to the commission;

(b) switched, or caused to be switched, the electricity supply for a customer without first obtaining the customers written permission;

(c) failed to provide a reasonably adequate supply of electricity for its customers in Montana; or

(d) committed fraud or engaged in deceptive practices.

(2) Any person selling or offering to sell electricity in this state in violation of 69-8-404, 69-8-410, and this section is subject to a fine of not less than $100 or more than $1,000 for the violation or a license revocation or suspension. Each day of each violation constitutes a separate violation.

(3) The fine must be recovered in a civil action upon the complaint by the commission in any court of competent jurisdiction.

(4) A license revocation proceeding under this section is a contested case proceeding pursuant to the Montana Administrative Procedure Act, Title 2, Chapter 4, part 6.

LOW INCOME PROGRAMS

Maine: Public Law 1997, ch 316 (May 29, 1997)

35A § 3214. Needs-Based Low-income Assistance

1. Policy. In order to meet legitimate needs of electricity consumers who are unable to pay their electricity bills in full and who satisfy eligibility criteria for assistance, and recognizing that electricity is a basic necessity to which all residents of the State should have access, it is the policy of the State to ensure adequate provision of financial assistance.

2. Low-income assistance. In order to continue existing levels of financial assistance for low-income households and to meet future increases in need caused by economic exigencies, the commission shall:

A. Receive funds collected by all transmission and distribution utilities in the State at a rate set by the commission in periodic rate cases; and

B. Set initial funding for programs based on an assessment of aggregate customer need in periodic rate cases. The funding formula may not result in assistance being counted as income or as a resource in other means-tested assistance programs for low-income households. To the extent possible, assistance must be provided in a manner most likely to prevent the loss of other federal assistance.

3. Special rate. Nothing in this section may be construed to prohibit a transmission and distribution utility from offering any special rate or program for low-income customers that is not in effect as of the effective date of this chapter, subject to the approval of the commission.

4. Financial support. If the Legislature appropriates from the General Fund financial support for households and individuals receiving assistance under this section, the commission may not terminate the assistance provided by transmission and distribution utilities unless the General Fund source has completely replaced such assistance. The commission may adjust the assistance provided pursuant to this section based on the amount of any financial support from the General Fund and may reinstitute assistance subsequent to any termination of assistance if the commission finds that the General Fund source no longer completely replaces such assistance.

Massachusetts: Chapter 164 of the Acts of 1997, *eff.* November 25, 1997.

Section 1F

(4)(i) The department shall require that distribution companies provide discounted rates for low income customers comparable to the low-income discount rate in effect prior to March 1, 1998. Said discount shall be in addition to any reduction in rates that becomes effective pursuant to said Subsection (b) of said Section 1B on March 1, 1998, and to any subsequent rate reductions provided by a distribution company after said date pursuant to said subsection. The cost of such discounts shall be included in the rates charged to all other customers of a distribution company. Each distribution company shall guarantee payment to the generation supplier for all power sold to low-income customers at said discounted rates. Eligibility for the discount rates established herein shall be established upon verification of a low-income customer's receipt of any means tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 175 per cent of the federal poverty level based on a household's gross income. Said public benefits may include, but are not limited to, assistance which provides cash, housing, food, or medical care, including, but not limited to, transitional assistance for needy families, supplemental security income, emergency assistance to elders, disabled, and children, food stamps, public housing, federally-subsidized or state-subsidized housing, the low-income home energy assistance program, veterans' benefits, and similar benefits. The Division of Energy Resources shall make available to distribution companies the eligibility guidelines for said public benefit programs. Each distribution company shall conduct substantial outreach efforts to make said low-income discount available to eligible customers and shall report to said division, at least annually, as to its outreach activities and results. Outreach may include establishing an automated program of matching customer accounts with lists of recipients of said means tested public benefit programs and based on the results of said matching program, to presumptively offer a low-income discount rate to eligible customers so identified; provided, however, that the distribution company, within 60 days of said presumptive enrollment, informs any such low-income customer of said presumptive

enrollment and all rights and obligations of a customer under said program, including the right to withdraw from said program without penalty.

Not later than March 1, 1999 the department shall conduct an investigation and report to the joint committee on government regulations regarding the cost and benefits of expanding eligibility for the discount rates established in clause (i) of Subparagraph (4) of the first paragraph of Section 1F to any low-income customer who is eligible for any means tested public benefit for which eligibility does not exceed 175 per cent of the federal poverty level based on gross household income. The department shall further provide to said committee any legislative recommendations necessary to implement this section.

(ii) Prior to the termination of the seven year period of the standard service transition rate, the department shall, in consultation with said division, evaluate the effects of electricity restructuring on the affordability of electric power for low-income customers. The department shall make recommendations to the general court relative to the continuation of the low-income discount rate authorized pursuant to this subsection or to make modifications thereto. The department shall, in its recommendations, consider whether or not to modify said discount by establishing a sliding scale low-income discount program.

(iii) A residential customer eligible for low-income discount rates shall receive the service on demand and may return to standard offer service at any time including from default service. Each distribution company shall periodically notify all customers of the availability of and method of obtaining low-income discount rates and standard offer service. An existing residential customer eligible for low-income discount on the date of start of retail access who orders service for the first time from a distribution company shall be offered standard offer service by that distribution company. A residential customer eligible for low-income discount receiving standard offer service shall be allowed to retain standard offer service upon moving within the service territory of a distribution company.

(iv) There shall be no charge to any residential customer for initiating or terminating low-income discount rates, default service, or standard offer service when said initiation or termination request is made after a regular meter reading has occurred and the customer is in receipt of the results of said reading. A distribution company may impose a reasonable charge, as set by the department through regulation, for initiating or terminating low-income discount rates, default service, or standard offer service when a customer does not make such an initiation or termination request upon the receipt of said results and prior to the receipt of the next regularly scheduled meter reading. For purposes of this subsection, there shall be a regular meter reading conducted of every residential account no less often than once every two months. Notwithstanding the foregoing, there shall be no charge when the initiation or termination is involuntary on the part of the customer.

Montana Senate Bill 390, Amending Title 69, Montana Code Annotated
(Eff. May 2, 1997)

28) "Universal system benefits programs" means public purpose programs for:

(a) cost-effective local energy conservation;

(b) low-income customer weatherization;

(c) renewable resource projects and applications, including those that capture unique social and energy system benefits or provide transmission and distribution system benefits;

(d) research and development programs related to energy conservation and renewables;

(e) market transformation designed to encourage competitive markets for public purpose programs; and

(f) low-income energy assistance.

69-8-402. Universal system benefits programs.

(1) Universal system benefits programs are established for the state of Montana to ensure continued funding of and new expenditures for energy conservation, renewable resource projects and applications, and low-income energy assistance during the transition period and into the future.

(2) Beginning January 1, 1999, 2.4% of each utility's annual retail sales revenue in Montana for the calendar year ending December 31, 1995, is established as the annual funding level for universal system benefits programs. Unless modified as provided in Subsection (7), this funding level remains in effect until July 1, 2003.

(a) The recovery of all universal system benefits programs costs imposed pursuant to this section is authorized through the imposition of a universal system benefits charge assessed at the meter for each local utility system customer as provided in this section.

(b) Utilities must receive credit toward annual funding requirements for a utility's internal programs or activities that qualify as universal system benefits programs, including those portions of expenditures for the purchase of power that are for the acquisition or support of renewable energy, conservation-related activities, or low-income energy assistance, and for customers' programs or activities as provided in Subsection (7).

(c) A utility at which the sale of power for final end-use occurs is the utility that receives credit for the universal system benefits program expenditure.

(d) For a utility to receive credit for low-income related expenditures, the activity must have taken place in Montana.

(e) If a utility's or a customer's credit for internal activities does not satisfy the annual funding provisions of Subsection (2), then the utility shall make a payment to the

universal system benefits fund for any difference.

(3) Cooperative utilities may collectively pool their statewide credits to satisfy their annual funding requirements for universal system benefits programs and low-income energy assistance.

(4) A utility's transition plan must describe how the utility proposes to provide for universal system benefits programs, including the methodologies, such as cost-effectiveness and need determination, used to measure the utility's level of contribution to each program.

(5) A utility's minimum annual funding requirement for low-income energy and weatherization assistance is established at 17% of the utility's annual universal system benefits funding level and is inclusive within the overall universal system benefits funding level.

(a) A utility must receive credit toward the utility's low-income energy assistance annual funding requirement for the utility's internal low-income energy assistance programs or activities.

(b) If a utility's credit for internal activities does not satisfy its annual funding requirement, then the utility shall make a payment for any difference to the universal energy assistance fund.

(6) An individual customer may not bear a disproportionate share of the local utility's funding requirements, and a sliding scale must be implemented to provide a more equitable distribution of program costs.

(7) (a) A customer with loads greater than 1,000 kilowatts shall:

(i) pay a universal system benefits program charge equal to the lesser of:

(A) $500,000 less the customer credits provided for in this Subsection (7); or

(B) the product of 0.9 mills per kilowatt hour multiplied by the customer's kilowatt hour purchases, less customer credits provided for in this Subsection (7);

(ii) receive credit toward that customer's annual universal system benefits charge for internal expenditures and activities that qualify as a universal system benefits program expenditure and these internal expenditures must include but not be limited to:

(A) expenditures that result in a reduction in the consumption of electrical energy in the customer's facility; and

(B) those portions of expenditures for the purchase of power at retail or wholesale that are for the acquisition or support of renewable energy or conservation-related activities.

(b) Customers making these expenditures must receive a credit against the customer's annual universal system benefits charge, except that any of those amounts expended in a

calendar year that exceed that customer's universal system benefits charge for the calendar year must be used as a credit against those charges in future years until the total amount of those expenditures has been credited against that customer's universal system benefits charges.

PERFORMANCE-BASED REGULATION AND SERVICE QUALITY

Massachusetts: Chapter 164 of the Acts of 1997, eff. November 25, 1997.

Section 1E

(a) The department is hereby authorized to promulgate rules and regulations to establish and require performance based rates for each distribution, transmission, and gas company organized and doing business in the commonwealth pursuant to the provisions of this chapter. In promulgating such performance based rate schemes, the department shall establish service quality standards each distribution, transmission, and gas company, including, but not limited to, standards for customer satisfaction service outages, distribution facility upgrades, repairs and maintenance, telephone service, billing service, and public safety provided, however, that such service quality standards shall include benchmarks for employee staff levels and employee training programs for each such distribution, transmission, and gas company.

(b) In complying with the service quality standards and employee benchmarks established pursuant to this section, a distribution, transmission, or gas company that makes a performance based rating filing after the effective date of this act shall not be allowed to engage in labor displacement or reductions below staffing levels in existence on November 1, 1997, unless such are part of a collective bargaining agreement or agreements between such company and the applicable organization or organizations representing such workers, or with the approval of the department following an evidentiary hearing at which the burden shall be upon the company to demonstrate that such staffing reductions shall not adversely disrupt service quality standards as established by the department herein. Nothing in this paragraph shall prevent reduction of forces below the November 1, 1997 level through early retirement and severances negotiated with labor organizations before said date.

(c) Each distribution, transmission, and gas company shall file a report with the department by March first of each year comparing its performance during the previous calendar year to the department's service quality standards and any applicable national standards as may be adopted by the department. The department shall be authorized to levy a penalty against any distribution, transmission, or gas company which fails to meet the service quality standards in an amount up to and including the equivalent of 2 per cent of such company's transmission and distribution service revenues for the previous calendar year.

(d) The department is authorized and directed to promulgate regulations relative to an alternative dispute resolution process for the handling of damage claims by customers in an amount under $100. The department shall establish a 60 day timeline for the resolution of all mediation claims. The department shall issue a biannual report to the house and senate clerks and the joint committee on government regulations which shall include, but not be limited to, the following information: nature of consumer claims, number of consumer claims and resolutions of consumer claims reviewed by the department during

the previous six months. Said report shall be available for public review at the department.

SLAMMING

California Senate Bill 477 (Stats. 1997, ch. 275).

Section 366.5 is added to the Public Utilities Code, to read:

(a) No change in the aggregator or supplier of electric power for any small commercial customer may be made until one of the following means of confirming the change has been completed.

(1) Independent third-party telephone verification.

(2) Receipt of a written confirmation received in the mail from the consumer after the consumer has received an information package confirming the agreement.

(3) The customer signs a document fully explaining the nature and effect of the change in service.

(4) The customer's consent is obtained through electronic means, including but not limited to, computer transactions.

(b) No change in the aggregator or provider of electric power for any residential customer may be made until the change has been confirmed by an independent third-party verification company, as follows:

(1) The third-party verification company shall meet each of the following criteria:

(A) Be independent from the entity that seeks to provide the new service.

(B) Not be directly or indirectly managed, controlled, or directed, or owned wholly or in part, by an entity that seeks to provide the new service or by any corporation, firm, or person who directly or indirectly manages, controls, or directs, or owns more than 5 percent of the entity.

(C) Operate from facilities physically separate from those of the entity that seeks to provide the new service.

(D) Not derive commission or compensation based upon the number of sales confirmed.

(2) The entity seeking to verify the sale shall do so by connecting the resident by telephone to the third-party verification company or by arranging for the third-party verification company to call the customer to confirm the sale.

(3) The third-party verification company shall obtain the customer' s oral confirmation regarding the change, and shall record that confirmation by obtaining appropriate verification data. The record shall be available to the customer upon request.

Information obtained from the customer through confirmation shall not be used for marketing purposes. Any unauthorized release of this information is grounds for a civil suit by the aggrieved resident against the entity or its employees who are responsible for the violation.

(4) Notwithstanding paragraphs (1), (2), and (3), an aggregator or provider of electric power shall not be required to comply with these provisions when the customer directly calls an aggregator or provider of electric power to change service providers. However, an aggregator or provider of electric power shall not avoid the verification requirements by asking a customer to contact an aggregator or provider of electric power directly to make any change in the service provider.

(c) Any aggregator or provider of electric power offering electricity service to residential and small commercial customers that violates the verification procedures described in this section shall be liable to the aggregator or provider of electric power offering electricity services previously selected by the customer in an amount equal to all charges paid by the customer after the violation.

(d) A change in provider of electric power by an aggregator is not a change in provider of electric power for purposes of this section.

(e) Public agencies are exempt from this section to the extent they are serving customers within their jurisdiction.

(f) An electrical corporation is exempt from this section for customers which default to the service of the electrical corporation.

Massachusetts: Chapter 164 of the Acts of 1997, eff. November 25, 1997.

Section 1F.

(8)(a)

Each customer choosing a generation company or its affiliate, subsidiary, or parent company, or a supplier or aggregator shall be required to affirmatively choose such entity. It shall be unlawful for a generation company, supplier, or aggregator to provide power or other services to such a customer without first obtaining said affirmative choice from the customer. For the purposes of this section, the term "affirmative choice" shall mean the signing of a letter of authorization, third party verification, or the completion of a toll-free call made by the customer to an independent third party operating in a location physically separate from the telemarketing representative who has obtained the customer's initial oral authorization to change to a new electricity provider. For the purposes of this section, the term "third party verification" shall mean an appropriately qualified and independent third party operating in a location physically separate from the telemarketing representative who has obtained the customer's oral authorization to change to a new electricity service provider, such authorization to include appropriate verification data, such as the customer's date of birth and social security number; provided, however, any such information or data in the possession of the third party verifier or the marketing company shall not be used, in any instance, for commercial or other marketing purposes, and shall not be sold, delivered, or shared with any other party for such purposes. Such authorization shall include appropriate verification data, such as the customer's date of birth and social security number; provided, however, any information or data in

possession of the independent third party verifier or the marketing company shall not be used, in any instance, for commercial or other marketing purposes, and shall not be sold, delivered, or shared with any other party for such purposes.

For the purposes of this section, the term "letter of authorization" shall mean,

(i) a separate document, an easily separable document containing only the authorizing language described in paragraph (d), whose sole purpose is to authorize a generation company, aggregator, or supplier to initiate a primary generation company, aggregator, or supplier change. The letter of authorization must be signed and dated by the consumer requesting the primary generation company, aggregator, or supplier change.

(ii) The letter of authorization shall not be combined with inducements of any kind on the same document.

(iii) At a minimum, the letter of authorization must be printed with a readable type of sufficient size to be clearly legible and must contain clear and unambiguous language that confirms:

(1) The consumer's billing name and address;

(2) The decision to change electricity service from the current generation company, aggregator, or supplier to the prospective generation company, aggregator or supplier;

(3) That the consumer understands that only one generation company, aggregator, or supplier may be designated as the consumer's electric company; and

(4) That the consumer understands that any primary generation company, aggregator, or supplier selection the consumer chooses may involve a charge to the consumer for changing the consumer's primary generation company, aggregator, or supplier.

(iv) Letters of authorization shall not suggest or require that a consumer take some action in order to retain the consumer's current generation company, aggregator, or supplier.

(v) If any portion of a letter of authorization is translated into another language, then all portions of the letter of authorization must be translated into that language.

Each customer choosing a generation company or its affiliate, subsidiary, or parent company, a supplier or aggregator shall have the right to rescind, without charge or penalty, his or her choice of generation company, aggregator, or supplier no later than midnight on the third day following the customer's receipt of a written confirmation of an agreement to purchase electricity. Upon the switching of a customer's service provider, there shall be included in the customer's first bill an acknowledgment to be completed by the customer agreeing to the service switch. Such bill shall also include all information mandated under clause (i) of Subparagraph (5).

Each customer choosing a generation company or its affiliate subsidiary, or parent company, a supplier or aggregator shall have the right to rescind, without charge or penalty, the choice of generation company, aggregator, or supplier no later than midnight on the third day following the customer's receipt of a written confirmation of an agreement to purchase electricity and a statement of the terms and conditions of service as described in Subsection (5)(i). Upon switching of a customer's service provider, there shall be included in the customer's bill for distribution service an acknowledgment of the service switch, along with information on how to file a complaint regarding an unauthorized switch.

(b) A customer may initiate a complaint that his retail electricity service has been switched by or to another service provider without his prior authorization. Said complainant shall file the complaint with the department within 30 days after the statement date of the notice indicating that the customer's retail electricity service has been switched. The department shall, within 10 business days of receiving the complaint, request from the customer a copy of the customer's electricity bill, the name of the original service provider, the name of the new service provider, and any other information the department may deem relevant. The customer shall, within 15 business days of the department's notifying the customer, submit to the department the requested information. Within 15 business days of receiving the request of information from the customer, the department shall send

(i) to the customer, a letter acknowledging receipt of the information;

(ii) to the original service provider, a letter informing it of the pending complaint and requesting it to provide information relevant to the service switch; and

(iii) to the new service provider, a letter informing it of the pending complaint, requesting the proof of the customer's affirmative choice to switch his service provider, and requesting it to provide other information the department deems relevant. The original service provider and the new service provider shall, within five business days of the department's request, return the requested information to the department. Within 25 business days after receiving a copy of the customer's third party verification and all relevant information as required herein, the department shall determine if the customer authorized the new service provider to switch the customer's service.

(c) If the department determines that the new service provider does not possess the required proof of the customer's affirmative choice, the department shall calculate and require the new service provider to refund the following: (i) to the customer, the difference between what the customer would have paid to the previous service provider and actual charges paid to the new service provider; (ii) to the customer, any reasonable expense the customer incurred in switching back to the original service provider; and (iii) to the original service provider, any lost revenue, which shall consist of the amount of money the original service provider would have received for the service used by the customer during the time the customer received services from the new service provider if the customer's service had not been switched. This amount shall gross, irrespective of expenses, what the original service provider would have reasonably incurred providing the services to the customer. The department shall promulgate rules and regulations for the implementation of this subsection.

(d) Any generation company, supplier, or aggregator determined by the department to have switched any customer's service provider without proper authorization from the customer one or more times in a 12 month period shall be subject to a civil penalty not to exceed $1,000 for the first offense and not less than $2,000 nor more than $3,000 for any subsequent offense per customer. In determining the amount of the civil penalty, the department shall consider the nature, circumstances, and gravity of the violation, the degree of the respondent's culpability, and the respondent's history of prior offenses.

(e) Any generation company, supplier, or aggregator determined to have switched any customer's service provider without proper authorization more than 20 times in a 12 month period may, after a full hearing and determination by the department that such generation company supplier or aggregator intentionally, maliciously or fraudulently switched the service or more than 20 customers in a 12 month period, be prohibited from selling electricity in the commonwealth for a period of up to one year. In determining the length of suspension, the department shall consider the nature, circumstances and gravity of each violation and the degree of the culpability of the generation company, supplier or aggregator.

(f) The department shall track instances in which a generation company, supplier, or aggregator switched a customer's electricity service without the customer's prior authorization. The department shall keep a record of all unauthorized switches which occurred during a calendar year. Beginning with calendar year 1999, the department shall, by March 31 of each year, file an annual report with the joint committee on government regulations and the house and senate committees on ways and means detailing the total number of unauthorized switches, enforcement procedures undertaken by the department against such slamming tactics, so-called, the total amount of dollars returned to customers, the total amount of dollars collected in civil penalties pursuant to Subsection (c), and the overall impact of the provisions of this section.

STANDARD OFFER/DEFAULT SERVICE

Maine: Public Law 1997, ch 316 (May 29, 1997)

Sec. 35A § 3214

When retail access begins, the commission shall ensure that standard-offer service is available to all consumers of electricity.

1. Establishment of terms and conditions. The commission shall open a rule-making proceeding no later than October 1, 1997 to establish terms and conditions for standard-offer service that include, but are not limited to:

   A. Entry and exit restrictions;

   B. Protection against a standard-offer service provider's failure to provide service as contracted for;

   C. Appropriate rate design issues;

   D. Retaining averaged prices for all customers in the same class; and

E. Credit, collection and disconnection practices.

By February 15, 1998, the commission shall provisionally adopt rules establishing terms and conditions for standard-offer service. Rules adopted under this Subsection are major substantive rules pursuant to Title 5, Chapter 375, subchapter II-A.

2. Selection of standard-offer service providers. After terms and conditions for standard-offer service have been established under Subsection 1, the commission shall administer a bid process to select a standard-offer service provider for that transmission and distribution utility's service territory. By July 1, 1999, the commission shall review the bid submissions for each transmission and distribution utility and select the standard-offer service provider or providers for that utility's service territory.

A. The commission shall determine the general credit data and specific information from general load and usage data that transmission and distribution utilities must provide to potential standard-offer service bidders, including, but not limited to, monthly demand and energy consumption and the number of customers in each customer class. The commission shall ensure that individual customer confidentiality is preserved in this process and that a transmission and distribution utility releases customer-specific data only with the customer's permission. If the transmission and distribution utility incurs additional costs to develop and produce the required data, the commission shall permit that utility to recover those costs through transmission and distribution rates.

B. The commission shall establish the maximum duration of a standard-offer service contract after considering all relevant factors, including, but not limited to, market risks and the need for price stability and contract flexibility.

C. A competitive electricity provider that is an affiliate of a large investor-owned transmission and distribution utility may submit bids to provide standard-offer service for up to 20% of the electric load within the service territory of the large investor-owned transmission and distribution utility with which it is affiliated. To prevent the unfair use of information possessed by a large investor-owned transmission and distribution utility, the commission shall ensure that a utility seeking to bid on standard-offer service has no greater access to relevant information than is provided to other potential bidders.

D. A consumer-owned transmission and distribution utility and a small investor-owned transmission and distribution utility may submit bids to provide standard-offer service for that utility's service territory. To prevent the unfair use of information possessed by a consumer-owned transmission and distribution utility or a small investor-owned transmission and distribution utility, the commission shall ensure that a utility seeking to bid on standard-offer service has no greater access to relevant information than is provided to other potential bidders.

By February 15, 1998, the commission shall provisionally adopt rules establishing a methodology for structuring the bidding process for standard-offer service in order to implement the provisions of this subsection. In adopting rules, the commission shall consider methods to ensure, to the extent possible, at least 3 providers of standard-offer service in each transmission and distribution utility service territory, as long as the method does not result in any significant adverse

impacts on rates paid by consumers. Rules adopted under this subsection are major substantive rules pursuant to Title 5, Chapter 375, subchapter II-A.

3. Price cap; investigation. If the qualifying bids under Subsection 2 for standard-offer service in any service territory, when combined with the regulated rates of transmission and distribution service and any stranded costs charge, exceed, on average, the total rate for electricity immediately before the implementation of retail access, the commission shall investigate whether the implementation of retail access remains in the public interest or whether other mechanisms to achieve the public interest and to adequately protect consumer interests need to be put in place. Pursuant to Section 3217, the commission shall notify the Legislature of the results of its investigation and its determination.

4. Implementation period. Standard-offer service must be available until March 1, 2005. By January 1, 2004, the commission shall begin an investigation to determine whether the continued availability of standard-offer service is necessary and in the public interest. The commission shall conclude the investigation by June 30, 2004 and report its results to the Legislature pursuant to Section 3217.

5. Territorial and rate class application. Nothing in this section precludes the commission from permitting or requiring different terms and conditions for standard-offer service in different utility service territories or for different customer classes.

Nevada: Assembly Bill 366, July 16, 1997.

Sec. 45.

1. The commission shall designate a vertically integrated electric utility to provide electric service to customers who are unable to obtain electric service from an alternative seller or who fail to select an alternative seller. The provider so designated by the commission is obligated to provide electric service to the customers. Electric service provided by the utility pursuant to this section shall be deemed to be a noncompetitive service for which the utility may recover its costs pursuant to NRS 704.001 to 704.655, inclusive, 704.701 to 704.751, inclusive, 704.800 to 704.900, inclusive.

2. Upon a finding by the commission that the public interest will be promoted, the commission may prescribe alternate methods for providing electric service to those customers described in Subsection 1. The alternate methods may include, but are not limited to, the direct assignment of customers to alternative sellers or electric distribution utilities or a process of competitive bidding for the right to provide electric service to the designated customers.

3. The commission shall establish minimum terms and conditions under which electric service must be provided pursuant to this section, including a minimum period during which a customer must be obligated to pay for the electric service from the assigned provider. The price charged for electric service for a particular group of customers must reflect the incremental cost of serving the group.

4. If the designated provider of the electric service is a vertically integrated electric utility, the utility shall provide the electric service through an affiliate whose sole business activity is the provision of electric service.

5. Except as otherwise provided in this Subsection and Subsection 6, the rate charged for residential service provided pursuant to Subsection 1 must not exceed the rate charged for that service on July 1, 1997. The limitation set forth in this subsection is effective until 2 years after the date upon which, in accordance with Section 39 of this act, the commission repeals the regulations which established the pricing method for that service and the terms and conditions for providing that service.

6. The commission may, in accordance with NRS 704.110, 704.120 and 704.130, approve an increase in the rate charged for residential service provided pursuant to Subsection 1 in an amount that does not exceed the increase necessitated, if any, to ensure the recovery by the vertically integrated electric utility of its just and reasonable costs. The provisions of this section do not limit or prohibit in any manner the operation of any order issued by the commission before July 1, 1997.

APPENDIX C

NATIONAL COUNCIL PUBLICATIONS ON ELECTRIC INDUSTRY RESTRUCTURING

Research Reports

Federal, State, and Local Tax Implications of Electric Industry Restructuring (Deloitte & Touche, 1996)

Assessing Impacts of Restructuring on Small Business, Residential, and Low-Income Customers (Roger D. Colton, 1996)

The Unintended Impacts of Restructuring (Dave Schoengold, 1996)

The Organization of Competitive Wholesale Power Markets and Spot Price Pools (Paul A. Centolella, 1996)

Stranded Benefits in Electric Utilities Restructuring (Nancy Brockway & Michael Sherman, 1996)

The British Electric Utility Restructuring Experience: History and Lessons for the U.S. (Michael C. Brower, Stephen D. Thomas, & Catherine Mitchell, 1996)

Regulation and Competition Without Privatization: Norway's Experience (Jan Moen & Jan Hamrin, Printed in *The Electricity Journal*, March 1996)

Public-Interest Research and Development in the Electric and Gas Utility Industries (Carl Blumstein, Richard Scheer, and Stephen Wiel, 1998)

Briefing Papers

Customer Choice (Cheryl Harrington, 1996)

Electric Utility Transition Costs (Eric Hirst & Lester Baxter, 1996)

Market Power in the Electric Utility Industry; An Overview (William Shepherd, 1997)

Restructuring Issues Associated with Nuclear Power Plants (William B. Marcus, 1997)

Regional issues in Restructuring the Electric Industry (Sue Tierney, 1998)

Disclosure Series

Full Environmental Disclosure for Electricity: Tracking and Reporting Key Information (David Moskovitz et al., July 1997)

Information Disclosure for Electricity Sales: Consumer Preferences from Focus Groups (Alan S. Levy et al., July 1997)

Disclosure of Fuel Mix and Emissions by Retail Electric Service Providers: Issues of Confidentiality vs. Public Right to Know (Scott Hempling, July 1997)

Information Disclosure for Electricity Sales: Consumer Preferences from Focus Groups, Report 2 -- West Coast (Mario Teisl et al., 1997)

Information Disclosure for Electricity Sales: Consumer Preferences from Focus Groups, Report 3-- Rocky Mountain West (Lynn Halverson & Edward Holt, 1997)

Uniform Consumer Disclosure Standards for New England: Report and Recommendations to the New England Utility Regulatory Commissions (Tom Austin et al., January 1998)

Information Consumers Want in Electricity Choice: Summary of Focus Group Research (Edward Holt, January 1998)

Summary Report: Baseline Survey — Consumer Knowledge, Practices, and Attitudes: Electric Utility Deregulation and Consumer Choice (Kenneth Winneg, et al., January 1998)

Model Electricity Consumer Protection Disclosures (Jerrold Oppenheim & Barbara Alexander, April 1998)

Label Testing: Results of Mall Intercept Study (Kenneth Winneg, et al., April 1998)

Other

Council Design Criteria List
(Jan Hamrin, 1995)

Six Generic Restructuring Models
(Jan Hamrin, 1995)

A Glossary of Restructuring Terms
(Jan Hamrin, 1995)

National Council Publications can be downloaded from its website http://eetd.lbl.gov/NationalCouncil/

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Restructuring in Retrospect

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The National Conference of State Legislatures serves the legislators and staffs of the nation's 50 states, its commonwealths, and territories. NCSL is a bipartisan organization with three objectives:

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- To foster interstate communication and cooperation,
- To ensure states a strong cohesive voice in the federal system.

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Executive Summary

When California first proposed to open its retail electricity market to competition and to replace its state-regulated system, retail electricity rates were high, utilities were faced with an overcapacity of power generation, natural gas prices were low and technology seemed to be forcing electricity prices inexorably downward. Twenty-five states eventually passed legislation to open their power markets to competition, and approximately half of those had actually opened their markets by early 2001. Although it is still early in many states' transition toward retail competition, it is nonetheless helpful to look back at the original motives for restructuring, and to investigate—in retrospect—some of the initial successes or problems with restructuring of retail power markets.

The year 2000 was a watershed year, however. Natural gas prices skyrocketed for a while and it became clear that, because few power plants had been built for close to a decade, the surplus of electricity generation capacity was almost nonexistent. Electricity prices jumped throughout the western United States, as well as in a great deal of the eastern half of the country. Almost daily, headlines described an ongoing electricity crisis in California that was expected to last well into 2001. California's crisis and the problems in other parts of the country prompted a reexamination of the success and potential for retail customers—especially the smallest customers—to benefit quickly from competitive markets.

Residential customers and other small electricity users can expect some savings from restructuring, as some limited experience demonstrates. However, the savings are likely to be small. Further, marketers are likely to have difficulty realizing a profit from serving the smaller customers. The cost to acquire a new customer ranges from $40 up to $200 or $300. With the low margins and low usage that characterize residential and small commercial customer markets, it takes time for marketers to earn a return on their initial investment in securing the new customer. All these factors have meant that residential customer markets have been slow to develop.

Industrial customers, on the other hand, have switched providers much more quickly than have the smaller electricity users. Data suggest that the largest industrial customers—those with greatest electricity usage—have the most to gain from choosing a new provider, that the marketers who serve them have the most to gain from doing so, and that these markets generally have been much more active than have markets for the smallest electricity users. In some cases, even those markets have proved difficult because wholesale electricity suppliers have been unable to offer power at the stable rates that would enable retail sellers to offer their own supplies at rates that beat those of the old regulated utility provider. It is clear, therefore, that wholesale markets for electricity must work well before retail markets—even for the largest customers—will be active.

State governments and the federal government fulfill different roles in the effort to make the retail and wholesale markets work. It is important, however, that state policymakers understand what part of the electric industry they can control directly, what the federal government controls and what state governments can influence, but not control.

Elements of Electricity Markets

Under State Control or Influence

- Retail electricity rates
- Retail electricity usage (through efficiency or pricing programs)
- Initial decision about whether to allow retail competition
- Power plant siting
- Power line siting
- State tax policy related to generation, efficiency, renewable energy, and transmission and distribution systems

Not Under Direct State Control

- Wholesale electricity rates and prices
- Wholesale natural gas prices
- Formation of regional electricity entities (often called regional transmission organizations)
- Electric rates and policies of federal utilities
- Transmission rates and policies
- Granting rights for a generator to sell power at "market based rates"

Source: NCSL, 2001.

A variety of state policies can influence both retail and wholesale markets, several of which are described in the final chapter of this publication.

This report provides policymakers with guidance as they examine past and future restructuring efforts and seek to determine how competitive markets can be of benefit to customers. Industrial and larger commercial customers may benefit from competitive markets, while residential and small commercial customers may not benefit unless legislators focus specifically on their needs. But it also has become evident that even the largest customers will save money only if the wholesale market functions smoothly. State policymakers have at their disposal numerous options that may enable both retail and wholesale power markets, but even five years into the experiment, it has yet to be determined which state policies will be most effective.

INTRODUCTION

It is unusual to hear anyone in the United States say that competition and free markets are bad or unproductive. Indeed, the U.S. economy is based on the idea that competition can deliver a great variety of products, services and innovations at reasonable prices for many types of consumers. Therefore, it seemed to make sense to many observers when the federal government and many state legislators and regulators began the process of dismantling the regulations and monopoly structures that had long governed the trucking, airline, securities, cable and telephone industries. The idea was that deregulation would produce competition, and that competition would, in turn, bring a wide variety of new products and services to the consuming public. Furthermore, these new products and services would be available at prices lower than were available under regulation. Reduced regulation and increased competition have arguably brought an array of new products and services to many consumers. However, in the electric industry, it is still too early to determine the success of efforts to restructure the market.

This report reviews the history of the 1990s movement to restructure the nation's electric industry and pinpoints some of the pitfalls and the potential savings that could result from the effort. It concludes the following.

1. The rationale for retail electricity restructuring rested on a combination of factors—including, in part, overcapacity and

steadily declining wholesale prices—that do not currently exist but that may recur in the next two to five years.

2. The initial attraction of restructuring was that it would provide relief from high retail rates and allow customers to pay prices closer to the inexpensive wholesale market rates. For the most part, that has not happened in any sustained way.

3. Under retail restructuring, customers have switched to new providers slowly. Large commercial and industrial customers switched at a much faster pace than residential customers.

4. In some areas, restructuring appears to have resulted in lower electricity prices for some customers. Many legislated rate reductions that occurred as a result of negotiated restructuring laws most likely would have happened even if the market had remained regulated.

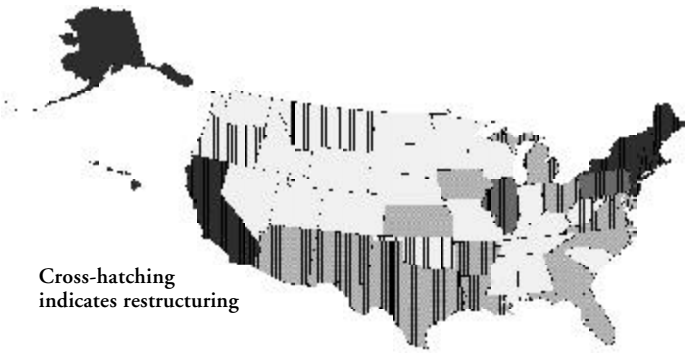
5. The potential for future savings relies on the proper structure and functioning of wholesale markets. Such functioning wholesale markets promote adequate generation and transmission system investments, greater efficiency and investments in new technologies, and the resolution of market power issues.

This report first reviews the rationale for and history of the U.S. electricity industry restructuring effort, then discusses the early results of these initiatives.

WHY RESTRUCTURING?

The electricity business was known by the early 1990s as the nation's last highly regulated industry. The 1980s and 1990s saw states and the federal government lift many regulations governing the airline, trucking, telecommunications and other industries. In states like California, Massachusetts, New Hampshire and New York, state policymakers began to ask whether it made sense to deregulate the business of generating electricity. High electricity prices fueled much of the ensuing debate. In the early and mid-1990s, electricity prices in California and several other states were well above the national average, largely due to investments made by utilities in those states. It is worth noting that nearly all those investments were made with the approval of the state utility commissions, and sometimes at the behest of those regulators, legislatures or even the U.S. Congress. Although observers have tried to assign blame for high electricity rates to either the commissions, the utilities themselves, the legislatures or others, the truth is that the blame can be spread among many. Figure 1 illustrates electric rates throughout the country in 1997, at the height of state interest in retail restructuring.

Figure 1. Residential Average Rates—1997 kilowatt-hours (kWh)



More than 130 percent of national average (11.5¢/kWh to 14.8¢/kWh)

110 percent to 129 percent of national average (9.9¢/kWh to 10.4¢/kWh)

90 percent to 109 percent of national average (7.5¢/kWh to 9.3¢/kWh)

Less than 90 percent of national average (5.0¢/kWh to 7.6¢/kWh)

Source: *EEI Statistical Yearbook Advance Release*, 2001.

Retail Rates Were High Due to Several Factors

Investments in Certain Large Power Facilities

Utilities had invested in increasingly large power plants from the 1960s into the early 1980s. Many of these facilities' costs—especially those of nuclear plants—ballooned, particularly after the disaster at Three Mile Island prompted the federal government to impose new, but costly, safeguards on nuclear facilities. In addition, some nuclear facilities suffered regulatory and operational problems that left them out of service for months at a time or kept them from commencing operation—always at tremendous cost. One prominent example, of this problem is the Shoreham nuclear facility on Long Island, which operated only briefly and eventually was shut down.[1] Another is the Seabrook facility in New Hampshire. High costs for both these facilities

were largely responsible for higher than average electricity rates of the Long Island Lighting Company (LILCO) and Public Service New Hampshire (PSNH).

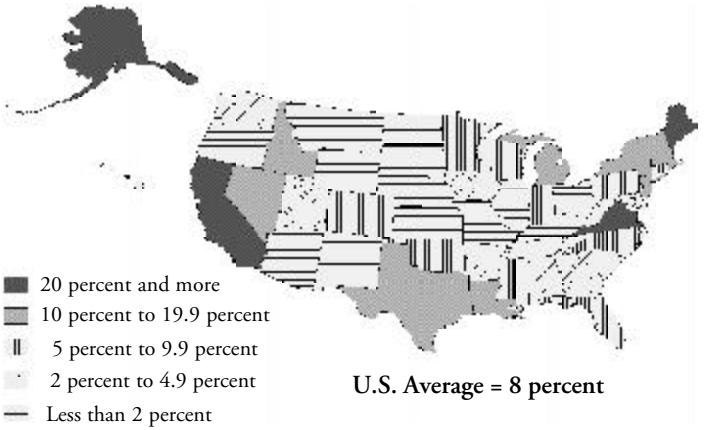
Contracts that Utilities Signed with Independent Generators

The U.S. Congress passed the Public Utilities Regulatory Policies Act of 1978 (PURPA) in an effort to diversify the nation's mix of fuels used to generate power. Because the marketplace relied on independent generation companies to sell power and on utilities to buy that power, PURPA also encouraged a new breed of power generator known alternatively as an independent power producer (IPP), non-utility generator (NUG), qualifying facility (QF) or various other names. These companies signed long-term contracts to supply power to utilities through contractually specified rates. Because IPPs generally relied on project financing from banks, they required long-term power sales agreements to support their financing. Often, the prices were fixed for the first 10 years or so of the contract, then were allowed to float with wholesale market prices. To further help these small power generators raise the money they needed to build their plants, some contracts were front-loaded, meaning that the utility paid a particularly high price for power during the early years of the power sales agreement and later paid a lower price.

The pricing for these long-term contracts was based on the best estimate at the time of future energy prices. Many of these contracts were signed during the 1980s—a time of rising energy prices—under the assumption that energy prices would continue to rise. As a result, many utilities signed contracts with generators to supply them power for more than 10 cents per kilowatt-hour (kWh). Numerous states enacted similar state versions of PURPA, sometimes known as mini-PURPA. In New York, a law once was in force that specified that all such contracts would be for at least 6 cents per kilowatt-hour. New Hampshire utilities signed contracts based on the utilities' own high-

cost generation, which was as much as 12 cents per kilowatt-hour or more. Figure 2 shows the penetration of non-utility generation. A comparison with figure 1 demonstrates the similarity between states with high levels of non-utility generation and states with high rates.

Figure 2. Nonutility Capacity by State as a Result of Each State's Total Capacity



Source: NCSL, 2001.

When wholesale electricity rates fell in the 1990s, these contracts appeared to be unwise investments. At the time they were signed, however—and given the expectation at the time of high energy prices—they appeared to be reasonable.

Contracts Utilities Signed with Other Utilities

In a few cases, utilities signed high-rate contracts for power supply with other utilities. Vermont utilities, for example, signed a contract with Hydro Quebec, a large Canadian utility, to buy hydroelectric power over a 30-year period. Like the contracts with non-utility generators, the contract with Hydro Quebec was set to reflect electricity prices that were expected to rise, and cost less than new generation options that were available at the time. When wholesale prices in the rest of the country and New

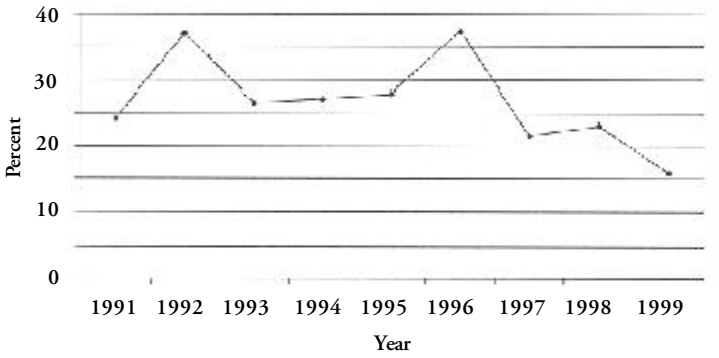
England began to fall in the late 1990s, Vermont's long-term contract with Hydro Quebec seemed overpriced.

Why Did Restructuring Appear Attractive?

By the early to mid-1990s, retail electricity rates had absorbed —and reflected—many of the high costs described in the previous section. By then, however, the wholesale electricity world had begun to change. With the success of many energy efficiency programs and a slower economy, it became clear that there was, in fact, more generation on-line in much of the country than appeared necessary. By the mid-1990s, reserve margins in some parts of the country reached 20 percent to as much as 25 percent and more, as figure 3 demonstrates for New York. Many analysts suggest that margins of approximately 15 percent are sufficient to maintain a reliable system. This oversupply put downward pressure on wholesale electricity prices, while retail prices stayed high.

Reserve margins represent a safety margin of generating capacity above what the industry would expect to need in an average year.

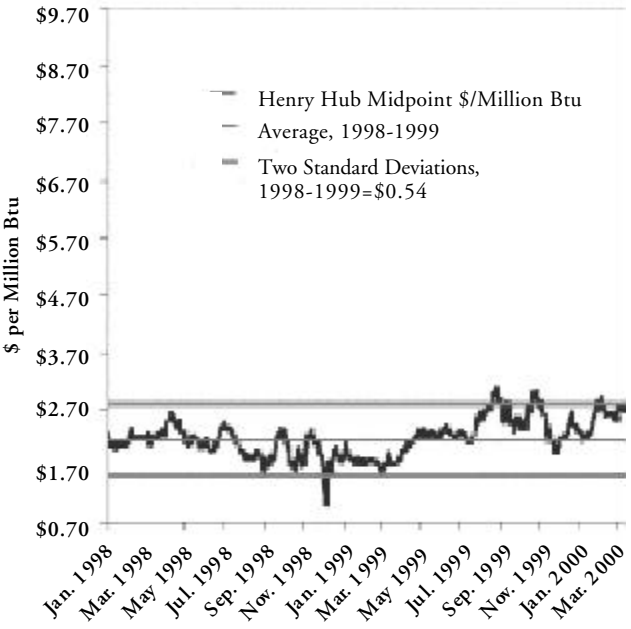
Figure 3. New York State Reserve Margins from the Late 1980s to the Early 1990s



Source: New York State Energy Research and Development Authority, 2001.

At the same time, natural gas prices were at historically low levels (figure 4). Since most of the new power generation facilities used natural gas, any new facility coming on line was likely to be able to produce power at rates far below the high retail costs embedded in the existing power system.

Figure 4. Natural Gas Prices Through March 2000



Source: *Gas Daily* and Reuters, 2000.

In some parts of the country, particularly in California, wholesale electricity prices fell still further because of particularly good hydroelectric power production in the Pacific Northwest. Power from the Pacific Northwest through the mid-1990s was available for less than 1 cent per kilowatt-hour (see figure 5).

Finally, new technologies such as efficient and relatively inexpensive natural gas turbines, combined with historically low

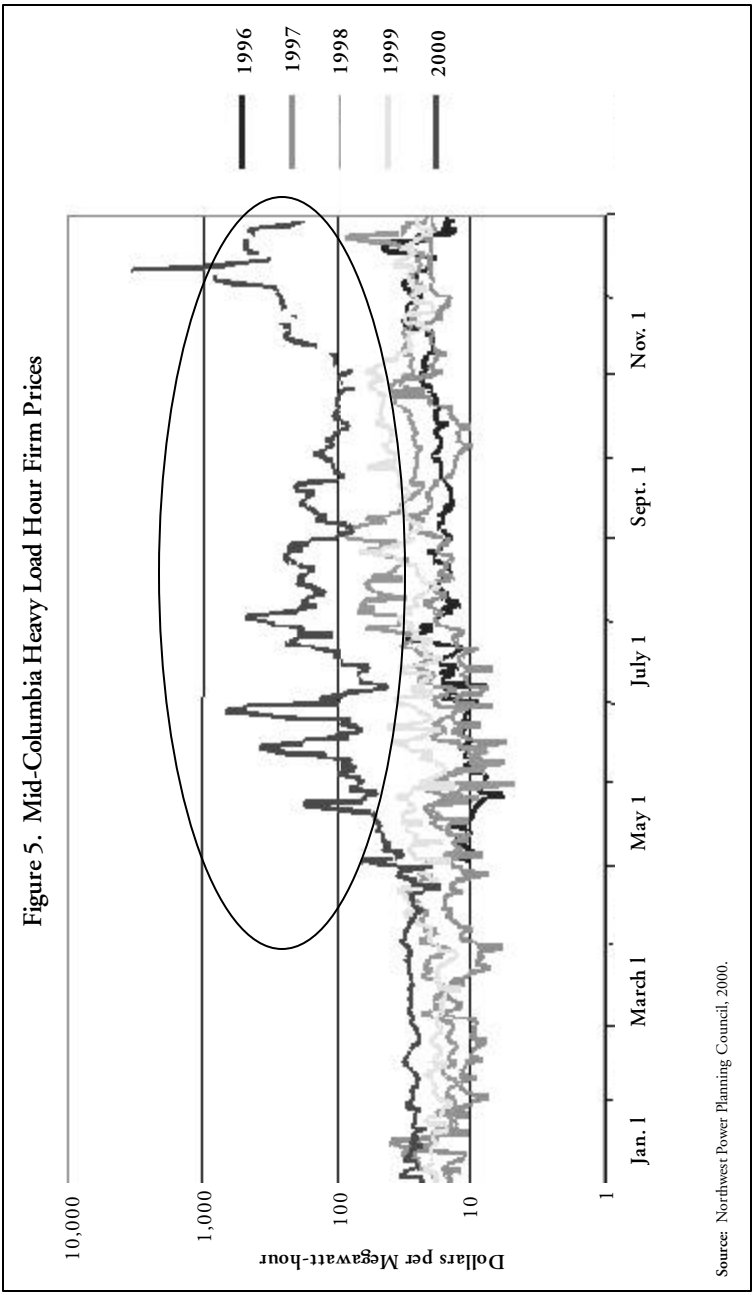


Figure 5. Mid-Columbia Heavy Load Hour Firm Prices

Source: Northwest Power Planning Council, 2000.

natural gas prices, were becoming available. Any new generator probably would be able to produce power more cheaply than the average of the existing generation system, at least in the states that traditionally had experienced high electricity prices.

When large consumers looked at low wholesale electricity prices and high retail prices, they began to seek ways to bypass the high retail rates and gain access to low-cost wholesale power. In some cases large power users even went "off the system" to build their own small power plants to serve their electrical needs. Restructuring the electric industry seemed to them to be a viable option (figure 6).

Figure 6. Six Reasons for Restructuring

1. High retail prices and low wholesale prices.
2. Oversupply of power on the market.
3. New, inexpensive gas generating technologies.
4. Low gas prices.
5. Laws and regulations that required customers to pay retail rates (that are an average of all the utilities' costs, including older, more expensive power plants) and forbade direct access to cheaper wholesale market prices.
6. The threat that some large customers would leave the system to generate power for their own use.

Did Advocates of Restructuring Get What They Wanted?

Advocates of restructuring wanted access to less expensive wholesale rates that reflected only marginal costs and to bypass retail rates that reflected the average of the utilities' costs. Their desire to gain access to those wholesale rates was driven by the fact that the short-term—or spot—wholesale rates were a great deal lower than the average wholesale prices built into the retail rates.

When most states enacted restructuring laws, they took what had been a "bundled" rate, and unbundled it. Customers previ-

ously saw only one charge on their electric bill that encompassed the cost of energy, the cost of transmitting the energy, the cost of delivering the energy, and a number of other utility activities such as energy efficiency, research and development, and renewable energy. Now the unbundled bill separates each of those activities into different cost components so customers can see the charge for each function.

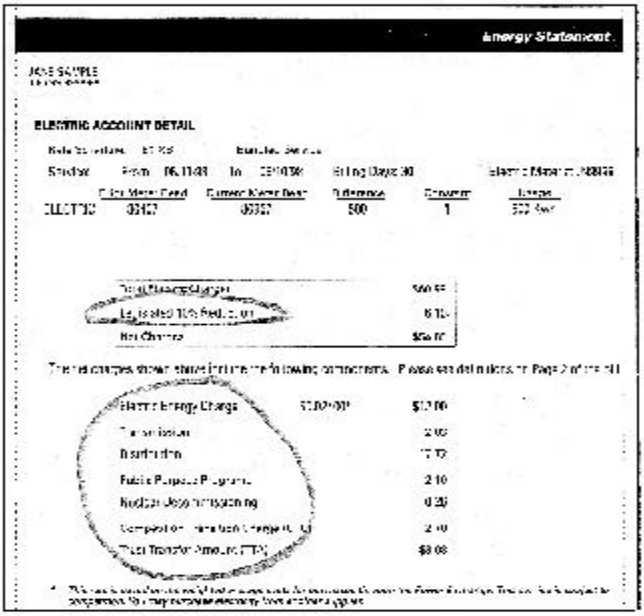
Another new component on many energy bills is a "competitive transition charge." This is a fee that every customer pays to help the utility recover the costs of its previous investments that it will be unable to recover in a competitive market. The transition charge represents the difference between the wholesale price—that so many large customers would have liked to pay—and the former retail rate. Recall that the retail rates generally reflect an average of all the utilities' costs, including their most expensive and their least expensive power plants. Wholesale rates at the time often reflected only the marginal and least expensive elements. Rather than remove the high-cost elements from rates and give customers an immediate break from the high costs, state regulation and legislation simply added those elements into the total rate under a new line item called the transition charge.

In a competitive market, a customer's bill would have looked like figure 7, with unbundled charges—including a transition charge—shown separately.

States have several reasons for using a transition charge. Utilities—that would have had to bear the brunt of the financial liability had states not imposed these transition charges—argued that regulators previously had approved all their major investments. In some cases, the regulators had actively encouraged the utilities to make many of the investments in power facilities. To not impose a transition charge and compensate the utilities for those investments would have been politically difficult and certainly subject to legal challenge. In New Hampshire, for instance, where the utilities disagreed with the level of

the transition charge that the commission set, a legal battle between the utility and the state lasted almost four years.

Figure 7. Sample Electric Bill

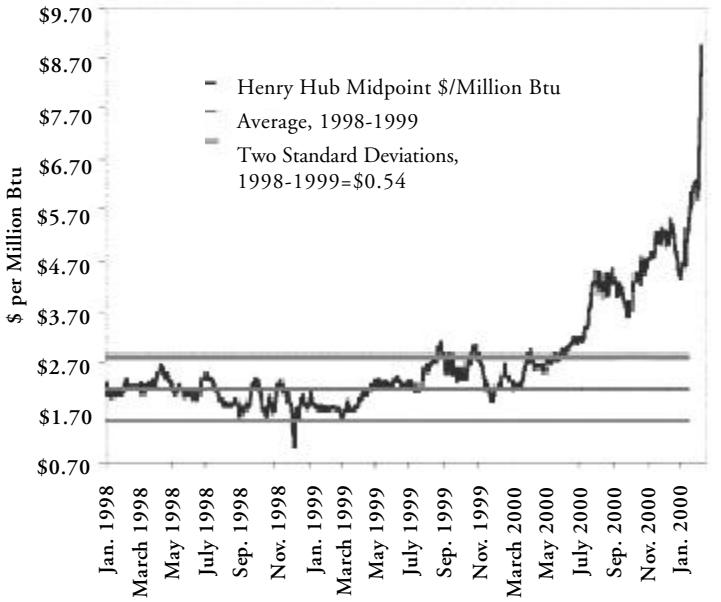


Source: NCSL, 2001.

As a result of these state decisions, the customers that wanted to bypass the higher retail prices and have access to the wholesale market prices did not get all that they wanted. They gained some access to wholesale power markets, but generally continued to pay the competition transition charge. For a time, the wholesale market seemed to perform well and enabled retail competition to deliver savings to customers who decided to buy from a non-utility competitor. The wholesale market conditions changed, however, between the early 1990s—when discussions about restructuring first began—and 2000.

By early 2001, capacity margins in most of the country had shrunk—in some places to dangerously low levels; in anticipation of retail competition, utilities had stopped building while the nonregulated power generation business was in its infancy. The price of natural gas had risen to more than triple its prior-year levels, driven by global energy markets, increased domestic demand and less than average storage of gas (figure 8). As a result, wholesale market prices were rising and becoming increasingly volatile. All these factors contributed to the early experiences with retail competition, described in the next chapter.

Figure 8. Natural Gas Prices: January 1998 to January 2000



Source: *Gas Daily* and Reuters, 2000.

THE EARLY EXPERIENCE

What Savings Did Restructuring Laws Deliver?

In most states, the transition to competition still is in its early stages. A few trends are becoming clear, however.

- The economics of the electricity business did not encourage small electricity customers to switch to new providers.

- In many cases, restructuring laws delivered savings through legislative fiat, not through competition.

- For a while, at least, some customers have received some savings that resulted from limited access to competitive markets, and larger customers appear to have garnered more savings than smaller customers. Because the industry remains in transition, it is difficult to ascertain at this point how much savings competitive markets ultimately will deliver to customers.

The Economics of the Electricity Business

Even outside the electricity business, analysts refer to a 5 percent rule, in which 5 percent of the customers buy 95 percent of an industry's output of—for example, beer, airplane tickets, telecommunications services, and so forth. Although the 5 percent figure may be neither precise nor accurate, the analogy holds in

the electricity business; the largest customers buy much of the electricity and account as a customer class for a disproportionate amount of the power companies' revenues. Residential and small commercial customers do not account for significant utility profits.

This basic fact about the electricity business has had major implications for the progress of retail competition. Three facts have emerged from states' early attempts to bring competition to the business.

1. In the electricity business, as in other similar businesses, the cost is high for securing each new customer.

2. Individual residential customers do not, as a rule, use a large amount of electricity compared to larger industrial customers; this means that individual residential customers may be less attractive prospects for power marketers than individual industrial customers.

3. The savings for residential customers usually are small.

The Cost of Securing Customers

Exact information that details how much it costs power marketers to convince new customers to buy electricity from them generally is proprietary to the power marketing companies. Such information about how much it costs to secure a new customer today, in an emerging market, also can be an unreliable predictor of how much it might cost in an established electricity market. That said, however, indications are that the cost of securing individual residential customers is high.

Interviews with power marketers reveal that costs to secure each customer range from $50 to $200 or more.

In the cellular telephone market—a somewhat analogous industry—the *New York Times* reports that the cost of marketing to

cellular telephone customers is approximately $300 per customer. The *New York Times* also reports that cell phone companies now place a high priority on keeping the customers they have and not losing them to competitors.

The costs to secure each customer would require power marketers to earn enough profit on each kilowatt-hour they sell to make a reasonable return on their investments. Since most individual residential customers do not use a great deal of electricity, however, the returns on the investment in securing each customer are small.

The Return from Serving Individual Residential Customers

Marketers report to NCSL that a typical profit margin per kilowatt-hour for most residential customers might be 1 cent. In other words, a 150,000 kilowatt-hour per month user would yield a monthly profit of $1,500 per month (less with a lower profit margin). An 800 kilowatt-hour per month user would yield a profit of $8 per month. Most residential customers fall into the lower range; many industrial customers will yield a much higher profit.

The Savings for Residential Customers

Finally, the interest on the part of most residential customers in switching to new providers generally has been lackluster. In part, this is because their potential for savings has been fairly low (figure 9).

Industrial customers and other large electricity users, on the other hand have more potential for savings—and more earnings potential for marketers.

Figure 9. Savings for Residential Customers

A Typical Residential Customer's Bill: $70.00
(**Source**: Energy Information Administration)

40 Percent of Typical Bill Is for Power Delivery $28.00

Portion of Bill Subject to Competition $42.00

Typical Savings Are from 2 percent to 10 percent .....
$.84 to $4.20 savings per month

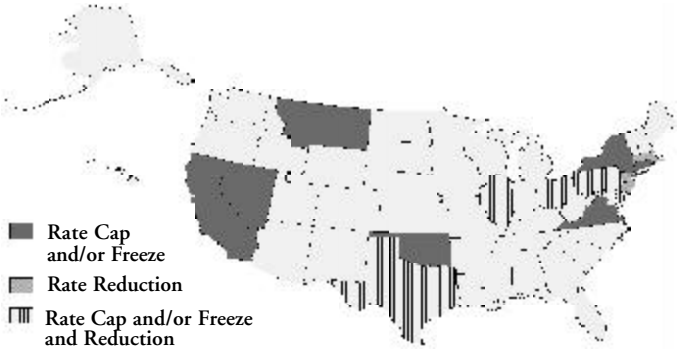
Source: NCSL, 2001.

Restructuring Laws Delivered Immediate Savings Through Legislative Fiat, Not Through Competition

Many restructuring laws delivered a set of mandated rate reductions, rate caps and rate freezes. As suggested below, many of these rate reductions were simply legislative means to achieve—in the very near term—what ultimately would have been achieved under the ordinary regulatory process. Savings that resulted directly from competition would have been an additional benefit for consumers. Many of the early rate cuts that occurred came about not because of competition but because of legislation. California's 10 percent rate reduction is an example of this. Figure 10 and appendix A describe where those rate caps or freezes were in place.

California mandated a 10 percent reduction in electricity rates for all residential customers. This rate reduction became effective on Jan. 1, 1998. The California Public Utilities Commission delayed the start of competition until March 31 of that year, but the rate reduction appeared on customers' bills in January. The rate reduction was not the result of competition, but, rather, the result of some clever financing arrangements and good luck.

Figure 10. Legislated Rate Reductions by State



Source: NCSL, 2001.

Approximately one-third of the reduction was the result of a complex process known as securitization, which allowed the state to sell bonds on behalf of the utilities and apply the proceeds of bond sales to the utilities' stranded costs. Since a state-sanctioned revenue stream—the competition transition charge discussed previously—served as the underlying revenue stream to pay off the bonds, the bonds received a high credit rating and benefited from a low interest rate. That lower interest rate was one part of the calculus that the state used to reduce overall electricity rates.

Stranded costs represent costs that utilities ordinarily would have been reimbursed through rates, but that no longer would be reimbursed in a competitive system .

The remainder of the 10 percent rate reduction came from some utility costs that the utilities, by good fortune, no longer would have to pay. The utilities had signed long-term contracts with independent energy producers that generally were set at high rates during the beginning of the contract, and then would float with market prices after 10 years. As it happened, many of those contracts were signed in the late 1980s and were approaching what was known as their "standard offer cliff." Simply put, the utilities' costs already were set to decline considerably. In their next rate case (the process through which the utility com-

mission sets rates for the utility), the utilities' rates would have been adjusted downward to account for this decrease in their costs.

Another source of funds for the legislated rate reductions in California and elsewhere came from asset sales that were far above book value. Power plants—particularly those located near large population centers, gas lines and electricity transmission lines—sold for more than most analysts expected. In some cases, they sold for double or more the value at which they were listed on the companies' accounting books. In many cases, the gains on these asset sales flowed to consumers to the extent that regulators wanted them to, and reduced the amount that consumers paid as a transition cost charge.

Massachusetts also reduced rates by 10 percent. Again, however, its rate reduction was not the direct result of competition. Massachusetts' regulators set the price for power—known as the standard offer price—at 2.8 cents per kilowatt-hour that initially was below the wholesale price of 3.5 cents per kilowatt-hour. The utilities kept track of any losses from selling power at this low rate, and subsequently would recover the losses—through a standard cost charge—from the same customers who received the discount.

In all these cases, however, customers did receive an immediate benefit from the law that was intended to establish competition. However, the benefit did not flow from competition. In these cases, too, the rate charged to customers that did not switch was an important factor in determining how many customers ultimately switched providers.

The Overall Trend Has Been to Cap or Freeze Retail Rates and to Leave Wholesale Power Rates to Fluctuate

The advantage of the rate cap or freeze is that it protects customers—especially smaller customers that may not have the resources to monitor electricity prices, the ability to reduce their electricity use or the means to search out alternative sources of supply—from rising energy prices. It further can protect customers that use relatively little power and that may be less attractive customers for retail marketers. Consumer advocates—who typically advocate for residential and smaller consumers—feel that rate freezes and caps are an essential component of a competitive market, at least until well-functioning competition can be shown to be effective.

Others, however, consider rate freezes and caps for retail customers an element of "partial deregulation," which allows the real market price of electricity to fluctuate but does not allow those market prices to flow through to retail customers. This situation was most marked in California, where wholesale electricity prices skyrocketed to many times their prior-year levels; retail prices, however, were not allowed to increase. In the end, utilities lost money on every kilowatt-hour they sold, and one—Pacific Gas & Electric—declared bankruptcy.

Critics of the regulated rate freezes and caps argue that electricity supply would have been less strained had customers' rates reflected the actual wholesale cost of electricity. Higher prices might have convinced people to reduce their electricity usage or to seek alternative sources of electricity, which would eventually have put downward pressure on electricity prices. They argue that this would have further helped to develop the competitive market that, in California and elsewhere, had been slow to develop.

As a consequence, some argue that the best way to achieve a relationship between supply and demand would be to install real-time meters in every customer's home and business, thus giving them the ability to shift their usage to off-peak hours should electricity prices become volatile. It is not yet clear whether real-time meters are cost effective for all classes of customers in all situations.

Real-time meters enable customers to see—and power companies to charge for—the cost of power as it changes from minute to minute. Most customers currently pay an average electricity rate.

Consumer advocates argue that this approach, particularly if combined with lifting of rate caps or freezes, would leave many consumers in a difficult financial situation. Many small consumers are unlikely to switch providers and many are equally unlikely to be able to adjust their habits quickly enough to respond to a one-day notice of an upcoming price spike. How much could the average low-income customer whose main energy usage comes from lighting and refrigeration adjust his or her usage?

Some Customers Received Some Savings in Some Markets for a While

Although wholesale electricity prices remained low in the late 1990s, some particularly large electricity customers were able to save money through deals they struck with power marketers. Most residential and small commercial customers were not directly exposed to retail competition. As a result, little empirical evidence is available to suggest how residential customers would have fared had retail competition been successful. The following sections address the experiences of residential and small commercial customers and larger customers, in turn.

With a few exceptions, retail markets nationwide have been quiet for most residential customers, with few marketers selling products and few small consumers buying. This means that only a

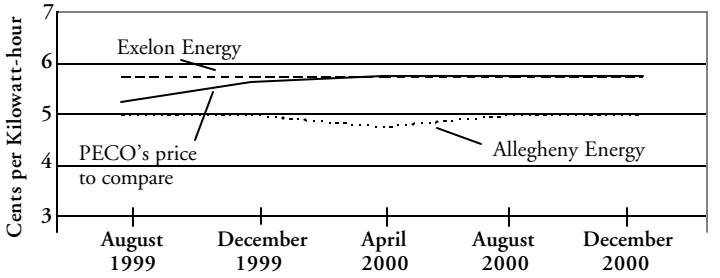
very few customers have sampled a competitive product. Paradoxically, one of the most important factors in how quickly deregulation takes hold is how regulators set the price for customers that do not choose a competitive provider. This regulated rate, if set high, allows competitors to beat the rate and still earn a profit. If set low, it often makes it difficult for competitors to both beat the price and earn a profit. This rate is alternately called a "default price," a "price to compare" or a "price to beat." The following section illustrates the importance of this regulated price in the "deregulated" market for three states.

Residential and Small Commercial Customers

Pennsylvania

In Pennsylvania, the price to compare in Philadelphia for customers of PECO was set at just above 5.5 cents per kilowatt-hour. For a time, at least, competitors could better that price by securing energy in wholesale markets and selling at a slight profit. In the PECO territory, for instance, approximately one-quarter to one-third of all customers had switched to a new provider and would have saved 1 cent to 2 cents per kilowatt-hour through these purchases. Some critics of Pennsylvania's model argue that the price to compare was set too high, and that it does not represent the "real" rate but, instead, an artificially inflated rate to encourage competition. Figure 11 illustrates the difference between the regulated "price to compare" in PECO territory and competitors' prices through mid-2000. Table 1 illustrates the percentage of customers that changed to one of PECO's competitors in the same time frame. The percentage of customers that switched providers far exceeds that of any other state.

Figure 11. PECO and Competitors' Rates



Source: NCSL, 2001.

Table 1. PECO Customers Switching as of October 2000

Residential	Commercial
15.18 percent	32.13 percent

Source: Pennsylvania Office of Consumer Advocate, 2001.

California

An example from California shows a pattern of customers choosing a premium product instead of a price-discounted product. In the first year or so of the competitive market, Californians flocked to "green" products—electricity products that were produced from wind, geothermal, solar or some other renewable resource. In general, however, these were more expensive than the non-green product offered through the utility. Subsequently, the California Energy Commission offered a subsidy for green products that lowered their cost to the equivalent of the non-green product offered through the utility. With this new price, almost 100 percent of the relatively small number of residential customers who chose a competitive power supplier chose the green product. Aside from green product offerings, few marketers could compete with the utility's regulated, capped retail rates in California. As a result, competitive power suppliers could not offer any additional savings to residential customers. Table 2 illustrates that the general pattern in California reflected the rest

of the country; larger customers tended to take advantage of competitive offerings. Most residential customers remained with their original utility supplier.

Table 2. California Customers Switching as of October 2000

Switches	Residential	Commercial
Customer	1.7 percent	7.5 percent
Load	2 percent	16.1 percent

Source: California Public Utilities Commission, 2000.

Massachusetts

Massachusetts joined most of the other New England states in passing a law to open its power markets to retail competition. Like most other states, it delegated many of the details of the implementation to its regulatory body, the Department of Telecommunications and Energy (DTE). One of the DTE's first tasks was to set the standard offer price for power—or the price that any customer that did not switch to a new provider would pay. The DTE initially set this price at a level somewhat below wholesale electricity prices in the New England market as part of an effort to deliver immediate savings to Massachusetts electricity customers. Over time, the DTE has refined this rate for the non-switching customer so that it has increased, varies by customer class, and varies within individual utility service areas. Nonetheless, the initial rate and its subsequent revisions have not set in motion a dramatic shift to alternative electricity providers (table 3).

Table 3. Massachusetts Customers Switching as of August 2001

Switches	Residential	Commercial/ Industrial
Customers	0.05 percent	0.85 percent
Load	0.067 percent	12.16 percent

Source: Massachusetts Department of Telecommunications and Energy, 2000.

The exception to this pattern has been buyers' groups, or aggregated groups of customers, that together solicit bids to serve their electricity needs. For instance, in the nation's largest-ever energy aggregation contract to date, Green Mountain Energy was selected to serve an aggregated group of more than 400,000 electricity customers in Ohio. In Rhode Island, the League of Cities and Towns negotiated a long-term contract to serve the electricity needs of its members.

It is still too early to tell how much savings the competitive market will deliver to residential and small commercial customers. Some critics argue that not only is it too early, but that considerable time will elapse before most residential customers benefit from competition.

Commercial and Industrial Customers

A far larger proportion of commercial and industrial customers have switched to alternative providers throughout the United States than have small commercial and residential customers (figures 11, 12 and 13 above illustrate this trend). This indicates that these customers were receiving enough savings by shopping for power to make it worth their time and effort to make the switch.

Information about the contracts set up between the large customers and electricity suppliers (known as bilateral contracts) is difficult to obtain, so little real information is available about industrial customers' savings.

Lawrence Berkeley National Laboratory in California gathered anecdotal evidence of large commercial and industrial customers' savings attributed to purchasing electricity in competitive markets. Their study, based on press releases and interviews with energy managers in large companies, indicated that, during the late 1990s, most large customers estimated they were saving between 1 percent and 5 percent (in California), between

5 percent and 10 percent or more (in Pennsylvania), and up to 10 percent (in areas such as Illinois and Massachusetts) (table 4).

Table 4. Industrial Customers Switching as of Fall 2000

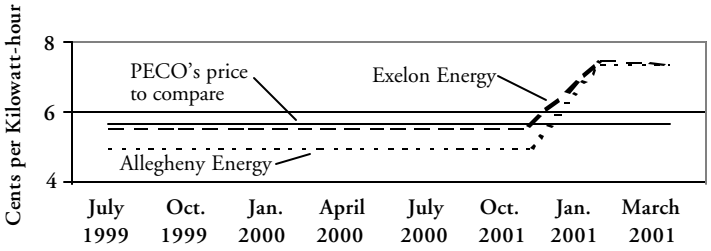
Switches	California	Pennsylvania	Massachusetts
Customers	12.8 percent	45.37 percent	7.2 percent
Load (kWh)	27.4 percent	40.63 percent	12.4 percent

Sources: California Public Utilities Commission, Pennsylvania Office of Consumer Advocate, Massachusetts Department of Telecommunication and Energy.

Retail prices for the largest electricity consumers appear to be rising, as are the rates for residential customers. As a result, even in states such as Pennsylvania—where many customers switched providers at first—some of those large customers returned to their original providers when marketers' prices began to exceed the regulated price to compare.

Even outside California's troubled experience with its electricity markets, retail markets for residential customers appear to be developing slowly. In Pennsylvania, where retail markets originally yielded some savings for residential customers who switched, wholesale prices later moved upward and customers began to switch back to the capped utility price to compare. The price to compare remains steady, while the competitors' prices continue to rise. This phenomenon of rising prices is due in large part to rising wholesale prices for electricity, which result mostly from increasing natural gas prices. Figure 12, which shows the situation in the PECO service territory, illustrates this situation. The capped retail rate that previously had appeared high enough to encourage competition now is lower than competitors' prices. As a result, customers started to switch back to their original utility provider at the regulated rate.

Figure 12. PECO and Competitors' Rates Through Spring 2001



Source: NCSL, 2001.

Table 5 further indicates that it was often the largest customers among the industrial class that switched in the greatest numbers.

Table 5. Percent of PECO Customers Switching as of July 2001

Residential	Commercial	Industrial
12.5 percent*	5.0 percent	4.7 percent
Load Switching		
Residential	**Commercial**	**Industrial**
13.7 percent	6.0 percent	7.0 percent

* The right to serve an additional 16.4 percent of PECO customers was assigned to a competitive producer through a 2001 competitive auction.

Source: California Public Utilities Commission, 2000.

The Road Ahead

The potential for any kind of structural or legal changes to the electric industry is preconditioned on wholesale power markets that function well. In other words, without sufficient generation, adequate means to deliver power through transmission lines, and an institutional structure to support power generation and transmission, retail market deregulation stands little chance of providing consumers with stable and affordable electricity rates.

Factors to Consider

Policymakers will want to consider a number of factors that are new to the electric industry, including the following.

Current Lack of Coordinated Planning or Oversight of Power Markets

Many state or regional efforts to at least monitor power markets fell by the wayside during the mid-1990s. Beginning in late 2000, more than a dozen states began concerted efforts to design some kind of state energy policy through either a legislative or executive branch initiative. Many observers suggest that some type of coordinated body could monitor the power market and make recommendations about where new transmission system investments should be made, what upgrades to the generation system should be made, and what role distributed resources and

energy efficiency should have in decisions about new generation and new transmission.

Dependence on Natural Gas

Almost every major new power generating facility in the country will use natural gas—the exceptions being a small number of coal- and wind-powered facilities. The new risks to the electric system will increasingly come from the natural gas market. How volatile will natural gas prices be? How much storage capacity for natural gas is in place to insulate companies and consumers from natural gas price fluctuations? When supplies of natural gas run short during a cold winter, will electricity generators have the flexibility to switch to other fuels if the available gas must be used for home heating? How robust is the current delivery system for natural gas?

Market Power

In newly competitive power markets, some observers express concern that a small number of companies could manipulate prices, or that they could—at certain times of day or year—charge prices significantly higher than a truly competitive market or a regulated market would allow. The assertions that such manipulation or overcharging has actually happened are difficult to substantiate, although many organizations are examining this possibility.

State policymakers will increasingly want to pay attention to market power concerns, even though it may mean finding ways to influence regional organizations and regional power markets. Electric power markets have been regional markets for a long time; however, the pace of the transition to regional markets will require more cooperation among states. One area that state policymakers may wish to consider is how the regional organizations that manage the power system can use a variety of different resources to meet electric power system needs, including not

only large generators but also small, distributed generators and customers' energy efficiency measures.

Transmission and Generation Siting

For the moment, states have full control over siting generation and transmission facilities. As power markets rapidly become more regional, these facilities become more difficult to site. Why should Kentucky residents bear the burden of power plants built to serve load in Ohio, for instance? Why should transmission lines be built through one state to deliver power to serve another? Although there are legitimate answers to these questions, they nonetheless arise in multiple situations.

Some of the issues that states may need to address also arose in California during 2000-2001. (Although the focus of this report is not on California, another NCSL publication—*California's Power Crisis: What Happened? What Can We Learn?*—discusses these factors in detail.)

Lessons from California

Many of the problems California encountered in 2000 and 2001 resulted from difficulties with its wholesale power market. These, in turn, created problems for the retail power market. A few of the most prominent lessons from California's experience follow.

1. California did not build sufficient generation to meet its needs and relied on imports from other states that also had built little new generation. In a regulated market, such a tight supply and demand balance may result in rolling brownouts and blackouts. In California's competitive market, it also yielded some price volatility and rate increases that thus far had not been seen in electricity markets.

   California's problems were the consequence not only of a shortage of summer power supply, but also of an unmanaged

winter power supply. Blackouts occurred in California during the winter months when the apparent supply of electricity should have been more then adequate. However, many power plants were off line for maintenance or did not sell into the market for other reasons. It remains a matter of debate as to how and why winter shortages occurred in California, but it is clear that no combination of market participants or government agencies under the current market structure had the full obligation, authority or ability to keep the lights on.

2. California's wholesale and retail markets were disconnected, such that price swings due to supply constrictions and increasing natural gas prices in the wholesale market were not reflected on retail customers' electricity bills. As a result, demand was unresponsive to the gyrations in the wholesale market. Some critics argued that it was unfair to make consumers respond to market prices. Nonetheless, it was a reality that the California electric system—both the utilities and the state—paid prices for power that they could not recover in retail rates.

3. The utilities remained the primary suppliers for California's electricity customers, but the utilities were restricted in how they could participate in the wholesale market. For instance, although most wholesale buyers outside California tried to secure power through a mixture of long-term contracts, some short-term contracts and some of their own generation, California's utilities could, for the most part, purchase power only on the spot market. This lack of flexibility hampered the functioning of the wholesale market.

The **spot market** is an instantaneous power market in which electricity trades for immediate sale. Spot markets tend to be more volatile than long-term or forward markets.

4. To some degree, a lack of adequate transmission capacity worsened California's problems. Although enough capacity

was available to move power into the state, transmission constraints kept power from moving between the northern and southern parts of the state and reduced the efficiency of the wholesale market. Transmission constraints can be worse in some other areas of the country and are the subject of heated debate.

5. It is difficult to prove that any single company has exercised any kind of market power or price manipulation, although many parties have tried to assess blame on one another. What is clear is that, although demand for power rose to some extent in California, prices rose at a far greater rate. No conclusions are drawn here about market power, but it is clear that, to some degree, the wholesale market in California was producing unexpected results.

What Can State Legislators Control?

State policymakers face a dilemma with electric industry markets; they are the first line of defense—the first people that the public contacts—when things go awry. Yet, state policymakers do not exert control over every facet of the market. State policymakers will want to be well aware of what they do and do not control, especially since a concerted public policy effort has begun to move toward less direct regulation and more competition. State policymakers can control some elements of electricity markets but have little direct control over other elements of the markets. (Another NCSL document, *The Electric Industry: State and Federal Jurisdiction,* discusses in more detail what is under state and federal control.)

In general, state policymakers can look to the following items that are under their control—and others that are not under their direct control (table 6). This division between what is and what is not under the direct control of states may help state policymakers to think of policies that they may pursue in their own states to influence the course of the electric industry. Alaska,

Hawaii and part of Texas are subject to different rules and generally are less subject to federal authority. State policymakers may be able to consider not only what they do and do not control directly, but also how they may use what they do control to influence the areas that they do not control.

Table 6. Elements of Electricity Markets

Under State Control or Influence	Not Under Direct State Control
• Retail electricity rates	• Wholesale electricity rates and prices
• Retail electricity usage (through efficiency or pricing programs)	• Wholesale natural gas prices
• Initial decision about whether to allow retail competition	• Formation of regional electricity entitites (often called regional transmission organizations)
• Power plant siting	• Electric rates and policies of federal utilities
• Power line siting	• Transmission rates and policies
• State tax policy related to generation, efficiency, renewable energy, and transmission and distribution systems	• Granting rights for a generator to sell power at "market based rates"

Source: NCSL, 2001.

Many of the problems with retail competition link directly to difficulties in wholesale power markets. These problems include a lack of adequate generation or transmission capacity and a still-developing set of rules governing who builds and pays for each of these. The federal government controls the price and policies for transmission lines and, in states that have restructured, can exercise a general authority over pricing and policies for generation.

States have more direct authority over whether a power plant or line is built, through siting authority. They also have influence over how much power consumers use, through energy efficiency programs. Through these authorities, states actually wield considerable influence over how well the wholesale markets work.

Linking Retail Demand with Wholesale Supply

One element of state authority that warrants considerable attention and discussion is the idea of creating a link between electricity demand and wholesale electricity supply and prices. Most customers do not adjust their electricity usage—as they might, for instance, for gasoline—if wholesale supplies constrict or prices increase. Indeed, it may not be desirable for all customers to feel the effects of wholesale price fluctuations.

A number of policy measures, some of which are under direct control of the states, may offer a way to allow at least some customers to adjust their demand for electricity when wholesale prices and supplies tighten. Some analysts refer to this as bringing a "demand response" to the market. One method of bringing some element of demand responsiveness into the power market is to install a special meter on customers' premises. When wholesale prices increase, the meter reflects increases in real time.

Instead of installing real-time meters on every business and home at great cost, another alternative would be to target a few customers for demand reduction and to compensate them for reducing their power demand. This could be effective because price spikes affect only a small number of hours during the year and because small reductions in demand—often as little as 5 percent of total demand during a few hours—can significantly reduce the strain on the power system.

Figure 13 shows power usage in California during summer 2000. Note the swiftly rising prices and usage during so-called "needle peak" periods. Needle peaks represent the brief periods when prices spike up to very high levels. Targeted methods of demand reduction can shave these needle peaks considerably.

Most analysts suggest that very small decreases in demand can produce large cost savings. Two methods to achieve this are detailed below.

Figure 13. PX Day-Ahead Electricity Prices

PX SP15 zonal prices
SCE and SDG&E purchase day-ahead electricity at the SP15 price

Source: California Power Exchange, 2000.

- ***Demand Bidding.*** Customers or their agents would be able to bid into the wholesale market to reduce their demand for power at certain times of day. These bids would compete on a price basis against bids to supply power during the same time. The market would decide which among the portfolio of demand and supply bids would be accepted.

- ***Demand Participation.*** A customer could set up a contract with its utility or electricity provider through which, when the electric system requires additional capacity, the customer would reduce usage. The utility then could sell these kilowatt-hours on the open market at the available price. The customer and the utility would split the proceeds of that sale according to some prearranged formula.

Another example comes from Washington, D.C., and Maryland. Customers receive a small discount on their electric bill and give their utility the right to install a small device on their air conditioner. The device, when activated, allows the utility to turn off the customer's air conditioner for a few minutes each hour during high-use periods. The short time that the air conditioner is turned off does not affect the customer's comfort in most cases, and the combination of many air conditioners being turned off helps the electric system meet its demand for power.

Some fundamental changes in the electric industry structure have occurred that alter the traditional role of the regulated electric utility. Increased opportunities for specialization in areas like power generation ownership and operation, wholesale electricity market trading, transmission system ownership, transmission system management, distribution system management, billing, and more led many utility companies to divest or out-source traditional electric company functions. One specialization of some note is ownership of nuclear units. Six companies have made clear their intent to acquire operating nuclear units from other, less committed, owners and to improve overall performance.

An outcome of this trend is that in many parts of the United States no one company can solve a public policy problem in the utility sector. A comprehensive view is beneficial in deciding which from among several system investments can best address growth. Power lines, large generation, small generation and efficiency all interact to address power system needs. Yet, these investments are, in many cases, controlled by different companies. With a fragmented industry, some states now are examining ways to develop a policy and planning process that integrates these many activities.

Conclusions

The early years of restructuring have produced a mixture of results and these results reflect a market in transition. It appears fair to say that competition *could* produce a broader array of innovations and products than regulation, and that it could do so while also keeping electricity costs stable and affordable for consumers. To date, most of the benefits of retail competition for electricity remain theoretical. Achieving the benefits probably will be more difficult than expected by even the strongest advocates of retail competition. It also seems apparent that it will be difficult to achieve the conditions under which retail competition could produce this broad array of products at lower cost. Appendix B contains some questions that state policymakers may wish to consider as they determine a path for their states.

Many retail competition advocates promoted the idea of retail electric competition with the promise that that it would lower rates for everyone. That has, however, proved difficult to deliver, not so much because retail competition could not ultimately make the electric system more efficient, but because prices under competition remain subject to many of the same forces that affect prices under regulation. When natural gas prices increased in 2000, wholesale electricity prices increased as well. Retail markets, without the benefits of well-functioning wholesale markets, proved less efficient than many had hoped and made it

difficult to achieve real savings from retail market competition. The question that perhaps remains unanswered is not whether retail competition will lower rates for all consumers, but whether competition will make electricity rates lower than they otherwise would have been under regulation. The answer to that question remains elusive.

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation

State	Cap	Freeze	Reduction
Arizona	✔		10%
California	✔		20% small customers
Connecticut	✔		
Delaware	✔	Transition period	7.5% residential
Illinois		1996 rates through 2004 nonresidential	20% residential (ComEd, Ill. Power); 5% residential (CILCO)
Massachusetts	✔		10%-15%
Maryland	✔		3%-7.5% residential
Montana	✔		
Nevada	✔		
New Jersey	✔		10%

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation (continued)

State	Cap	Freeze	Reduction
New York	✔		
ConEd (NY)			25% immediate rate decrease for large industrial customers, to remain fixed for five years. 10% rate decrease for all other customers, phased in over five years.
Central Hudson Gas & Electric (NY)			Base electric rates will be frozen at 1993 levels through June 30, 2001, for all customers. (Base rates do not reflect changes in fuel costs.) 5% per year rate reductions for large industrial customers; customers may choose to continue to buy electricity from Central Hudson and receive a discount until mid-2001, or they may select an energy services company (ESCO) whose price will be determined by the market.

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation (continued)

State	Cap	Freeze	Reduction
Orange and Rockland (NY)	O&R's rates for the sale and delivery of electricity will be set by the PSC until May 1, 1999. The PSC will continue to regulate delivery rates after that time. Prices for the generation portion of electricity after May 1, 1999, will be set by the competitive market.		1995-1996: 4% average residential, 4%-14% commercial and industrial 1997: 1% residential 1998: 1% additional for residential 1997: 8.5% large industrial ***For customers that participate in PowerPick by choosing to buy electricity from an energy services company (ESCO):*** Large industrial customers may have additional rate benefits in the range of 3.5% Smaller customers may have additional rate benefits in the range of 2%
Rochester (NY)	RG&E rates for sale and delivery of electricity are set until mid-2002. The PSC will regulate the utility's rates for delivery after 2002. Prices for electricity generation after 2002 will be determined by the competitive market.		7.5% residential, small commercial 8% other commercial, most industiral 11.2% large industrial All phased in over five years 5% for five years, for industrial and large commercial users with more than 500 kW of load capacity

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation (continued)

State	Cap	Freeze	Reduction
New York State Electicity and Gas (NY)	NYSEG's rates for both supply and delivery of electricity are capped until 2003. The PSC will continue to regulate rates for delivery after 2003. Prices for electricity for all customers after 2003 will be set by the competitive market. In a settlement approved by the PSC, NYSEG has agreed to forego two previously authorized rate increases, saving customers more than $522 million through 2002.	Residential and small commercial/industrial customers rates will be frozen at the current levels for two years.	1% residential in third year. 5% residential total deduction by fifth year. For industrial and commercial customers that are not eligible for the five annual 5 percent rate decreases, the plan provides financial incentives for load growth, thereby encouraging business expansion.

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation (continued)

State	Cap	Freeze	Reduction
Niagara Mohawk (NY)	Niagara Mohawk rates for electricity and its delivery are set until Sept. 1, 2001. In 2001 and 2002, Niagara Mohawk may request limited rate increases, but the PSC must review and approve any request.		4.3% overall average. 3.2% average for residential and commercial over three years. 13% industiral
Ohio	✔	Five years	5% residential
Oklahoma	✔		
Pennsylvania	✔		Allegheny 17% for Duquesne customers 2.5% for GPU (Met-Ed) customers 3.0% for GPU (Penelec) customers 8% all cusomers 1999 6% for 2000 PECO customers 4% for PA Power & Light customers 2.5% West Penn

Appendix A. Rate Caps, Freezes and Reductions Established in State Electric Industry Restructuring Legislation (continued)

State	Cap	Freeze	Reduction
Rhode Island	✔		
Texas		Three years	6% residential, small commerical
West Virginia	✔		

Source: NCSL, 2001.

Appendix B. Suggested Questions for Legislatures to Consider Regarding Electric Industry Restructuring

What Is the Goal of Restructuring in Your State?

1. *Immediate Reductions in Electric Rates for All Customers.*

    a. How will you accomplish those rate reductions? If through legislative or regulatory order, would these rate reductions have occurred under regulation anyway?
    b. Who will pay for the immediate rate reduction, if it is offered?

2. *Competition and switching among residential and small commercial customers.*

    a. What prices will be charged to customers who do not switch and what enticements will be offered to encourage people to switch?

b. If residential customers do not represent big profit-centers for power marketers, how will you attempt to make the residential market more attractive for marketers?
c. How long a transition period do you intend to provide?
d. How will you protect those customers who have not switched providers during the transition?

3. *Protection of residential and small commercial customers while allowing or encouraging larger customers to switch providers.*

a. How will the rates for the non-choosing customers be determined?
b. What products will the non-choosing customers be offered, assuming some type of regulation of residential markets continues?
c. How will rates for the non-choosing—but eligible-to-choose large customers—be determined?

4. *Promotion of environmental benefits through retail sales of "green" electricity.*

a. Will you require some type of standard "green" product information disclosure by providers?

5. *Long-term efficiencies but a slow transition to a market in which significant numbers of customers have switched.*

a. How long will your transition period be?
b. What will be your measure of success during the transition?
c. How will you continue to regulate the business while it is in the transition to competition?

What Is the State of Wholesale Electricity Markets in Your State and Your Region?

1. Is there, in your state and the region:

a. Adequate generation capacity?
b. Adequate transmission capacity?
c. A clearly defined set of rules governing generation planning, transmission access, transmission planning, transmission expenditures and investments?
d. An effective demand response program in place that ties demand in the retail market in some way to conditions in the wholesale power market?

2. To what risks is your state exposed from the fuels that feed the generation mix in the state and region?

a. If gas will serve as a feedstock for new generation, is there adequate pipeline capacity into the region?
b. Which fuels currently, and in the future, determine the price of generation in the region? How will the price of natural gas, coal, oil or other fuels bear on electricity prices in your state?

Notes

1. Nuclear facilities have, in recent years, been operating much more reliably and for a greater percentage of the hours in a year, according to an article in *Global Energy Business 2*, no. 6, November/December 2000.

2. William Golove, Rodrigo Prudencio, Ryan Wiser and Charles Goldman, *Electricity Restructuring and Value-Added Services: Beyond the Hype* (Lawrence Berkeley National Laboratory, August 2000).

Best Practices Guide:

Implementing Power Sector Reform

Prepared for:

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Contents

Acronyms

CALPX	California Power Exchange
CC	Combined Cycle
CO_2	Carbon Dioxide
CPI	Consumer Price Index
CT	Combustion Turbine
DOE	Department of Energy
DSM	Demand Side Management
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 1992
EWG	Exempt Wholesale Generator
FAC	Fuel Adjustment Clause
FERC	Federal Energy Regulatory Commission
GENCO	Generating Company
IOU	Investor Owned Utility
IPP	Independent Power Producer
IRP	Integrated Resource Planning
ISO	Independent System Operator
kW	Kilowatt
kWh	Kilowatt-hour
LRMC	Long Run Marginal Cost
MC	Marginal Cost
MR	Marginal Revenue
MWh	Megawatt-hour
NERC	North American Electric Reliability Council
NGO	Non-governmental Organization
NOPR	Notice of Proposed Regulation
NOx	Nitrous Oxide
PBR	Performance Based Regulation
PJM	The Pennsylvania-New Jersey-Maryland Power Pool
POOLCO	Power Pool Company
PPA	Power Purchase Agreement
PUHCA	Public Utility Holding Company Act
PURPA	Public Utilities Regulatory Policies Act of 1978
RFP	Request for Proposals
ROE	Return on Equity
R&D	Research and Development
RR	Revenue Requirement
SO_2	Sulfur Dioxide
SRMC	Short Run Marginal Cost
T&D	Transmission and Distribution
TRANSCO	Transmission Company
TRC	Total Resource Cost
UK	United Kingdom
US	United States

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Introduction

The United States Agency for International Development's (USAID) Global Center for Environment, Energy and Environmental Training Program has developed the Best Practices Guide Series to provide technical information on the topics of power sector reform and regulatory practices. This series of guides is adapted from coursework that was designed to develop technical leadership capacity in energy development and greenhouse gas emissions reduction that are both friendly to the environment and beneficial to economic growth. This guide is for regulatory staff members, members of regulatory bodies, government officials and professional interested in or working on establishing or restructuring the power sector, particularly those involved with regulation or establishing or restructuring regulatory functions. It provides regulatory decision-makers and professionals with enhanced knowledge and procedures necessary to start up and run an efficient and effective regulatory body. Through a contract with the Energy Group at the Institute of International Education (IIE), USAID's contractor for the Technical Leadership Training Program, The Regulatory Assistance Project (RAP) has prepared the *Best Practices Guide: Implementing Power Sector Reform*.

IIE's Energy Group provides assistance and training to government and business leaders to develop the skills and knowledge they will need to succeed in meeting their energy management and national development goals.

This manual contains a distillation of a four-week course developed by the Regulatory Assistance Project for USAID, Office of Energy, Environment and Technology. The evolving nature of electric utility industry restructuring and regulation mean that much of the manual will be in constant need of refinement and updating. There are many lessons being learned around the world. Learning and applying the lessons creatively to the situation in any given country will assure that reforms serve the widely held goals of an efficient, fair, and environmentally sustainable electricity sector.

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Chapter 1

Industry Restructuring

Electric utility restructuring means different thing to different people and different countries. No one model fits all countries and regardless what model one chooses initially, restructuring is an ongoing and evolving activity. This chapter will describe the most important considerations.

Goals and Constraints

The most important step in any electric utility restructuring is to clearly understand and articulate the country's goals and constraints. Typical goals may include:

- Reducing electric costs;
- Attracting private capital;
- Maximize public revenues from the sale of government owned assets;
- Creating an environmentally sustainable electricity sector; and,
- A more efficient sector.

Constraints are equally important to know and they may typically include the following.

- Existing prices subsidized for some customers and others are overcharged;
- Rapidly increasing prices caused by rapid implementation of electric utility restructuring and competitive markets, may be politically and practically impossible;
- National security or economic condition may force the use of local resources; and,
- Rapid reductions in the workforce may not be possible, even though current employment levels may be well above those that a competitive sector would support.

A full and complete understanding of a country's goal and constraints will control the shape and pace of industry restructuring.

Prerequisites for Effective Competition

There are several prerequisites for competitive markets to operate efficiently. First there must be no market power. This means that no buyer or seller acting alone or in collusion with others can influence prices in any significant or long lasting way. Market power may present itself as horizontal market power, i.e. any one player has too much control over a given market; or as vertical nature, in which case control of a monopoly service, for example transmission, is used to influence the price of competitive generation. Second, given the nature of electricity markets and the physics of the transmission system, all participants in a competitive market must have equal access to transmission with non-discriminatory and efficient prices. Finally, buyers and sellers should have access to all relevant information and all costs must be internalized.

Range of Restructuring Models

There is a very wide range of possible electric utility restructuring models. We will describe just three of many possible options. Model 1 sits at one extreme. In this model one simply supplements the existing industry with the competitive acquisition of all new generating plants. Model 2 is an intermediate restructuring option that creates a fully competitive wholesale generation sector. In this approach all generation would be subject to competition regardless of vintage. Model 3 is a fully competitive retail and wholesale model. All generation services would be competitive from the generation to the retail consumption level. In this model only the transmission and distribution system would continue to have any form of regulation.

All of these options share a few common attributes. First, they all have, to varying degrees, competitive generation markets. As a result the structures and institutions necessary to support and facilitate a competitive generation market such as an efficient spot market must be designed and put in place. Second, they all have aspects of a continuing monopoly transmission and distribution system. Third, all options are based on arm's length transactions between any regulated and unregulated business. All three models are discussed further below.

Model 1: New Generation Competitively Acquired

In Model 1 existing generation and all transmission and distribution continue to be owned and operated by the existing utility. All new generation is added by independent power producers (IPPs) and sold to existing utilities who then sell the electricity in the retail market. (This model and the next are called the single buyer model.) Generation is subject to competitive bidding and is sold to the single buyer under a long term contract.

In this model customers remain captive and hence there is a significant role for an independent regulatory commission. The role of the regulator is to create competitive conditions for the

acquisition of new generation. Also, in this model Integrated Resource Planning (IRP) considerations continue to be used to plan the system and to evaluate the competitive bids. Questions such as risk allocation and risk reduction are among the many issues that continue to be considered by regulators in the context of their IRP responsibilities.

Other important conditions for this model include clear and enforceable contracts with credit worthy buyers. Competitive generation in this model continues to rest on the financability of the underlying power sales contracts. If contract enforceablility or the creditworthiness of the buyer are in doubt, other forms of credit guarantees will be needed.

This model has been an initial step for most countries that have restructures their power sector. Consequently, this model may be particularly appropriate for countries that are just beginning to consider industry restructuring and have a need to attract additional capital to meet growing electricity needs. It allows for competition to be introduced incrementally into an existing system. It provides new sources of private capital and a wider range of options for the purchasing utility than may otherwise have been the case. Risk can be distributed fairly between utilities and developers under the terms of the contracts. The greatest weakness of this model is that it fails to provide generating efficiencies in existing generating plants.

While almost all countries have taken this first step the experience and results have been mixed. The model hinges on an effective and efficient competitive acquisition process. Many counties have signed long term contracts with IPPs without an effective bidding and evaluation process in place.

Model 2: Full Wholesale Competition

Model 2 is the fully competitive wholesale model. All generation, new and existing, is competitive and generation receives market prices. The utility becomes a transmission and distribution (T&D) company. There should be no affiliation between the utility and generators. The utility in this model continues to be the sole buyer of power and the sole retail seller. The utility is a monopoly and is regulated by an independent regulatory commission.

Because the utility is a single buyer and customers remain captive. The regulatory role includes regulation of transmission and distribution (T&D) prices and services as well as IRP oversight of the utility's purchasing decisions. A significant regulatory role in this model is to create the institutions and rules needed for an efficient generation market. This model is particularly valuable because of the very powerful incentives it can create for the efficient operation and expansion of the generating sector. It can be very effective in reallocating risks in an efficient and fair fashion. It can also be very

effective at raising capital and allowing in country capital to be used for other purposes including the upgrading and expansion of the transmission and distribution systems.

Some of the issues to be addressed, if this model is pursued, include price volatility and market design to give reasonable incentives to add capacity when needed. Also, the transition may provide countries with an opportunity to sell existing plants for prices that exceed their existing book value. The increased revenue can be used for a wide variety of purposes.

Market prices for existing generation has generally taken the form of long-term contracts, sometimes called vesting contracts. Many countries, including the UK, have used this model as intermediate step on the way to full retail competition. Countries that have created competitive wholesale markets, including the US, UK, Canada, Australia, and New Zealand have experienced the need to continually monitor the functioning of the market to make corrections to solve operational and market power issues. This has become a vital role of the regulatory commissions. Notwithstanding the need for continual improvements, the wholesale markets have performed reasonably well.

Model 3: Full Retail Competition

Model 3 extends the competitive model to all retail customers. In this model, the utility is no longer the single buyer. The utility provides the transmission and distribution system. It has an obligation to connect, but not an obligation to serve. Customers buy generation services from the supplier of their choice.

The role of regulation in this model is the least of all possible models. The regulators' focus will be on establishing market structures and market institutions which can assure the greatest level of competition and the greatest level of choice for customers, including prices, service quality, and consumer protection. There is no economic regulation of the generation sector. Regulation ensures open access, reasonable and competitive conditions and generally protection against monopoly power of buyers and sellers.

This model has been implemented in many countries including the UK, Norway, and parts of the US, Australia, and Canada. The success of adding retail competition to Model 2 is difficult to gauge at this time.

U.S. History of Industry Restructuring

The United States unknowingly initiated industry restructuring in 1978 with the passage of the Public Utilities Regulatory Policies Act of 1978 (PURPA). One section of that law in particular, which seemed to be of little consequence, required electric utilities to purchase power from non-utility

suppliers that produced power from renewable energy or using efficient cogeneration plants. This began the U.S. experience with IPPs and led to subsequent restructuring initiatives.

In 1992, The Energy Policy Act of 1992 (EPACT) was passed and required two efficiencies from a competitively-disciplined generating sector. First, the risks of building and operating generation would be placed firmly on those who voluntarily assumed such risks by choosing to enter the generating business. Second, it was expected that competitive markets would be better at revealing the costs of producing energy at different hours of the day and different seasons better than regulators.

The consensus to restructure, however, did not extend to the essential characteristics of the new industry. The different actors in restructuring, including federal and state legislators, utility companies, and the general public all have different agendas. A key compromise between these groups was to limit the electricity market to one in which anyone could become a generator, and all generators would have access to transmission services but the only buyers would be franchised utilities. This gave the power to the states to determine when, how and if users would be permitted to buy electricity from an unregulated power merchant or generating company (GENCO). Hindsight supports the conclusion that leaving the design of electricity markets to the states granted enormous powers to the large utilities. They have been dominant players in states' legislative processes.

Two compromises were critical in the EPACT: (1) electric utility holding companies gained the right to own PURPA machines and exempt wholesale generators, (EWGs) in the U.S. and abroad and gained the right to use oil and natural gas as the principal fuel for such plants,[1] and (2) the FERC was given explicit authority to order transmitting utilities to provide transmission service to GENCOs and

[1]The Power Plant and Industrial Fuel Use Act of 1978 insisted that every power plant be capable of using coal and denied to utilities the right to build generating plants that depended on oil and/or natural gas. Section 301 of EPACT repealed the Power Plant and Industrial Fuel Use Act.

Federal Power Marketing Agencies for wholesale transactions, as wholesale is defined in the Federal Power Act.[2]

Approximately 250 investor owned utilities (IOUs) generate about 75 percent of the US's power and serve about 75 percent of all retail customers, but the other 3,000 municipal, cooperative, and federal government-owned utilities are also politically potent. The interests of these utilities conflict with one another and with those of the IOUs. The electric industry also has many regulators. Its principal economic regulators at the federal level are the Federal Energy Regulatory Commission (FERC), the Department of Energy (DOE), the Securities Exchange Commission (SEC), and the Rural Utility Service. At the state level, they are public utility commissions, state energy planning agencies, and environmental siting agencies. The growth of state energy planning agencies in the last two decades is evidence of the increasing role some states intended, and may still intend, to play in future asset additions in the electric industry. These regulatory agencies have conflicting agendas, and many of them are vigorous proponents of their positions. The users of electricity are also a diverse group, and some user sectors are better organized that others, but all are insisting on a major voice in the structure of the new industry.

The US Congress has not yet been able to come up with effective legislation that will gain a majority in both houses. The FERC has also failed to provide the needed leadership to develop appropriate regulation following restructuring. The FERC's reluctance to mandate a particular market structure has been partly the result of its limited powers but also a reflection of the fact that the issues explored in early debates revealed intense disagreements among industry participants. Moreover, although the continuing research and extended debates in subsequent years have made the arguments more precise and therefore more complex, the issues that divided the parties in the mid 1990s remain the issues that divide them today. The gridlock in Congress is caused in significant part by the conflicting views over the proper market design.

Power Pools or Bilateral Trading

[2]Section 726 of the EPACT defines transmitting utility as any electric utility, qualifying facility, small power production facility, or Federal power marketing agency which owns or operates electric power transmission facilities which are used for the sale of electric energy at wholesale.

Two critical issues that remain to be resolved in the U.S. for the creation of an electric industry in which the generating sector is competitive and efficiently integrated with the monopoly elements of transmission, distribution, and system coordination are market design and deterring the exercise of monopoly power. In the market-design debates in the early 1990s, two classes of models were proposed. One class of models built on the English experience and the other drew lessons from the U.S. natural gas deregulation experience. The first set of models were labeled POOLCO models and the second set were called Bilateral Trading models. The critical difference between the two models is the importance assigned to the integration of the spot market and the dispatch process.

One proponent of POOLCO models, Larry Ruff, described his position as follows:

> [A]n integrated spot market/dispatch process is the only practical way to ... internalize the real-time network externalities that otherwise make competitive electricity markets unacceptably inefficient and unreliable. The financial contracting that becomes possible only when there is an open spot market then largely displaces more complex physical contracting, allowing producers and consumers to meet their commercial needs with relatively low transaction costs and risks.[3]

Ruff further notes that,

"Most of the problems that have arisen in electricity markets other than those due to structural problems such as inadequate competition are attributable to specific flaws in the integrated spot market/dispatch process or to failure to take full advantage of the spot prices arising from this process."[4]

The proponents of Bilateral Trading models disagree emphatically with this conclusion. They emphasize the danger of having a monopoly utility that controls dispatch and whose first priority is system reliability implementing markets. They stress the beneficial results that will flow from permitting unregulated parties to organize all markets. In their view, the role of system operators is to implement the orders received from market participants and to preserve system reliability.

People who venture into this debate should be warned: For many parties, it is not an intellectual exercise; it is a political battle, and their arguments are designed to move the political system to their

[3] Larry E. Ruff, "Competitive Electricity Markets: Why They Are Working and How to Improve Them." 12 May 1999. Mr. Ruff is an economic consultant with NERA.

[4] *Ibid.*

advantage. Despite irreconcilable differences between the two groups, there is agreement on some issues. Proponents of both models (1) support the continuation of the North American Electric Reliability Council (NERC), or a similar organization, to create and enforce reliability standards for operating the North American bulk power system, and (2) recognize the need for independent system operators who coordinate grid operations in each control area and preserve reliability.

The U.S. has seen POOLCO models adopted in the former tight power pools of New England, PJM (Pennsylvania, New Jersey, Maryland) and New York. California currently has a version of a POOLCO model with the market maker, the California Power Exchange (CALPX), and the independent system operator (ISO) in separate organizations. No other area of the nation has yet implemented an ISO-managed spot market. In most of the Southeast, Southwest, and Midwest, non-regulated markets are evolving based on bilateral transactions.

Market Power

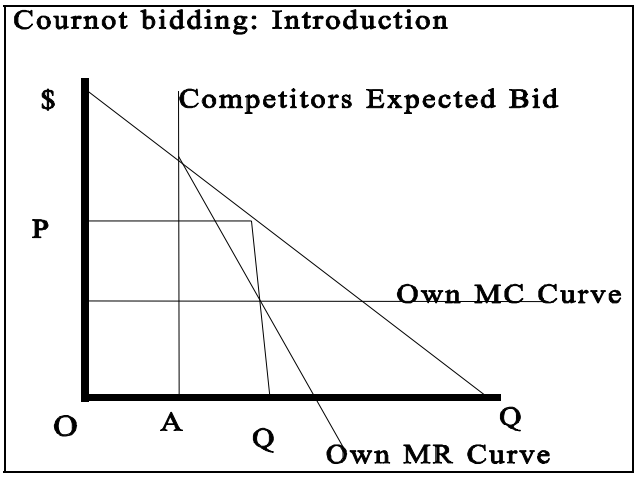
The monopoly abuse problem is an ever present one. Economists generally favor the creation of a structure that makes it very difficult for firms to collude, but that solution has not been implemented by state or federal authorities. In almost every market, the number of GENCOs is relatively small, five to ten. The ability of firms in interconnected markets to sell into non-native markets provides some reassurance that the exercise of monopoly power will not be a serious problem. On the other hand, the very high prices at times have created serious concerns for many.

The principal problem arises during periods of peak demands. During such periods, there may be only a small number of GENCOs with discretionary capacity. The opportunity for various forms of price boosting then develops. Clearly, the desire to maximize profits encourages GENCOs to constrain their competitive inclinations. If the firms can collude and behave as a monopolist would behave, they can increase the price and their collective profits. The antitrust laws make explicit collusion very risky, however. One theory of quasi-collusive behavior is the Cournot theory. The essence of the Cournot theory is that a firm bidding into a market in which there are only a few sellers, (e.g., during a peak demand period) will assume that the quantity bid by the other GENCOs will be the same as it was in the last similar period and, as a consequence, the firm can assume that the remainder of the market demand curve is its to exploit. The firm, therefore, will bid like a monopolist for that segment of the demand curve. If all the firms behave in a similar way, there will be an equilibrium price higher than the competitive price.

The attached figure illustrates a part of this theory.

If the competitor is assumed to bid a quantity of A in the next period, then the "Own" firm can assume that the demand curve to the right of A belongs to him. His profit-maximizing position, given the marginal cost and marginal revenues curves drawn, is a quantity bid of Q which will cause a price of P.

It can be shown that if the competitor responds by taking the Own firm's bid quantity as a signal of what it will bid in the next period and behaves as the Own firm behaved, the two firms will converge to an equilibrium price that is higher than the competitive price and lower than the monopoly price. Similarly, the market quantity will be lower than the competitive quantity and higher than the monopoly quantity. At this convergent price, the two parties will satisfy one another's expectations.



Conclusion

There are many alternative approaches to industry restructuring. No one model will fit the needs of all countries. The most important step is to begin with a very clear and articulated set of goals and constraints. All restructuring models share certain common elements. These include independent regulatory oversight of monopoly activities, market structures that are free from market power problems, and clear and enforceable property rights.

Chapter 2

Independent Power Production and Competitive Bidding

Chapter 1 described a wide range of possible restructuring options. Each option has some role for Independent Power Producers (IPPs). IPPs are companies that build and usually operate generating facilities, but are not usually considered utilities. They provide the large capital resources needed to build or buy these plants and recover their costs from the sale of electricity. Depending on the restructuring model selected the role of IPPs can range from representing a fraction of new generating resources to the ownership and operation of all generation.

The Goals for an IPP Program

As with most aspects of electric utility industry restructuring the nature of a country's IPP program will be shaped by the country's goals. There are many possible goals that could shape a country's IPP program but the three that arise most often are:

- Attract outside capital to meet rapidly growing electricity needs without imposing large strains on the nations internal financial capabilities;
- Reduce electricity costs though competitive pressures; and,
- Assign risks in a more efficient or desirable manner.

Which of these goals are adopted will influence the final design of an IPP program .

Relationship to Electric Utility Industry Restructuring

In addition to the goals of an IPP program, the IPP program must fit logically with the nature of a country's overall electric restructuring plans. In some countries restructuring calls for all new power generation to be constructed by IPPs, in other countries, only some portion of new power plants will be constructed by IPPs. Still other countries prefer to have IPP participation though joint ownership arrangements some with IPPs holding a minority stake and others with IPPs holding a majority interest. Other countries have chosen to make all generation competitive and have sold (or have plans to sell) all existing generation to IPPs.

Any of these models is achievable; however, care must be taken to avoid conflicts between the goals of an IPP program and the scope and limitations of a restructuring plan.

Risks and Rewards

Electricity prices offered by IPPs will generally reflect the costs and risks borne by the IPP. Several general principles explain variations in IPP prices.

- The greater the risks the higher the prices.;
- The more competitive the market the lower the prices; and,
- The more stable and predictable the market the lower the prices.

To an IPP, risk can come from a number of different sources. Some of the more important risks are the following:

RISK TYPE	**DESCRIPTION**
Currency	IPP payments may be in local currency yet many IPP costs such as fuel costs, equipment and repair costs, and cost of capital may be in U.S. dollars.
Payment	The purchaser of power from an IPP may be financially weak creating the risk of non-payment.
Political	The existing or future government may change the rules
Management	IPP participation through minority equity ownership increases risk of loss of IPP management oversight.
Technology and Performance	The technology selected may not perform as originally expected

To some degree these risks, if borne by the IPP, will be reflected in electricity prices. The higher the risk, the higher electricity prices. At some point the level of risk may become so high that project financing and development is impossible and the IPP option disappears. To keep electricity prices within reason, it is desirable to assign risks to the entity that can most efficiently deal with the risk or to reduce IPP risks through some form of a guarantee from stable government or international financial institutions.

In a general matter, IPPs finance and construct plants based on the financial strength of an underlying power sales contract. In some cases where the markets are more stable and predictable, IPPs have constructed merchant plants with little or no plant capacity subject to a power sales contract.

Power Purchase Agreements (PPA)

Most PPAs or power sales contracts are long-term, fifteen years or more, full output contracts. PPAs have become increasingly complex documents that have grown over the past ten years from twenty pages in length to over two hundred pages. The full discussion of PPAs is well beyond the scope of this guide.

Pricing terms are the most important. Electricity prices are either on a rolled-in energy basis (x/kWh) or two-part (y/kWh + z/kW) in nature. In either case, there may be performance standards (unit availability) tied to rewards or penalties. In general, the best practice is to have a two- part contract where the price components reflect the underlying cost of the technology being purchased. Thus a hydro plant and a gas-fired plant that are each expected to deliver power at x/kWh would have different two-part contracts. The hydro plant would have a very high fixed component and a low variable component relative to the gas-fired plant.

There are a growing number of examples where IPP merchant power plants are being constructed without long-term contracts. In this case IPPs who have sufficient confidence in the economic, financial, and accounting operation of spot electricity markets or in the strength of retail competition will finance plants based on expected cash flow from direct sales to retail customers, sales to a spot market, or sales to a power pool. This development is relatively recent and will probably be limited for substantial time to countries that have particularly clear, well-established, and stable electricity markets and underlying institutional and legal foundations that permit financing of this type. In the mean time, most IPPs will continue to be built based on long-term contracts. These long-term contracts will themselves rest on the financial strength of the underlying purchasers, generally the local transmission and distribution companies.

Competitive Bidding Issues

Competitive bidding begins with issuance of a very clear and complete Request for Proposal (RFP). Clear and complete proposals will solicit the greatest number of bids designed to meet the specific country needs. The greater the number of bids, the more efficient the competition and the greater confidence one can have in the selection of the winning bidder. The RFP should clearly describe the important attributes of the project and how proposals will be evaluated.

The bidding evaluation criteria can be very prescriptive with specific weights stated for every aspect of the proposal. In this case bidders could self-score their own proposals. At the other extreme, the RFP may simply describe the purchasers needs and desires and leave the bidders free to meet the RFP

in potentially innovative ways. Each approach has its benefits and determents. In developing countries with little or no track record or experience in this area, the best practice is a detailed and highly prescriptive RFP.

Including all standard provisions of a PPA as part of the RFP is beneficial and would simplify negotiations, reduce uncertainty, improve the financing costs of the contract, be fair for all participating vendors and speed the contracting process.

Dealing with Contingencies

Power contracts can allow independent generation to be used efficiently and flexibly to deal with risks and contingencies as utility-owned units. In the preconstruction phase, PPAs have included specific provisions that allow the purchaser to delay the in service date of an IPP. In many cases the financial costs of this delay may be lower than similar delay costs exercised by utilities in their own projects. Contracts may also provide for buy-out provisions, or provisions that allow the purchaser to terminate the contract provided that the termination is exercised by a specific date, generally prior to construction.

Post-construction flexibility is generally more expensive to obtain, but experience shows that flexibility in the post-construction phase is also achievable. Provisions for early termination and buy-outs can be most successfully arranged if done prior to the execution of the PPA.

Renegotiations

Many jurisdictions have or are facing the problem of IPP contract prices which may have seemed reasonable when the contracts were executed but today seem too high. Renegotiating these contracts is possible but should be approached from the perspective of meeting the needs of both the purchaser and the seller. The key to renegotiation of these contracts is for both parties to have a clear understanding of each other's goals and constraints. With the goals and constraints clearly expressed, creative solutions can generally be found. Options may include contract extensions to bring near-term prices down, refinancing or modified fuel contracts to bring IPP costs down, or contract buy-outs or buy-downs.

Conclusion

IPPs are an important consideration in all restructuring options due to their provision of large capital resources to take on the financial and operating risks of generation electric energy.

Careful planning and procurement practices can assure that IPPs meet a country's needs in the most flexible and cost-effective manner possible.

Chapter 3

The Economic Justification for Utility Regulation

The history of utility regulation differs greatly from country to country. Each country's history is unique in its particulars, but the fundamental justifications for governmental oversight of the utility sector and the electric industry are universal. The first justification is the belief that the utility sector's outputs are essential to the well-being of society, including households and businesses. The second justification is that the technological and economic features of the utility sector are such that a single firm can serve the overall demand for output at a lower total cost than any combination of firms. This is called "natural monopoly", and it gives a single utility the power to restrict output and set prices at levels higher than are economically justified.

> *Economic Regulation:* The explicit public or governmental intervention into a market to achieve a public policy or social objective that the market fails to accomplish on its own.

Theory of Price in Competitive Markets

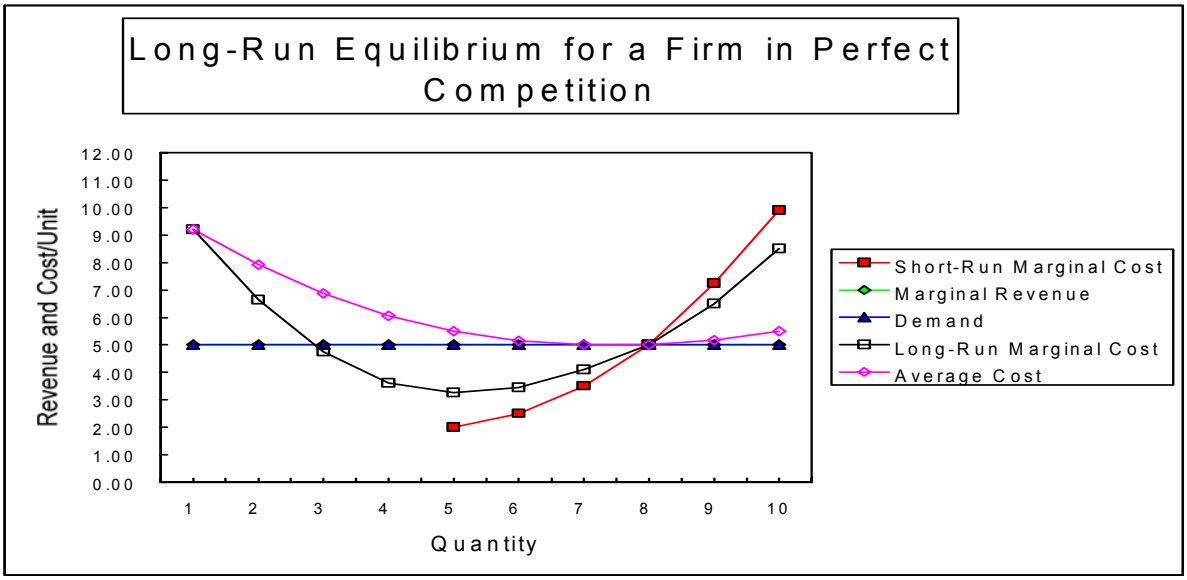
Modern economists are interested in discovering the elements and conditions of economic activity that will yield the greatest level of societal welfare, given an *a priori* distribution of income. Societal welfare is increased by maximizing economic efficiency: namely, that scarce resources are put to their most highly valued uses and are used most efficiently in production. There are two components of economic efficiency: allocative and productive.

The objective of allocative efficiency is met when as great a quantity of a good as possible is produced and sold at a price that satisfies the demand for that good at that price. Productive efficiency is maximized when a given quantity of output is produced at the lowest possible total cost. Generally speaking, allocative efficiency increases as productive efficiency increases.

Economists have developed a complex set of tools to describe and predict the behavior of economic actors under a variety of conditions. In general, their observations are expressed in terms of a market's proximity to perfect competition, which has been shown by mathematical proof to assure the most economically efficient outcome. In its simplest form, the proof works as follows:

Firms act to maximize their own profit and consumers act to maximize their own welfare. In perfect competition, price is set by the market and in equilibrium it occurs when producers are willing to

supply that amount, and only that amount, at a price that will meet total demand for the good at that price. As price increases, producers are willing to supply more units of the good, but consumers are willing to purchase fewer units. Thus, there is only one price that satisfies the preferences of both suppliers and consumers simultaneously, and it is often referred to as the market *clearing* price (all goods produced at the price will be demanded).



Because no firm or consumer has market power (which is to say that the production or consumption decisions of any one firm or consumer will have no effect on overall supply or demand and, therefore, no effect on price), firms and consumers in competition are *price-takers*. Put another way, the relationship between price and demand that describes the behavior of consumers in the overall market for the good (namely that as demand increases, the price consumers are willing to pay decreases) does not describe the consumer behavior that any one firm confronts: specifically, the unwillingness of any consumer to pay higher than the market price for any of its output. (They would, of course, be perfectly happy to purchase all its output at less than the market price, but under such circumstances it would be unable to meet the increased demand and simultaneously cover its costs.)

Because firms in competition cannot change the market price, they will instead optimize their factors of production (capital, labor, other inputs) in order to produce that quantity of goods and services which will, at the market price, maximize their profits (*i.e.*, minimize their costs). Mathematically, they will continue to produce goods until the cost of producing the next unit of output (the *marginal* unit) equals the additional (or marginal) revenue that they will receive for that unit, which of course is the market price. At that point they will stop producing, since to produce more will be to incur marginal costs that exceed marginal revenues, and total profits will fall.

The marginal cost of production is the cost incurred to serve an additional unit of consumption at a particular time, and it represents the cost to society to satisfy that incremental demand. Since it represents the true cost of putting resources to a particular use, a price equal to marginal cost correctly informs consumers as to the minimum value of that use; thus informed, they can choose to purchase or not to purchase, depending on how highly they value that consumption (and alternatives to it) themselves. Mathematically, marginal cost equals the difference between a firm's total costs if it supplies the incremental unit and its total costs if it does not.

The interaction between supply and demand in an environment where the costs of production increase as output increases has the effect of creating economically efficient outcomes. The increasing-cost nature of the particular industry invites new producers to enter the market in the hope of producing at a lower cost, thus winning consumers and profits. However, the overall increase in supply caused by the new producers can only be sold (or *cleared*) at a lower market price. This, as a consequence, improves overall societal welfare, since more consumers will then derive value from use of the good. In this way, competitive markets drive down the price of a good to the lowest possible point for a given level of demand.

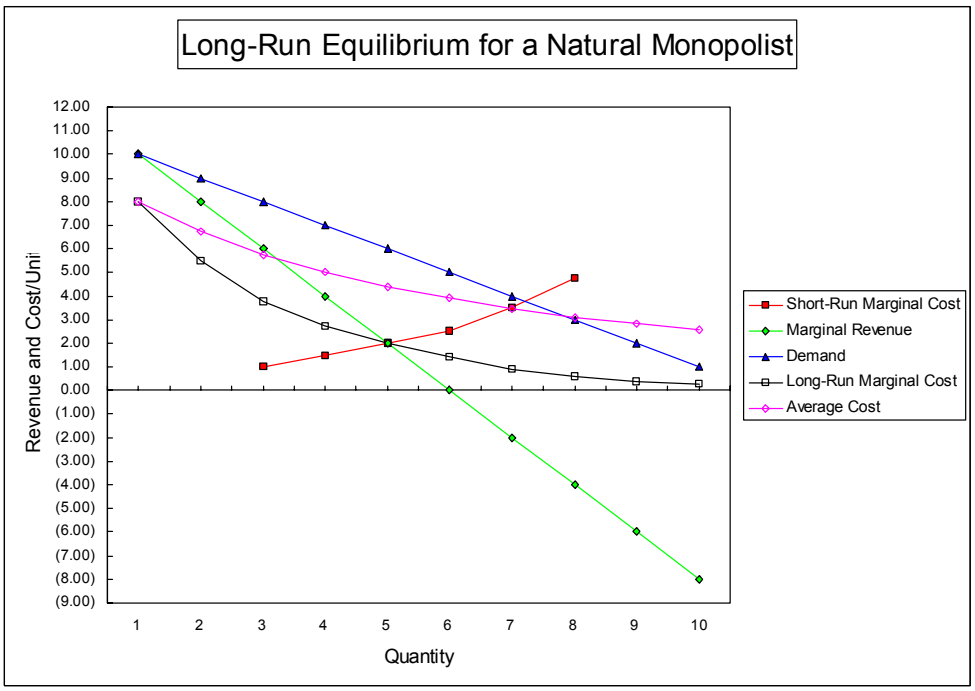
Of critical importance in this analysis is the fact that the marginal cost of production (MC) should equal the price (P) that consumers pay (P = MC). When P = MC, consumers are correctly informed as to the value of society's resources that are allocated to produce the incremental unit of output that they are demanding (or considering demanding). If society's resources are to be put to their most highly valued uses, prices should reflect the true costs of production. In this way, consumers, who make purchasing decisions based on the relative values that they assign to alternative uses of their own resources (income and wealth), will make consumption decisions that allocate society's resources to their most highly valued use. If a good is priced below its marginal cost (under-priced), then some quantity of the good will have been produced at a cost that exceeds its value to society, and the resources that were given to its production could have been allocated to better (more highly valued) uses elsewhere. The converse is true of over-priced goods.

Theory of Price under Monopoly Conditions

A monopolist, like a competitive firm, will maximize profits at that level of output where its marginal cost equals its marginal revenue (MC = MR). However, for the monopolist, marginal revenue per unit does not equal what would otherwise be the market price for the good. Because a monopolist supplies the entire market for a good, it is not a price-taker. It has the power to set price at that level which maximizes its profits, rather than only the ability to optimize its factors of production. A monopolist's profit-maximizing strategy is generally to restrict output and raise prices.

Its price-setting power is not absolute, however. The fundamental inverse relationship between price and demand still operates. The value that consumers see in a good is a function of its price, and this will determine how much of a good will be purchased at a particular price. Even if the good in

question is essential, consumers may nevertheless be willing (or forced) to forego consumption if the price is too high. Ideally, a monopolist would like to charge each individual consumer the highest possible price that he or she is willing to pay for the good (this is *price discrimination* in the economic, not legal, sense of the term). However, the monopolist is prevented from doing this by the threat of emerging secondary markets, wherein consumers would resell the good at prices higher than they themselves paid. This is arbitrage, and the independent attempts by many resellers to do so would quickly lower the market price to that originally charged by the monopolist. Thus, all consumers pay the same price for the good, though some of them would have been willing to pay a higher price.



The effect of this market reality on monopolists is that, as output increases, price falls, but so too does marginal revenue. Consider, by way of example, the monopolist who can sell 100 units of its product at $2.00 per unit, 200 units at 1.50 per unit, and 300 units at 1.00 per unit. In the first instance, the firm's total revenue is $200, and its marginal revenue is also $200. If it increases its output to 200 units, its total revenue becomes $300, but its marginal revenue falls to $100. If it again increases its output, this time to 300 units, its total revenue is $300, but its marginal revenue is zero. Unless its cost to make those additional 100 units is also zero (or less!), it is quite unlikely that the monopolist will produce them.

By itself, this exercise does not tell us what the profit-maximizing price and quantity of output are. Before we can determine them, we need to know how the firm's costs change as output increases: (e.g. we need to know its marginal cost curve). However, the exercise does reveal an important constraint that the price-setting firm faces. For the competitive firm, marginal revenue equals the market price, which does not change as the firm's output changes. But for the monopolist, marginal revenue is usually less than price. Since the monopolist will continue to produce until marginal revenue equals marginal cost, it means that the monopolist will cease production when price is substantially in excess of marginal cost. This is hardly the most efficient level of output — output can be expanded until marginal cost equals price, and society will be better off. Again, whether the monopolist will still be profitable when price equals marginal cost (will it cover its total costs?) depends on the relationship of its average cost curve to its marginal cost curve at that point. But the essential point is that a monopolist's profit incentives do not cause it to act in a way that maximizes societal welfare. Monopoly power, then, is the power to set price above marginal cost (and, of course, above average cost).

Natural Monopoly

Monopolies can arise for any of a number of reasons, for example, through possession of legally granted patent or franchise rights or through control over some essential aspect of the production and marketing process. Some industries, however, are characterized by an unusual feature, called increasing economies of scale, which is to say that their costs of production actually decrease as output increases. When this remains true for a broad range of output, it is generally more efficient (less costly) for one firm, rather than two or more, to supply the entire market. This is referred to as *natural monopoly*.

> *Natural monopoly:* A market in which a single firm can produce a desired level of output at a lower cost than any output combination of more than one firm.

Typically, it is an industry's technological characteristics that lead to natural monopoly, and we often see that a common feature of natural monopolies is a high ratio of fixed costs to total costs. Consequently, as output increases, average cost decreases. The technological elements of the electric industry that create natural monopoly conditions are, first and foremost, the transmission and distribution (T&D) systems. They have very high fixed costs and low operating costs: it doesn't pay to have two or more sets of wires running down the street. T&D exhibits tremendous economies of scale. As for generation, it appears that most economies of scale have been exhausted (or overcome) cost no longer declines as the size of power stations increases for the larger, industrialized nations. The current debate on restructuring in the U.S. has been precipitated by this question.

Objectives of Economic Regulation

The US Federal Energy Regulatory Commission (FERC) oversees price negotiations for utilities. In light of the economic features of utilities, certain objectives for price regulation emerge. The two overarching objectives are *economic efficiency* and *fairness*. These can be further broken down as follows:

Efficiency, both allocative and productive. Since electric utilities generally do not operate in competitive markets that would impose cost discipline upon them, regulation must fulfill that function. This objective is promoted by setting rates that reflect, to the greatest extent possible, the marginal costs of production.

Fair prices. Fair to both consumers and investors. By this we mean price regulation is intended to guard against the reaping of economic profits while still enabling the utility to generate revenues adequate to cover prudent expenses and investment and to provide a reasonable return on that investment. In the provision of essential goods and services, it is deemed inappropriate for private economic actors to reap "windfall" profits.

Non-discriminatory access to service for all consumers.

Adequate quality and reliability. Because electricity is an essential service, reliability is critically important.

Other stated public policy objectives (*e.g.*, environmental protection, universal service, low-income support, energy efficiency, etc.).[5]

Public Goals of the Electric System

As an essential element of state and national infrastructure, as a system with natural monopoly characteristics, and as a system with a very large environmental "footprint", the electric system affects the public good in many ways. It *is* reasonable, and often necessary, to support public purpose

[5] Not discussed here, but of critical importance, are the effects of unpriced environmental impacts: *externalities*. Often, there are costs to production and consumption that are not reflected in the actual price of a good. There are many reasons why such costs might go unaccounted for, but economists agree that all such costs should be internalized (reflected in price) if price is to meet the efficiency objective.

programs through the electric system and its regulation. Well-established traditions, programs, and practices to support public purposes include:

- Universal service policies, including service to low-income customers and rural areas;
- Investments and other program support for energy efficiency in generation, delivery, and end-use services;
- Investments in, and development of, renewable, sustainable, and less-polluting generating resources;
- Support for research and development on electricity generation, delivery, use and impacts;
- Consumer protection and consumer education programs.

What Public Benefits Should the Electric System Support?

Because the electric system offers a means of revenue collection connected to an essential service, advocates and governments may look to the utility or the regulatory authority for support for a variety of legitimate, perhaps even compelling, public purposes. However, keeping the goals of economic efficiency in mind, it is important not to distort electric prices unduly by transforming electric rates into all-purpose general taxes. Striking the balance here requires consideration of the following questions:

- Is this public purpose program or expenditure directly related to the electric system, or would the revenues collected be more in the nature of a general tax? (General taxes, such as sales taxes, property and income taxes, etc., may all be collected from electricity producers and consumers, as with any commercial activity, but these should be treated in the manner of other taxes.) Expenditures directly related to the administration of the electric system such as renewable energy procurement, efficiency programs, and universal service may properly be administered by the utility and regulatory authority within the cost of service.
- Does the proposed program or expenditure promote the long-term public good?
- Can this program or expenditure be administered with minimal price and market distortion?
- Is this program or expenditure undertaken to correct a market failure, or overcome a barrier to an efficient market?

Renewable energy and energy efficiency programs may be justified on economic grounds as a means of correcting the market's failure to incorporate environmental costs in the price of electric generation, and overcoming consumer barriers to deployment of cost-effective efficiency technology. Thus, even though these programs may raise the short-term price of electricity, they do not distort electricity markets. Correcting market failures is not a market distortion.

Electric System Public Purpose Mechanisms

Across the globe, and over many years, electric utilities, governments, and utility regulators have explored numerous mechanisms to deliver public interest programs in connection with electric service. Many successful examples exist. Some, such as the practice of Integrated Resource Planning, were developed in the context of vertically-integrated electric systems, and have greatest applicability in any type of single buyer industry structure (See Chapter 7). Others have been developed in connection with emerging retail competitive models.

Public Purpose Mechanisms: Leading Examples

A comprehensive review of public purpose mechanisms across the electric industry would need to cover a very large number of topics and examples. In addition to the traditional mechanisms used under various franchise systems, a number of new techniques are now emerging for application in a competitively-neutral fashion in competitive electricity markets. Leading examples include:

Energy Efficiency Programs

- Comprehensive energy efficiency and load management programs have been developed and widely implemented as part of utilities' Integrated Resource Plans;
- Jurisdiction-wide programs have been funded through wires or system uplift charges, and administered through public efficiency agencies (e.g., the UK's Energy Savings Trust, and California's Energy Commission, or the new Energy Efficiency Utility franchise set up in Vermont);
- Efficiency measures have been promoted through voluntary programs (e.g., the EPA's *Green Lights* and *Energy Star* programs) and mandatory building and appliance efficiency programs;
- Some jurisdictions have simple mandatory spending guidelines (e.g., Texas under restructuring, and Brazil's 1% spending mandate);
- In some regions the focus is on Market Transformation activities (e.g., the U.S. Pacific Northwest and New England).

Renewable Electricity Generation

- Mandatory purchase requirement at avoided cost (e.g., PURPA in the U.S. and feed laws in Germany and elsewhere);
- Support for renewable energy research and development through research consortia (e.g., the Electric Power Research Institute and several state-level programs);
- Creation of a renewable energy fund to support new renewable energy production in response to a public bid offering;

- Establishment of a Renewable Energy Portfolio Standard applicable to all generators or retail electric sellers in a competitive electric market.

Research and Development

- Pooled funding, either voluntarily (e.g., Electric Power Research Institute) or through a mandate (e.g., a wires charge), to support public-purpose research and development;
- Tax credits for qualified R &D;
- Public expenditures through government agencies, universities, and grants to utilities and equipment manufacturers.

Universal Service Mechanisms

- Traditional franchise: obligation to serve all customers within the franchise territory;
- Rural build-out requirements as part of franchise awards in urban areas;
- Geographically-averaged distribution rates provide support for service at average rates in high-cost portions of the service territory;
- Affordability subsidies for low-income households (lifeline rates, low-income discounts, bill arrearage forgiveness programs, disconnection moratoria);
- Rural electrification subsidies (both grid and off-grid options);
- Rural electric cooperatives;
- Efficiency programs targeted to low-income households.

As a general matter, successful programs satisfactorily address the questions set out above in the discussion of *What Public Benefits Should the Electric System Support?*. Program designers should also consider:

- Whether the program can be accomplished within the authority of the regulatory agency, or whether it requires general governmental enabling legislation;
- Whether the proposed program is compatible with the existing and anticipated industry structure including a competitive market if that transition is intended. In particular, to the degree that either wholesale or retail competition is expected, public purpose support or performance mechanisms must be ***competitively neutral*** and ***non-bypassable***; and
- Whether continued regulatory oversight can be maintained, to monitor program effectiveness and make necessary adjustments and improvements over time.

Chapter 4

Institutional Framework and Process

Background

In industrialized countries, electric service is provided by a government agency which is often organized under the ministry of energy or other ministerial level unit. In this framework, the utility fulfills a government responsibility of providing electric service, acting as an agency of the government. Pricing decisions are often premised on social welfare or political criteria. Underlying cost structures are not closely related to prices. In fact, prices are often set using an ability to pay theory. Almost universally, there is an assumption that industrial and large commercial are able to pay, while household and agricultural customers are not. As a result, electric pricing tends to be a highly political process, unsupported by rational economic policy. As a result the operations of the electric utility may experience low levels of reliability, inability to serve total consumer demand and little or no access to local, regional or global capital markets. These conditions have led to a widespread effort to reform the electric sector in many developing countries.

Electricity sector reform usually involves two major reorganizations of the industry. First, the utility operations are transformed from a government agency into an enterprise format. This may or may not involve transferring the assets of the utility to private ownership. Even when a utility becomes a quasi public/private corporation remaining under government ownership, its entire operations are separated from the government structure and budget process and placed on a stand-alone *enterprise* basis. See Chapter 7.

Functions and Responsibilities of a Regulatory Commission

The other major reorganization involves the creation of a utility regulatory commission to regulate and control the reformed utility. A regulatory commission must impose a variety of economic regulations on the utility and must be mindful of a variety of collateral issues. The functions and responsibilities of a commission include:

- Rate setting (often called tariff setting);
- General regulatory rulemaking;
- Utility system resource planning;
- Environmental impacts of resource utilization;
- Conservation and efficient use of utility and societal resources;
- Consumer Protection;
- Maintenance of the utility's financial integrity;

- Assuring high system reliability; and,
- Utilization of appropriate tools to assure that utility management is given the proper set of incentives.

These functions and responsibilities are often at odds with another. As a result, the commission is often faced with the task of balancing these competing objectives to develop a workable framework of regulation.

This report does not address the structure and role of a country's judiciary, however, an effective judiciary branch, serves two important functions relating to a regulatory commission. First, it provides stakeholders an opportunity to have commission decisions reviewed thereby assuring that the decisions are based on a factual record and the law has been properly applied. Second, an effective judiciary provides commissions with additional means of enforcing commission orders

Key Characteristics of a Regulatory Commission

The structure, scope and powers of a regulatory commission are key to a successful restructuring of the industry. The key characteristics of a good regulatory commission include:

- Independence from the political process;
- Independence from the regulated enterprise;
- A broad mandate to protect the public interest;
- Technical expertise in the functions and business of the regulated enterprise; and,
- Continuing monitoring and enforcement of rules and orders.

The single most important characteristic of a successful regulatory commission is its independence. A commission should be independent of political and industry influence. Capital markets are typically very concerned with the political and regulatory environment faced by any company. This is especially the case in the electric industry which is a highly capital-intensive industry. Also, because the electricity sector cuts across virtually all strata of the public, it has the potential of becoming the focus of political interest. Because of this, the capital markets have a heightened concern over regulatory and political risk. Capital markets have higher confidence in the utilities being finance where the commission has greater independence from the political process, both as a matter of explicit policy and through the demonstrated track record of the commission. Independence is viewed as fundamental to assuring the continued financial viability of the utility.

Higher risk translates directly into higher financing costs and higher retail prices.

Because the new commission will often be faced with tough pricing decisions that may not be well received by the public, the commission must achieve a high level of institutional acceptance by the

public. Members of the public are often highly skeptical of their government. As a result, the new commission may be viewed as just window dressing to obscure an underlying political or governmental activity. The ability to demonstrate independence from politics is a necessary component of achieving public acceptance. The most importance tools for securing public acceptance are:

- Public Education;
- Administration of an open and transparent process;
- Validation of consumer participation in the process; and
- Demonstrated rationale for decisions of the commission.

Independence of the Commissioners

An additional point, deserving special attention, is the issue of independence of the commissioners themselves. The public must have confidence in the individuals who serve as commissioners. A commissioner must maintain a degree of judicial stature in the eyes of the public. This means maintaining a special degree of integrity through both rhetoric and action. The commissioners should be bound by a strong ethical code. The key components of such a code include:

- Prohibition against any ownership, gratuity or other material economic interest in the regulated utility;
- Prohibition against any ownership, gratuity or other material economic interest in any consumer or consumer group affected by any commission decision;
- Prohibition against *ex parte* communications with parties in a pending matter; and,
- Prohibition against political influence or interference.

Because no regulatory commission exists prior to restructuring, the commissioners and its staff may be initially be drawn from within the electric sector. While this may be necessary and, indeed, desirable, it is equally desirable for the new commission to establish its independence from the industry it regulates. Creation and activation of the new commission should be viewed as one of the *first* steps in restructuring. By activating the commission very early in the process, the commission is able to gain important and timely first-hand experience with the industry it will be regulating. In addition, this allows the commission to establish, develop, and implement its independence from the utility. This is especially important because of the commission's broad public interest mandate.

The commission plays a unique role in synthesizing the competing interests of the utility, the financial community, the customers and government.

Commission Staff

It is imperative that the commission have sufficient staff to carry out its duties and mandates. Staffing requirements, and their associated functions, of a commission include:

- Administrative Staff:
- Budget;
- Personnel; and,
- Records and archives.
- Advocacy Staff, including, attorneys, economists, accountants, engineers
  - Rate and tariff analysis;
  - Development of public policy issues and positions; and,
  - Representation of consumer and other public interests, especially those not otherwise represented in any given proceeding.
- Hearing officers or administrative law judges:
  - Conducting hearings; and,
  - Recommending decisions to the commission.
- Commission Advisory Staff, including attorneys, economists, accountants and engineers:
  - Direct expert advice to commissioners;
  - Policy analysis; and,
  - Rate and Tariff Analysis.

A regulatory commission has attributes very different from most governmental agencies. Because of the highly technical nature of the subject matter, a commission is typically staffed by a large number professionals (attorneys, engineers, etc) and very few of the typical governmental bureaucrats. The nature of the staffing requirements and the need for real independence from the industry, customers and politics call for adequate compensation schedules. The type and level of compensation for the commissioners and staff should be significantly higher than that typical of other government agencies. In addition, the best practice is to prohibit the commissioners and the staff from having any form of compensation or other benefits directly or indirectly related to the electric industry or any other party affected by the commission's decisions.

Commission Process

It is imperative that the commission establish rules that are open and encourage public participation. Not only does public participation increase public confidence in the commission as an institution, experience has shown that public participation improves the overall end result of regulation. Rules that encourage participation by all interested parties will help to ensure that the commission fully

understands the issues of importance to those parties, as well as the impact of the commission's decisions.

To support and implement a viable public process, the commission's rules should address the following key subjects.

- Rules of procedure;
- Minimum data and format requirements for filing a tariff/rate case;
- Rules for disposition of consumer complaints;
- Service quality rules for the utility;
- Annual and other periodic disclosure and reporting for utilities;
- Rules for enforcement of the commission's decisions;
- Rules for system planning issues (See *Integrated Resource Planning: Chapter 11*);
- Administrative rules and procedures/ Appeal procedures and,
- Rules for competitive bidding for resource acquisition (See *Independent Power Production and Competitive Bidding: Chapter 2)*.

Chapter 5

Cost-Based Ratemaking

Objective of Rate Setting

Rates should be set so as to enable a utility a reasonable opportunity to recover prudently incurred expenses (including investment) and a fair return on the remaining cost (the un-depreciated portion) of investment.[6]

Mechanics of Traditional Rate Setting

The general mathematical formula for determining rate levels begins with a computation of total revenues (revenue requirement) necessary to meet demand for service, as follows:

$$RR = E + d + T + [r (V - D)]$$

where:

RR =	Revenue requirement, or total revenues
d =	Annual depreciation expense
T =	Taxes
E =	Expenses
V =	Original book value of plant in service
D =	Accumulated depreciation
	Note: (V - D) = "Net rate base"
r =	Weighted average cost of capital

> *Test Year*. The period of time under examination. In many places, rates are set using a *historic test year*, adjusted for ***known and measurable*** changes. The exercise yields an *adjusted test year* cost of service that is meant to be a predictor of a company's revenue needs during the period rates will be in effect.

The simplest way to set rates would be to divide the revenue requirement by sales volume (kWh), as follows:

$$Rates = RR/Volume\ of\ sales$$

6 Based on U.S. practice.

Although actual rate-setting is somewhat more complicated than this (for example, customers are grouped according to their usage patterns, and the revenue requirement is allocated among those classes, according to principles of cost causation), but the essential mathematical relationship holds: the product of rates and sales is the revenue requirement.

This rate-setting exercise assumes that there is a direct relationship between a utility's revenue requirement and the rates it should be allowed to charge. This is, of course, true, but bear in mind that regulators have traditionally set ***rates***, not revenues (See Chapter 8 for more recent trends toward revenue based regulation). The revenue calculation is merely a tool for converting rates into expected revenues. Since rates are set to cover costs, regulators devote a good deal of attention to the constituent elements of a company's cost of service.

Elements of Rate Setting

The three major components of an exercise in rate-setting are rate base, return on rate base (sometimes referred to as return on investment), and operating expenses. These combine to create a *cost of service*, *i.e.*, the calculation of total costs that total revenue is intended to cover.

Rate Base. Rate base, broadly speaking, consists of those long-lived investments made by the utility to provide service. They include, among others, utility-owned generating facilities, other buildings, poles, wires, meters, vehicles, computers, and so on.

Depreciation. Rate base is intended to approximate the current value of capital goods that are "consumed" over periods of more than one year. The consumption of these goods over time requires that they be paid for over time. This consumption is called depreciation.

There are a variety of depreciation methods. A simple and common one is straight-line. If an asset costs $100,000 and has a 20-year life, we will depreciate it at a rate of $5,000 per year (100,000/20). After the first year, the asset will be worth (or its remaining value will be) $95,000, after two it will be 90,000, and so on.

Expenses. Sometimes referred to as annual or operating expenses or cost of service. These are the company's current annual (test year) costs of operation.

Operating expenses include power or production costs (including delivery costs), wages and salaries, benefits, insurance, maintenance, administration and general expenses, billing costs, legal and regulatory expenses, and taxes.

Power costs can represent anywhere from 50-90% of a company's total cost of service. They consist of the operating costs (including fuel costs) of the generating facilities that the company operates, the total annual costs of purchased power, operations and maintenance costs, and the costs of delivering

that power (wheeling charges and any other variable costs caused by transport). The capital costs of production and delivery facilities are, as mentioned above, included in rate base.

Depreciation is also an expense, though it is a *non-cash* expense. It represents the return ***of*** (not on) investment in rate base. Return on rate base is added to operating expenses and depreciation to calculate a total cost of service. Not included in this set of expenses is interest on debt or dividends on equity. These costs are covered by return on rate base.

Return on Rate Base. This represents the monies to be returned to investors for the use of their investment to purchase assets to meet demand for electric service. There are two major components: one, the cost of (demanded rates of return on) investment funds and, two, the relative amounts of debt and equity. Return on rate base is the weighted average cost of capital that the company has to pay.

1.) Costs of borrowing
Debt - Long- and short-term bonds and notes.
Equity - Common and preferred stock.

2.) Capital Structure
The relative shares of a company's total capitalization.

Rate Design: Pricing for Regulated Services

What should unit prices look like? How can the general objectives of economic efficiency and fairness be met?

Rate Design: To a regulator, rate design is the *structure* of prices, that is, the form and periodicity of prices for the various services offered by a regulated company. The two broad categories of pricing are usage charges and fixed, recurring charges.

Objectives of Rate Design

The general objectives of economic regulation inform the rate design process. More specifically, we want to set economically-efficient prices (*i.e.*, prices which reflect, to the greatest extent possible, the long-run marginal costs of service), while simultaneously enabling the regulated utility a reasonable opportunity to recover its legitimate costs of providing service (including return on investment).

The particular problem faced by regulators is that the legitimate historic (accounting or embedded) costs that a utility incurs are to be recovered in rates, but these costs may only bear a passing resemblance to the forward-looking long-run marginal costs that form the basis of economically efficient prices. The reconciliation of the need to cover historic costs with the desire to set economically efficient prices, and then to meet other objectives of regulation (such as fairness and

low-income protection), requires much judgment. The several and sometimes competing rate design goals can be categorized as follows:

Revenue-Related Objectives:

- Rates should yield the total revenue requirement;
- Rates should provide predictable and stable revenues; and,
- Rates themselves should be stable and predictable.

Cost-Related Objectives:

- Rates should be set so as to promote economically-efficient consumption (static efficiency);
- Rates should reflect the present and future private and social costs and benefits of providing service;
- Rates should be apportioned fairly among customers and customer classes;
- Undue discrimination should be avoided; and,
- Rates should promote innovation in supply and demand (dynamic efficiency).

Practical Considerations

- A rate design should be, to the extent possible, simple, understandable, acceptable to the public, and easily administered.

Embedded Costs

As stated at the beginning of this chapter, rates are intended to recover the prudently incurred, embedded costs of service; the costs that the utility actually pays. These costs are allocated among customer classes; consumer groupings typically formed according to their patterns of usage. Similar usage causes similar costs, thus enabling class-specific assignment of those costs. Among the costs to be identified and functionalized are energy and capacity, transmission, distribution, customer service, and others. The methods for cost assignment can be complex, but in the end the objective is to have those customers pay the costs of the investment and operation that care incurred to provide them the service.

Of course, not all costs can be easily categorized (for example, the joint and common costs that are necessary to the overall operations of the firm but are not directly necessary to the provision of any particular service), and so apportioning them among customer classes becomes an exercise in judgment. Regulators may decide in certain instances to allocate a cost according to a class's share of total energy usage, and in others according to class coincident demand for capacity. Regulators are guided by notions of reasonableness and fairness when making these decisions.

Once the cost of service is allocated among customer classes, rates can be set according to the mathematics already described. Each customer class has its own revenue requirement and expected volume of sales. Typically, however, not all of the costs of service are collected in energy charges, some (usually small) portion of them may be recovered through fixed, recurring fees called customer charges. These are billed whether the customer uses any electricity or not; the charges are intended to cover the costs of utility activities that are unrelated to usage, for example, metering, billing, and collection. In the main, however, the majority of costs are recovered through charges that vary with a customer's usage. The two main categories are energy and demand.

Energy charges provide revenues on a per-kWh basis. Demand charges provide revenues on a per kW basis. It is common for low-usage customer classes to pay energy-only charges, and included in those fees are the costs of capacity needed to serve that customer group. High-usage customers often are billed for both an energy and demand; their capacity costs are separated from their energy costs. While the costs of metering for this kind of service are higher than energy-only metering, the savings (for both the customer and utility) that flow from the customer's ability to respond to the clearer price signals invariably exceeds those costs.

Marginal Cost Pricing

As discussed in Chapter 3, the marginal cost of service is the cost incurred to serve an additional unit of consumption at a particular time, and it represents the cost to society to satisfy that incremental demand. By the very nature of monopoly, however, it is unlikely that at any particular time marginal cost will equal embedded cost (which is, in large measure, an average historic cost), and thus setting prices strictly equal to marginal costs will fail to generate the appropriate level of revenues for the company. Whether they are too high or too low will depend on the relationship of the utility's historic costs to the current costs of fuel and new technology.

The task of identifying and functionalizing the utility's costs for the purpose of determining its marginal cost of production at specified times is, in many ways, quite similar to the work done to determine embedded costs. Unlike an embedded cost study, which in effect calculates the average cost per unit of demand for each class and period under examination, a marginal cost study measures the cost of producing a defined increment of demand for each class and period specified. Total cost is only relevant insofar as marginal cost is a measure of the change in total cost as demand changes. In certain cases, particularly at times of peak demand when additional capacity may be called for, marginal cost will often exceed average cost; at other times, marginal cost may be significantly less than average cost, since typically the only costs incurred to serve incremental demand off peak are variable fuel and maintenance costs.[7]

[7] One complexity, which we can only briefly discuss here, is the relationship between generation capacity and energy. It affects both the allocation of embedded costs and the calculation of marginal costs. Since a utility is under a legal obligation to serve, it follows that it must install sufficient capacity to serve all customers *on demand*. This means,

therefore, that capacity needs (and costs) are driven by peak demand. If a utility's only obligation were to meet peak demand, then it would install only the least-cost capacity. However, a utility also must serve energy needs at other times, and it is an unhappy fact of electric generation technology that as capacity costs decrease variable operating costs increase. The total costs and average (per unit output) costs of the different generation technologies vary as output varies; in certain cases, average costs increase as output increases, and in others they decrease. There is, therefore, a trade-off between capacity and energy costs that system planners must consider when building (or purchasing) new capacity, if they hope to minimize total costs. Which technology (or contract) to use depends on how much energy it will be expected to deliver; as load factor of demand to be served (the ratio of energy demanded in a period to the maximum possible energy demand in that period) increases, so usually do the capacity costs of the units that can most efficiently serve that load. In these instances, the unit serves both capacity and energy needs, and the cost of that capacity which exceeds that cost of the lowest-cost form of capacity has in fact been incurred to serve energy needs. This is sometimes referred to as the capitalization of energy costs, and it has important impacts on rate design. It is appropriate to recognize those incremental capacity costs as energy costs for the purpose of designing rates; as a general matter, they should be included in kWh, not kW charges.

Once calculated, marginal costs are then treated as prices and are multiplied by expected units of demand in the various periods under study. This yields the expected total revenue that the company would collect under a marginal-cost pricing regime, which can then be compared to the embedded cost revenue requirement. How prices should then be adjusted depends on whether the marginal cost revenues are greater or less than the embedded.

There are a variety of ways to reconcile marginal cost prices with an embedded revenue requirement. Rates differentiated on the basis of time of day, week, or year of use are quite common, and often are designed to reflect marginal costs at times of peak demand (when costs are high) and average costs at other times. In this way, the utility's risk of revenue shortfall is lessened, and consumers see the important cost signals at times of capacity constraints. Inclining or declining tail-block rate structures are another option. With these, price changes (inclines or declines) as volume demanded during a time period (say, a month) increases. These may not send as accurate a price signal as will time-of-use rates, but they are generally seen as an improvement over flat, average rates.

In the end, regulators must apply their expertise and judgment when designing rates. Considerations that can inform their discretion include fairness, differences in demand elasticities (willingness to pay), and other public policies (such as low-income support and the pricing of environmental externalities). Distortions that hinder economically efficient outcomes will inevitably creep into prices; this disjunction between marginal and average costs is an unavoidable aspect of natural monopoly. What distortions, and in what magnitudes, then are acceptable? This is one of the central dilemmas of regulation, and there are no easy answers.

Chapter 6

Licensing the Utility

Licensing has traditionally been used by the government to protect consumers and provide a specified level of service or safety, including environmental safety.

Licenses

A fundamental choice confronting all newly established regulatory commissions is whether to rely on the license[8] or on generic rules as the primary instrument of regulatory control. A license-based system establishes most of the conditions of operation in the individual license documents. A rule-based system promulgates most conditions in rules of general applicability, supplemented by decisions in specific "cases".

In theory, a license-based system has attributes of a contract between the government and the utility, with the terms set forth clearly at the outset, while a rule-based system, offering the advantage of greater flexibility to meet changing conditions, depends for stability on societal concepts of due process of law. In fact, both flexibility and stability are essential attributes of all effective utility regulation, so each system must find mechanisms to assure the apparent advantages of the other. In so doing, they tend to converge - with each having to take on some of the disadvantages of the other in order to secure the advantages. Dispute resolution and the possibility of periodic competitive bidding for the license itself are two important sources of flexibility that can be built into a license-based system.

The issuing of licenses offers both an opportunity for innovative regulation and a serious dilemma. The opportunity stems from the fact that commissions faced by a multitude of duties and expectations may be able to use the license agreements as a substitute for generic rulemakings that they do not have the time and resources to undertake. However, the dilemma inherent in this opportunity is that license agreements, unless carefully structured, can become straitjackets as regulatory concepts and national priorities change over time. This concern will be exacerbated if regulators focus too heavily on suspension and revocation of licenses (rather than fines or ratemaking techniques) as the principal means of imposing penalties. Revocation means little unless other qualified operators are available to step in, and it is not suitable as a remedy for any but the most severe shortcomings.

[8] Sometimes called "franchises" or "concessions."

In short, license agreements cannot be both a guarantor of full financial stability for the incumbent and an effective instrument for the introduction of a measure of competition and of customer protection. Financial stability and effective competition only go hand in hand for the firms that are performing well. License agreements should aim instead to reconcile an assurance of fair treatment and professional dispute resolution with the flexibility to adapt to circumstances and needs that are certain to evolve quite rapidly.

At least three types of bidding frameworks are possible:

- **Once-for-all license contracts:** Under this approach, the license would be awarded competitively only once, at the outset. The bidding would be in the context of a contract that would state as specifically as possible all of the terms and conditions of service. Because such a contract for the distribution of electricity could not possibly anticipate all future contingencies, it would necessarily be incomplete - with mechanisms for adaptation to unforeseen circumstances. Such mechanisms would be likely to involve the regulatory agency in some manner.

- **Incomplete long-term license contracts:** Under this approach, the license would be awarded for ten years or longer but would be subject to competitive bidding when it came up for renewal. This would require development of both a formula for the transfer of undepreciated investment to a successful bidder and an agreed upon mechanism for settling disputes both during the life of the license and at the time of renewal.

- **Recurrent short term license contracts:** Under this approach the license would be subject to competition at much shorter intervals - perhaps as little as three or four years. This would avoid many of the difficulties inherent in the drawing up contracts that must either foresee contingencies unfolding far into the future or count on regulators to resolve the disputes. It would maximize the license holder's sense that poor performance could lead to rapid displacement. It would increase the need to have an effective asset transfer process in place, since such transfers might take place far more frequently. Such short intervals require strong and reliable assurance that the undepreciated prudent investment would be fully recovered if the license were transferred. Otherwise necessary investment in long-lived assets would be discouraged.

The license cannot merely go to the highest bidder. Such an approach does no more than capitalize expected monopoly profits, to the immediate benefit of the license grantor and the eventual benefit of the license holder. Either the license must itself contain the formula by which prices will be limited or bids should be judged on the basis of some criterion such as the lowest per unit price or revenue requirement within specified service quality parameters.

Argentina seems to have the most advanced license bidding system at this time. It requires that distribution licenses be awarded competitively at the outset and that a controlling share be rebid at ten-year intervals thereafter, or at anytime that a license is terminated for nonperformance. If performance has been satisfactory, the current license holder may be among the bidders and may retain the license by outbidding all others. In that event, no money changes hands. While an incumbent could retain control with an artificially high bid, such a bid would deny it any opportunity to sell on favorable terms.

The Argentine system appears to offer substantial incentives to operate the system well within the ratesetting framework established by regulators. Since rates are regulated (on a price cap basis) and licenses can be terminated for poor performance, customers also have protection if regulation is well administered. The mechanism by which prices are reviewed and reset just prior to the ten-year offering will be critical in determining the extent to which benefits are shared between customers and investors. Since Argentine licenses have not yet reached their tenth year, no actual experience with a full cycle is yet available.

As the Argentine example shows, license competition clearly is not a complete substitute for regulation. Because of the impossibility of developing license agreements that anticipate all contingencies and because of the likelihood of disputes during the periodic license rebidding, ongoing need for regulatory supervision is unavoidable. Such supervision by a professional regulatory body may reduce the politicization that has occurred in the cable television industry in the U.S., where this process has more often than not been overseen by city councils.

Finally, it is important to acknowledge that we have had little meaningful experience with electric utility license competition. This is a considerable argument in favor of short-term contracts, at least initially, as long as the necessary assurances of full recovery of prudent investment at the time of transfer can be provided. Indeed, short-term license contracting could be the first step in a transition toward consolidation of distribution entities, since the more successful distributors would be among the most obvious candidates to bid for the less successful. Short-term contracting could also smooth a transition to rule-based regulation as regulatory agencies mature, although such a strategy would have little appeal if license competition under the supervision of a capable regulatory agency were working well.

Licenses as a Supplement to Regulation

For licenses to be effective instruments of regulatory control, the following conditions should apply:

- The license duration should be limited, especially in uncertain conditions, to a few years. Even under conditions of relative stability it should not exceed twenty years;
- The regulator should be able to terminate the license for noncompliance with license conditions following appropriate notice, an opportunity for correction and a public hearing.

However, this power should be supplemented by a system of lesser penalties, perhaps through the tariff-setting process;

- Transfer of the license without regulatory approval should be prohibited;
- The licensee should have to supply a complete, audited financial statement annually and the regulator should have complete access to the licensees books and records at any time, as well as the power to compel the prompt furnishing of all necessary information;
- The property of the licensee should be subject to inspection by the regulator at any time;
- The regulator should have the power to resolve any disputes arising between the licensee and its customers, and perhaps also between the licensee and its suppliers of fuel and electricity;
- The license conditions could include targets and time requirements for extension of service in countries where many people lack electricity;
- License conditions could also include goals as to energy efficiency, metering, loss reduction and collections;
- The license could specify a surety bond as a further guarantee of good performance;
- The license should specify that service should be according to the highest and best standards of the industry, or some other acceptable standard, and more specific standards as to service quality and customer rights could also be included;
- The license should include a requirement, in the event of termination of the license, that the holder sell to the successor, probably at prudent original cost depreciated, as determined by the regulator;[9]
- The license should be subject to a power to compel license consolidations - upon payment of appropriate compensation - when economic efficiency or service reliability would thereby be enhanced;
- The license-awarding authority should be national or regional in scope and should have no significant economic stake in the success of the license.

A final, critical issue is whether to provide a pricing formula (i.e., cost of service, price cap, or revenue cap - together with automatic adjustment clauses, if any) in the license agreement. Such provisions substantially increase investor certainty and may be quite workable if the contract is not for a long period of time, allowing for modification according to the lessons of recent experience. The processes of bidding and negotiation that would accompany the awarding of such a license would probably be more informative than the rate cases that would otherwise likely occur. However, the viability of any approach that depends for its success on the presence of several entities desiring to provide electric service is uncertain in countries requiring substantial new investment to attain minimally satisfactory standards.

[9] A sale at market value is also possible under a system of performance-based regulation that shares efficiency gains with customers and caps the prices to be charged under the new ownership. Under rate-of-return regulation, where investors receive their capital back through depreciation and their return is figured into the price, a market price above book values produces a windfall for investors.

Still, license competition is most likely to be successful when the technology is well developed, demand is well defined, the need for unique skills is slight and displacement of an incumbent license holder - if necessary - can be achieved without serious asset valuation problems. As to electric distribution systems generally, these conditions can be substantially met, even though the unsatisfactory state of record-keeping in many electric systems will mean that the original cost of past investments will be difficult to establish.

The potential for licenses to assist regulation and stimulate efficiency and competition has not yet been explored in much depth. Very careful attention should be paid to the drawing of the early licenses to be sure that valuable options are not inadvertently foreclosed.

Addendum

A variation on the concept of license regulation and competition is the application of the bidding concept to a subpart of the distribution utility mission. For example, the provision of service to low-income communities in the U.S. for a fixed sum or a fixed sum per customer has been considered by some regulatory commissions. So too have the functions of serving customers who do not choose a specific supplier or of providing certain types of energy efficiency services. In countries with substantial unserved populations or substantial groups not being metered, the task of serving these groups within a price ceiling could be done through competitive bidding even if the license itself were not awarded on such a basis. It is possible that innovative solutions to the special problems associated with serving customers in this category would emerge through such a process.

Chapter 7

Market Prices, Public Policy Goals, and Subsidies

Market Prices

As emphasized in Chapter 5, governments, regulators, and utilities have found that rates must be set to reflect the costs of providing service to particular customer classes in order to meet several important objectives:

- To collect adequate revenues to operate the electric system reliably and to attract necessary capital for system maintenance and expansion;
- To send efficient price and consumption signals to electric consumers; and,
- To allocate the costs of the system fairly among customers.

These considerations underlie well-established policies of cost-based rate-making, with cost initially set at the long-run marginal cost of providing particular services (modified as necessary to produce sufficient revenues to cover the utility's embedded cost of service). Importantly, such rates are also intended to approximate the price that a well-functioning, competitive market would send to consumers and producers.

Public Policy Goals

Cost-based, and market-like rates are an essential starting point for utility rate-setting, but public policy also has a proper role to play in setting utility rates and services, for at least two reasons. First, market failures significantly affect the production, delivery and consumption of electricity. For example:

- Fossil-fueled power plants are among most nations' most polluting industrial facilities, and the cost of that pollution is rarely included in the costs of production;
- The uneven distribution of income in many locations distorts the demand curve for electricity, since many potential customers simply cannot afford to purchase it;
- The transmission and distribution network is a natural monopoly service, much like a public highway system; individual customers cannot build it alone;

- Customers lack much necessary information for making informed choices about electricity services, especially demand-side and efficiency options, and the transactions costs associated with conveying this information are very high; and,
- Individual customers appear to have very high discount rates for certain kinds of investments, including efficiency investments much higher than the social discount rate used by governments, utilities, and regulators to evaluate utility investments proposed on behalf of those same customers.

In addition to dealing with or surmounting these market barriers and failures, governments rightly view the electric system as a proper means of advancing other public policy objectives. As a key element in a nation's infrastructure, electric systems have long been recognized in both legal and political decisions as industries affected with a public interest. Electricity policies are important elements in governmental programs for economic development, agricultural production, and rural and social development. Electric generation resources and fuels have important national energy policy consequences, and often impose very large environmental costs across large regions. For all of these reasons, governments and regulators recognize that electricity is not just another commodity.

The challenge to decision-makers is in *balancing* the conflicting goals set out above: on the one hand, adhering to the discipline of cost-based rates that reflect market realities; while on the other hand, setting policies to overcome market failures and promote important public goals.

Subsidies

Utilities, governments, and utility regulators are often called upon to deliver low-cost electric services to particular classes of customers (for example, low-income households, and irrigation users), or to individual customers, such as important industries, politically powerful individuals, or government agencies. The breadth and depth of such decisions can raise serious problems for the entire electric system.

Improper subsidies:

- Encourage inefficient consumption by the subsidized consumer. Why invest in efficient technology, co-generation, or efficient fuel substitution if electric service is very cheap?
- Discourage consumption by other users, whose rates are raised to pay the subsidy;
- Can slow economic growth by using limited electricity supplies in low-value end-uses rather than higher-value applications;
- Promote uneconomic bypass decisions (e.g., on-site generation) by customers whose rates are raised to pay for subsidies to others; and,

- Can impair the credit-worthiness of the utility or the governmental agency that is supporting the subsidy, and their ability to attract financing for new electric system investments.

Subsidies Can Be Defined in a Variety of Ways

Customers and policymakers often consider a rate a subsidy if the price charged to one customer is lower than rates charged to others on the assumption that this shifts costs unfairly to other customers. This may or may not be true, depending upon whether the rate differential is justified by a differential in the costs of serving the customers in question.

Economists generally agree that a rate does not confer a subsidy unless the price charged is below the long run marginal cost (LRMC) of providing the service in question. In many electric applications, average rates are above LRMC, so rate discounts can be justified on this basis. But there are two other considerations: (a) The utility's LRMC may be lower than the LRMC on a total societal basis when unpriced environmental pollution or other externalities are considered; and (b) discounts to some customers will raise rates to other customers if the discounted consumption is consumption that would have occurred in any event at the normal rate.

Utility managers and regulators face persistent pressure to approve or tacitly ignore subsidies in many forms. Many should be resisted, including:

- Utility political and charitable contributions;
- Discriminatory rates within a customer class;
- Class cross-subsidies extreme discounts to public facilities, private industries, residential or agricultural users, or other favored customer classes.

Discounts and Economic Development Rates

In distinguishing between justified discounts and unjustified subsidies, economic development rates provide a useful borderline example. These rates are often sought by industries and governments in order to promote new private sector investment and employment. Policymakers should support these rates only when their investment and employment objectives can be obtained without unfairly imposing additional costs on other customers. To avoid cost-shifting, economic development discounts will be justified only where:

- The discounted rate exceeds the utility's LRMC (too often regulators wrongly use SRMC as the price floor);
- The new sales are incremental (i.e., they aren't reducing income from pre-existing sales volumes); and,
- The incremental consumption would not occur with out the discount (the "but-for" test);

Moreover, in order to minimize the total costs imposed on the utility system over the long term, and to minimize the need for continuing discounts, the new load should use efficient end-use technology. Efficient building and equipment standards are an important condition of economic development discounts, and should be required as part of the discount offer or regulatory approval.

Discounted (Economic Development) Rate Example

Industry proposing to build or expand operations in the service territory with employment and investment benefits; Industry may locate elsewhere (or not build) without lower electric rates. Assume existing tariff rate of $.07/kWh and proposed discount rate of $.05/kWh.. If marginal cost is $.04/kWh, the discount may be justified. The discount rate still exceeds marginal cost by 25%, and the industry's sales will contribute to the utility's fixed costs, reducing costs borne by other customers.

Other important considerations: Can we tell whether the additional consumption really meets the "but-for" test? Often, it's impossible to tell. For this reason, a healthy margin above LRMC is necessary to avoid a practice of pure game playing by favored users. Key to economic fairness is being able to ensure that the rate charged will exceed marginal costs. Additional moderating features are also desirable, including:

- A pre-scheduled phase-down of the discount, so that its expiration does not cause rate shock to the discounted customer, and raise political problems in the future;
- A limited term to the discount, so that over time all users are brought to common tariffed rates without discrimination;
- Efficiency standards, so that only efficient load growth is supported by these explicit discount policies; and,
- Independent regulatory review of proposed discounts to minimize political pressure and insider dealing at the utility, and to ensure other customers that they are being treated fairly.

Other Potentially Justified Discounts

As in the case of Economic Development Rates, discounts may be justified in other instances where lower-cost electric service advances well-established public policy goals. Examples may include: rural electrification; service to low-income households that would otherwise not be able to afford electricity; and support for end-uses that are key to national development, such as agriculture and education. Any such discount proposals should be analyzed against the same criteria set out above:

- Are these sales that would not have occurred at full tariffed rates in the absence of the discount?
- Will revenues exceed marginal costs?
- Is the consumption efficient?

- Do the public policy goals supported through this program justify an exception to the general rules regarding posted, universally-applicable tariffs?

Chapter 8

Performance-Based Regulation

All regulation is incentive regulation; an important skill for regulators to develop is to understand what incentives are created by any particular regulatory scheme. Thus, to understand performance based regulation (PBR) one needs a good understanding of the incentive characteristics of traditional cost of service regulation.

Performance-based regulations generally come about due to dissatisfactions experienced with cost-of-service or rate-of-return regulation. Some believe that cost-of-service regulation stifles utility innovation by providing a risk with no conditional reward and causes utility managers to be more responsive to regulators than to customers or financial incentives. PBR has also been used by some in order to create a more rational risk allocation.

Components of a PBR

Constructing a PBR consists of three basic steps.

1. ***Define goals.*** This requires a realistic assessment of what types of behavior one wishes to encourage or discourage. It also means addressing the questions of how risks should be allocated between consumers and investors as well as any type of protective measures put in place to guard against unforseen circumstances.

2. ***Develop the structure of the PBR.*** The structure is the most important aspect of PBR that dictates whether the original goals will be met.

3. ***Get the numbers right.*** One could create a properly structured PBR that puts incentives into proper direction, but if the numbers are wrong, the utility or shareholders will be enriched or injured.

Step One: Setting the Goals

The goals of a PBR should be clearly identified and articulated because it is the goals that determine the outcome on many individual PBR issues and options. Among the likely goals are the following:

- To create strong incentives for cost containment;
- To improve incentives for innovation;
- To encourage increased energy efficiency in supply and in end use;

- To encourage increased use of clean and renewable energy supplies;
- To increase customer service and service quality.

Step Two: Develop the PBR Structure

The single most important structural issue is whether the PBR focuses on prices (price caps) or revenues (revenue caps). The following formula can be used to describe either structure.

$$Cap_2 = Cap_1(I\text{-}x) +/- z$$

The cap (Cap_2) (capped prices or revenue) equals last year's cap (Cap_1) times some index(I) (such as consumer inflation) which broadly gauges growth in costs, less a productivity factor (x), plus or minus items that are not covered by the PBR (z factors).

Under either the price or revenue approach the caps are typically set for a fixed period of time. The cost cutting incentives for price and revenue caps are identical. The main difference is that price caps may also encourage increased sales and hence discourage end-use energy efficiency. With revenue cap approaches, the incentives to invest in energy efficient range from neutral to significant.

Revenue caps make the most sense if one of the goals of the PBR is to encourage end-use energy efficiency and if cost does not vary with volume. Price caps make the most sense if end use energy efficiency is not a goal and if costs vary with volume. With respect to distribution utilities the data are fairly clear that costs do not vary with kWh volume, making revenue caps the most sensible approach. (Costs may relate to growth in the number of customers served but not to the growth in electricity use per customer.) The primary difference between price caps and revenue caps is the incentive created for demand-side management or end-use energy efficiency. With the price caps the utilities have an incentive to increase sales and have a very powerful disincentive to encourage or directly invest in end-use energy efficiency.

"Z" Factors

Most PBRs contain so called "Z factors". Z factors are events or cost items that fall outside the scope of the normal operation of a PBR. These may include items such as adjustments for changes in costs due to new laws or cost adjustments for items outside a utility management's control. Many PBRs include a long list of potential Z factors. Regulators tend to limit Z factors to items that are outside of a utility's management control and items of fairly substantial economic consequence. Whether a particular risk is outside a utility's control is not the most important consideration. The most important factors to consider in approving Z factors is a clear understanding of what risks you want the utility to bear. These may or may not be items that are outside of their control. For example, weather is clearly outside the control of utility management, but if utilities bear the weather related risk it will influence their decisions on what types of power plants to construct and perhaps even how to construct a transmission and distribution system. Similarly, if the cost of future environmental

control is made a Z factor, utilities will not bear the risk of future changes in environmental laws. Although certain risks may be beyond management control, they nevertheless fall right within the range of risks that businesses in competitive markets must bear. Management should, therefore, be charged with managing the exposure to such risks through investment decisions and cost controls.

PBRs should include specific provisions for service quality. (For details on establishing PBR service quality criteria see *Chapter 10: Consumer Protection Issues*.) The easiest way for utilities to increase profits under any form of regulation is to cut service quality while maintaining high prices. Regulators may wish to add incentive or penalty provisions for service quality items such as outage hours, the proper response to customer complaints, and safety. Of special note is the approach taken in the United Kingdom where a long list of service quality requirements is imposed. Violation of service quality standards in the UK often results in payments directly to the affected customers. This penalty provides strong incentives for better service quality. It also properly compensates the injured party for any degradation in service quality.

The Strength of the Incentives

For either traditional cost-of-service or more recent performance-based regulatory approaches the power, or strength of the incentives is determined by two factors. The first is the marginal impact of performance on profits. For example, if a cost savings of $1.00 results in an increase in profits of $1.00 the incentive to cut costs is as strong as possible. If $1.00 of savings produces a $.50 increase in profits the profit incentive, or cost cutting incentive, is obviously dulled. Similarly, if $1.00 of increased revenue increases profits by $1.00 the incentive to increase revenues is much more potent than if the increase in profits is only $0.25. This factor is discussed further in the next section on Sharing Mechanisms

The second factor is the time lag between regulatory or rate reviews. For cost-of-service regulation the time limit can be either stated or undetermined. In most jurisdictions there is no set time limit in between rate cases. Performance-based regulation generally includes a fixed number of years that a particular scheme will stay in place, typically three to five years. The longer the time period between rate reviews, the stronger the incentives. Thus, if $1.00 of annual savings can produce $1.00 increase in annual profits, the cost-cutting incentive is much more powerful if the profits are realized for five years than a system in which the $1.00 in profits lasts just a single year. (It goes with out saying that at the time of the review of the PBR the savings would be reflected in new prices and would hence no longer flow to the utility or shareholders.)

Assuming that a goal of regulation or regulatory reform is to increase the incentives to cut costs and improve service the question could be asked which approach, cost of service or PBR, is better? The answer is not clear. It depends on the details of the particular regulatory system. Performance-based regulation, at least as generally practiced thus far, is not necessarily more powerful than traditional cost-of-service regulation. Most performance-based regulatory schemes have sharing mechanisms

where the benefits of any costs savings after some limited period are shared between consumers and shareholders. This tends to dull the incentive characteristics.

Sharing Mechanisms

An important feature that influences the strength of the incentives created by a PBR is the presence and design of any sharing mechanism. A typical U.S. PBR allows utilities to keep 100% of any savings it can achieve, provided that the rate of return is within a predetermined range. Outside of this range PBR sharing mechanisms split the costs or benefits of the PBR between customers and shareholder. For example, there may be no sharing if the ROE is within 1% of a specified level, say between 9 –11%. Between 1%, and 2%, customers and shareholders may share the benefits (or costs) in some pre-specified way. Beyond 2% there may be even more sharing.

There are many variations of sharing mechanisms. Some, like the one described above, are symmetrical, others are more one-sided. The specific design is often a tradeoff between different interests and theories. In general, the range within which there is no sharing is quite narrow, meaning that the necessity to share benefits kicks in quite easily. The less sharing the stronger the incentives for the utility to cut costs, thus if the utility saves $1.00 it must share 50% of the savings with consumers.

Fuel Adjustment Clauses

Fuel adjustment clauses (FAC) are common in many regulatory schemes. Although the details differ from jurisdiction to jurisdiction the basic operation is to hold utilities harmless from the financial effect of fuel costs. The terms frequently used with a FAC are that fuel costs *flow through* or *pass through* to consumers.

There are many justifications given for FACs, but the fact remains that FACs move in the opposite direction of rewarding incentives to improve performance and cut costs. Fuel adjustment clauses generally remove the incentive for any genuine efficiency, they remove the incentive for reduction of line losses and then to skew the trade-off between capital and operating costs and reduce any incentive for owners to invest in portfolios that diversify fuel mixes.

Step Three: Getting the Numbers Right

The task of creating a good PBR, which we define as a PBR with powerful incentives consistent with broadly accepted goals, is not complete until the specific numerical components of the PBR are reasonably set. This entails several important tasks.

- The starting point must be reasonable. The general format of a PBR is to set prices or revenues and then for a specified period of time prices or revenues are automatically adjusted according to prespecified rules. At the outset of the PBR initial prices or revenues must be set at a reasonable

level. The most common approach is to start with prices or revenue set after a full cost of service review.

- During the PBR period, prices or revenues may be reset using a formula set in the PBR but costs are not reviewed until the end of the PBR period. Thus the first step in getting the numbers right is to be sure that the initial prices or revenues are reasonable.

- The PBR formula must use the right inflator and coefficients. The most common formula for a PBR adjusts prices or revenues by Consumer Price Index (CPI). CPI is a measure of inflation and in theory the inflation measure used should be a reasonable measure of the costs that are subject to a PBR. Thus if a PBR is to apply to a wires-only company, an inflation index that is heavily weighted toward fuel cost would be a poor choice.

- The X factor is a productivity factor that measures the extent to which the costs for the utility in question rise faster or slower than the inflation. Thus, if a review of historical information showed that the utility has consistently kept its growth in costs 1% below the CPI, a reasonable PBR formula might be CPI - 1%.

Conclusion

PBR may or may not be an attractive and efficient way to regulate a utility. The key steps to creating a desirable PBR is to clearly articulate goals, adopt a PBR structure that is consistent with the goals, and work hard to get the numbers right so neither the utility nor consumers are unjustly enriched.

Chapter 9

Environmental Issues

Background

Outputs from electric power plants affect the air, lakes and streams, land, animal habitat, and human health. Unfortunately, these environmental impacts of electricity production can be quite large and they are experienced not only locally and nationally, but their impacts, such as in the case of global warming gases, can be international as well. For most countries, the environmental harm caused by producing electricity is rivaled only by that of rapidly growing transportation sector.[10] Fossil-fueled electricity production is almost always the single largest stationary source of air pollution.

Because of the close link between electricity production and environmental harm, government policy makers are well advised to carefully coordinate economic and environmental policies to achieve the overall least cost, most efficient production of electricity for society with the least necessary environmental impacts. While most governments wish to create abundant low-cost electricity for their citizens and economy, to do so by ignoring the environmental consequences only creates other large costs for society such as human ill health. Thus, it is better to take environmental impacts into account at the time an electricity system is planned or expanded, rather than after the fact when the environmental harm has occurred.

What are the Environmental Impacts of Electricity Production?

The environmental impacts of the electric industry are significant and can cause serious health and environmental damage (*see table on following page for details)*. Environmental damage is experienced as real costs by individuals and by the societies which bear them, yet rarely are they included in the price of electricity.

[10] In most countries, the electricity producing sector of the economy is quite small compared to the sector's share of harmful environmental outputs. For example, in the United States, which has a fully developed electric industry, the electricity production sector is about 2% of the overall economy, yet it causes more than one third of all air pollution.

AIR EMISSIONS FROM FOSSIL ELECTRIC GENERATORS	
EMISSIONS	HEALTH & ENVIRONMENTAL DAMAGE
Sulfur Dioxide (SO_2)	Acid Rain Fine Particles - Death & Illnesses Regional Haze & Pollution in Parks
Nitrous Oxide (N_2O)	Acid Rain Fine Particles - Death & Illness Regional Haze & Pollution in Parks Smog - Asthma & Respiratory Disease Nitrogen Poisoning of Estuaries
Carbon Dioxide (CO_2)	Climate Change
Particulates	Fine Particles – Death & Illness Visibility
Mercury	Fish Contamination Consumption Warnings Poisoning of Wildlife

The most common environmental impact of electricity production worldwide is air pollution caused by the burning of fossil fuels: coal, petroleum and natural gas. Burning coal produces the largest output of emissions per unit of output, petroleum about two thirds that of coal and natural gas about half that of coal. However the relative contribution of each fuel to air pollution varies depending upon the technology (efficiency, heat rate) of the power plant burning the fuel and the quality of the fuel itself. While utilities are not currently required to monitor CO_2, it is still an environmental concern.

Comparative CO_2 Emission Rates		
Technology	**Heat Rate (BTU/KWh, based on HHV)**	**Carbon output lbs/kWh**
Gas Combined Cycle	8230	.26
Gas Combination Turbine	15,040	.49
Coal (conventional with sulfur control equipment)	15,040	.59
Coal Combined Cycle	8980	.51
Oil (steam)	9680	.45
Oil CT	14,020	.64

What Steps Can Regulators Take to Reduce Environmental Harm?

The principles of economics teaches us that resources of all kinds are allocated most efficiently when their full cost are included in prices and distributed in a competitive market. This is as true for electricity as it is for other products and services. To avoid unnecessary damage to the environment, to health and to the productivity of a nation's economy, the actual cost of environmental harm for each potential electricity resource should be factored as completely as possible into the resource selection process. Where competitive markets are used, the best option is to reflect environmental damages in the competitive price. Where government regulators have the responsibility of selecting electricity resources, they should take environmental costs directly and fully into account when comparing the cost of one resource with another. If the cost of environmental harm is not internalized to electricity production, a competitive advantage is created which favors those resources, however dirty, that are most successful in transferring environmental costs to the rest of society.

Investments in renewable energy sources (wind and solar) and in energy efficiency (lighting, building shells, heat systems) will go a long way towards reducing both the cost of electricity and environmental harm.

A full cost comparison of all supply-side electricity production projects alongside all demand-side energy efficiency projects will effectively yield the least cost, least environmental harmful portfolio of electricity resources. (See, Chapter 11: Integrated Resource Planning.)

Methods of Internalizing Environmental Costs

There are three general ways of taking external environmental costs into account when planning or expanding an electricity system: full cost pricing; the use of "adders"; and environmental dispatch of resources. The first, full cost pricing, includes (internalizes) all environmental costs in the price and lets the market (customers or government regulators on behalf of customers) decide based upon value and price, which resource should be developed. This method is the simplest to describe but can be the hardest to do as including the full cost of environmental damage in prices can significantly raise the price of electricity.

The second approach is to take external environmental costs into account when optimizing a resource portfolio by implying or "adding" the environmental cost to the bid price when selecting which resource should be developed next. The adders are not included in the costs passed on to customers, but rather are used only in the selection process. This approach has the effect of passing less than full environmental cost into the price to customers.

Environmental dispatch is the third approach. With this method, the electric system operator dispatches power plants based upon their relative environmental harm, dispatching the cleanest plants first, thereby reducing the total air emission output in each hour of operation. This too tends to pass less than full environmental cost to customers.

Cap and Trade Approaches

Often, environmental regulators will create a standard for controlling pollutants. Environmental standards are much more effective when set on an output basis (e.g., tons of emission per MWh) rather than on a fuel or heat input basis. As pointed out above, the efficiency of the electric power plant has a great effect on the amount of pollution produced. Cap and trade approaches to minimizing pollution can be very effective. A typical cap and trade approach sets an overall cap on the level of permitted pollution (set on a local, national or even international geographical basis) and then encourages affected parties to trade among themselves to most efficiently achieve the required cap. The trades are accomplished through the creation of pollution credits, one credit for each permitted ton of pollution (e.g., SO_2), with auctions or other allocation methods used to distribute the credits initially. Those business which can lower their pollution outputs less expensively than purchasing a needed credit at auction will do so. In fact, some businesses will find that it is most economical to reduce pollution output below required levels and sell their unused pollution credits at auction to the highest bidder.

Environmental regulation which reduces the level of allowed pollution does internalize the cost of regulated environmental harm, but unless the regulation requires complete elimination of all harm, the residual harm remains unpriced.

Economic Decisions that have Environmental Impacts

It is important to be aware that the selection of power production resources is not the only economic decision made by government regulators which have environmental impacts. In truth there are many decisions made routinely by regulators that have direct environmental consequences as shown in the following table.

State regulatory decisions with environmental implications include the following:	
Default Service Pricing	Low default prices mean few shoppers and few green shoppers, few green retailers
Stranded Cost Recovery	Including future costs subsidizes inefficient plants
Distribution Pricing	Average pricing discourages energy efficiency
Rate Design	High fixed charges, low variable charges discourage energy efficiency
PBR	Rate caps, as opposed to revenue caps, discourage energy efficiency
Line Extensions	Subsidized prices discourage off grid options
Consumer Protection, Disclosure, and Education	Labeling, disclosure and consumer education make for informed consumers and larger green markets
Net Metering	Absence increases transaction costs and discourages use of very small renewable energy
Distribution Planning	Needed to assure consideration of cost-effective distributed resources
Interconnections	Lack of standard requirements discourages distributed resources
Siting	Siting requirements affect fuel and technology choice
Green Pricing	Provides captive monopoly customers access to green options
Merger and/or Asset Sales	Can create market power and keep older plants from facing serious competition
Public Funding	Vital to delivery of energy efficiency and renewable energy. How the money is spent matters
IRP	Needed more than ever in states without retail competition
Transmission Pricing, Access, and Priority	May ignore the special characteristics of renewable energy and small facilities
Pool Rules	Bidding rules may ignore the special characteristics of renewable energy, small facilities and energy efficiency

There are also federal restructuring decisions that have significant state input that belong on this list: Transmission Pricing, Transmission Access and Priority and Power Pool Rules.

Conclusion

Regulators need to understand the environmental implications of their electric industry resource selection and other decisions. As a first principle, regulators should strive to do no additional harm to the environment. Where policy options exist that will protect or improve the environment while achieving a desired economic objective, regulators should act affirmatively to protect the environment. Finally, in those countries where continued operation of older fossil plants are at issue, electric utility regulators should establish a close, consultive relationship with environmental regulators to better understand and achieve their environmental objectives.

Chapter 10

Consumer Protection Issues

Providing Consumer Protection[11]

In some countries, there may be consumer protection agencies or other groups who have historically provided consumer representation. In other countries, no consumer protection agencies or group existed prior to the creation of the electric regulatory commission. In these cases, the commission or legislature will have the option of delegating the consumer protection functions to those agencies or groups. In countries that are severely constrained by a lack of resources, consumer protection may be completely delegated to the utility itself. Finally, the new commission may fulfill the principal consumer protection functions.

Where consumer protection agencies exist, they may play a role in electric consumer protection; however, because of the variety of engineering, finance, accounting, and legal skills that may be required to resolve consumer protection complaints, non-specialized consumer protection agencies may not be up to the task of providing adequate services. Even so, the commission should develop a strong working relationship with such agencies to maximize its effectiveness.

A seemingly expeditious approach is to delegate principal consumer protection functions to the utilities themselves. While this may minimize the budget requirements for consumer protection, it is unlikely to provide adequate protection to the public for obvious reasons. Nonetheless, the utilities do represent the first line of defense for consumer protection. As such, many affirmative consumer protection functions should be placed on the utility.

The best practice for the provision of consumer protection is to blend together all available consumer protection resources. However, the principal source for consumer protection will, as a practical matter, remain with the commission. As discussed below, the overall goals and objectives of consumer protection can only be adequately met through a strong commission role. The commission should be the centerpiece of consumer protection. Because of its technical and regulatory expertise as well as its on-going historical perspective of the industry, the commission is well suited for this role. Nonetheless, it is essential that a formal consumer protection advocacy office be established. This office may either be within the commission itself or may be an independent government office.

[11] Consumer protection measures discussed in this chapter primarily reflect those used in the U.S.

The Need for Consumer Protection

Historically, monopoly utilities had little need to develop a strong and responsive consumer protection function. This is especially true of government-owned utilities who lacked a shareholder constituency and who saw no need for developing a positive public image. Certainly, in the case of both government-owned and investor-owned utilities, the monopoly condition diminishes the incentives and needs for the company to assure that the customers are both well-served and satisfied with their service.

In the context of power sector reform underway or contemplated in numerous countries around the world, some form of a regulatory agency, a public utility commission, has been or will be formed to regulate newly reorganized utilities. One of the roles of the commission will be to substitute regulation for the functions of a competitive market. While the principal market function performed by the commission is the setting of prices, every commission must also provide for consumer protection. Regardless of whether consumer protection is explicitly provided for in a commission's enabling legislation, the pragmatic reality is that the commission will become the focal point for the consumer's need for both regulatory protection and a forum in which to be heard. It is, therefore, incumbent upon the commission to articulate consumer protection standards and to provide for resolution of consumer complaints.

Consumer Protection Policy

One of the first issues a commission should address is the policy framework for addressing consumer protection. In other words, what public needs should be served through the commission's consumer protection policies? At a minimum, consumer protection policies should foster the following goals:

- Public access to the commission and its processes;
- Public education;
- Public perception of fairness;
- Fairness in fact;
- Balancing the powers of the parties;
- Efficient utilization of commission resources; and,
- Timely resolution of complaints.

Public Access to the Commission and its Processes

Those consumers most in need of protection are the small commercial, agricultural, and household/residential customers. Because of their general level of sophistication and their relative economic circumstances, these customers need a consumer-friendly forum for addressing their questions and complaints. For example, if available, the commission should utilize a toll-free telephone number to receive calls from the public. In addition, the rules and forms for resolution of

consumer complaints should be easily understood and used by the public. If at all possible, little or no cost should be borne by consumers in the process, especially when informal processes are in use.

Public Education

Perhaps the most effective means of consumer protection is that of public education. In most situations, the customer understands very little about how utilities operate, how prices are determined or what the role of the public utility commission plays in the regulation of the utility. Educational efforts should, at a minimum, be oriented toward the following goals:

- Information about the customer's relationship with the utility;
- Information about the commission and what role it plays in consumer protection;
- Information about energy usage, conservation and demand-side management;
- Disclosure of pricing, resource mix and environmental impacts of energy use;
- Information about low-income assistance programs; and,
- Information about public safety.

Consumer education should be the responsibility of both the utility and commission. In most situations, the commission should have the authority to require the utility to engage in certain types of educational activities. For example, as part of a rate setting process, the commission should require the utility to notify its customers of any proposed change in prices. This notice should be published in local newspapers and be included with customer bills. Other commission-required utility-performed educational topics may include low-income assistance programs, service disconnection and connection information, system safety and availability of the utility's own customer service representatives.

Because the customer may or may not trust the utility, especially when the customer is involved in a complaint against the utility, certain educational items may be better provided by the commission. Commissions should consider publishing pamphlets providing information about the commission and what it does as a regulatory body, the commission's complaint process and how a customer can use that process, customer service connection and disconnection rules and standards, and any other matter that repeatedly presents itself to the commission during consumer contacts.

Public Perception of Fairness

The commission should manage consumer complaints and the overall issue of consumer protection in a manner that assures a public perception of fairness. The complaint procedure should be easy to use for customers and should provide a forum that fosters a sense of confidence in both the process and in the commission. Efforts should be made to make sure that customers are not out-maneuvered by the utilities lawyers through the use of rules of procedure that are not likely to be well understood by the customer.

Fairness in Fact

In addition to the public's perception of fairness, the process should produce results that are truly fair. A few bad cases can do more to damage the institution's overall credibility with the public than all the good cases combined. This requires consistency in results and clearly stated reasons for the disposition of complaints. Where possible, the end result should be easily reconciled with the reasonable expectations of an informed consumer.

Balancing the Powers of the Parties

One of the keys to successful consumer protection is the assurance that the consumer has equal standing before the commission. This can accomplished through both procedural rules (e.g., easy access to the complaint process) and substantive rules (e.g., fair calculation of line extension costs). Because the utility is typically in command of the data necessary to resolve most consumer complaints, the utility should be required to make full disclosure to the consumer of all information relevant to that consumer's complaint. This is especially true with regard to billing and metering information for that consumer.

Efficient Utilization of Commission Resources

Like any organization, the commission's resources will always be scarce and often, seemingly, inadequate. As a result, the commission must be judicious in the use of its resources and find ways to achieve the greatest results possible. There are two principal methods for resource conservation. First, the resources may be used selectively for different types of problems. Second, the commission may off-load certain responsibilities to other parties, most particularly the utility.

A variety of processes for complaint resolutions should be used. These range from summary disposition of items over which there is little or no fact dispute to formal hearings for matters worthy of such consideration. The commission should consider a tiered approach in this regard. Matters such as complaints over the price charged can be summarily resolved, so long as the price in question is the filed and approved tariff rate. Complaints over the billed energy consumption (meter reading disputes) may require some informal process designed to determine or impute energy usage, depending on the circumstances. On the other hand, a large industrial customer's complaint over transformer loss adjustments on its bill may require a formal hearing complete with expert engineering witnesses and the review of sophisticated billing data.

Perhaps the most effective tool for conserving the commission's resources is the use of rules that require the utility to maintain a sufficient consumer service staff of its own. The utility should be given a clear understanding of the consumer protection performance expected by the commission. In addition, there should be a reporting process that allows the commission to monitor the utilities consumer protection performance. Performance criteria can include such activities as turnaround times for new service connections, wait times for phone calls, response times for repairs and safety threats, reliability performance, and other aspects of the interface between the utility and its customers. All of these criteria should be reasonable within the context of the individual utility and

should be achievable by the utility. Penalties and rewards may be considered by the commission, especially with regard to on-going problem areas.

Timely Resolution of Complaints

The commission should assure that consumer complaints are dealt with in a timely fashion. In the case of matters that involve little fact dispute, this can mean disposition in a matter of days or even on the same day, depending on the nature of the problem. More complex cases may require hearings and more time. In addition, the commission should be mindful of the relationship between the type of complaint and need for timely resolution. Issues involving connection of service or disconnection of service may present more time pressure, especially where the absence of residential space heating or cooling may present serious health threats.

The Obligation to Provide Reasonable and Adequate Service

A key factor in implementing a consumer protection policy is a clear understanding of the utility's obligation to provide service. While it is often said that a utility has an obligation to service, that obligation is not absolute. The utility's obligation can generally be grouped into three categories:

- Situations where there is no obligation to serve;
- Situations where there is a conditional obligation to serve; and,
- Situations where there is an unconditional obligation to serve.

A utility has no obligation to serve a customer who would procure service through fraud or misrepresentation. Customers previously disconnected for failure to pay may seek to be reconnected under a false name or through the name of a child or other relative. Often customers may seek service at a new address when they have a previously unpaid bill at a different address. In situations such as these, the commission should have a clearly stated policy that allows the utility to avoid the adverse consequences of serving these customers. Care should be taken to narrowly construct these exceptions to the obligation to provide service.

In some situations, the obligation to serve may be conditional. Customers seeking new service may be required to pay a portion of line extension costs, especially where those cost are very high. The customer who resides several kilometers from the nearest distribution line must pay some or all of the costs of that line extension. Customers with previous credit problems or unpaid utility bills may be required to place a deposit with the utility or to make arrangements to pay previously unpaid balances.

Most customers, absent poor credit or high cost conditions, are entitled to service. The customer located in a fully developed urban center, where the distribution system is place, should be able to initiate service in a timely fashion. Wait times for new service connections in these situations should be kept to a minimum. The utility here has a clear obligation to serve. In addition, payment of an

unpaid bill left over from a previous tenant who has no relationship to the new tenant should not be made a condition of new service. Finally, the commission should assure that the utility does not discriminate against customers on the basis of neighborhood, income level or other inappropriate basis.

Other duties of the utility should also be clearly defined by the commission. These include:

- The provision of accurate meters and meter reading,;
- Requirements for individual metering for multi-unit dwellings and commercial buildings;
- Timely and fair resolution of metering disputes;
- Provision of accurate bills;
- Standardized billing procedures and formats;
- Fair and equal access to bill payment arrangements for customers in arrears;
- Disconnection of customers for non-payment, theft or other reasons;
- Internal company consumer protection rules;
- Notices to customers of their rights to seek relief at the commission;
- Notices to customers of the availability of government or NGO assistance;
- Special duties for persons with medical conditions;
- Energy efficiency programs; and,

- Low-income assistance programs.

Each of these duties should be clearly addressed in the commission's rules. As part of its enforcement role, the commission should monitor the utilities' performance in each of these areas.

Establishing Standards

A critical tool in the provision of consumer protection is the establishment of service quality and performance standards. The commission should clearly define what constitutes adequate service quality. These standards should cover standards for such activities as delays in establishing new service, power quality and reliability standards (outage events per customer, response to weather related events, plant and facility maintenance programs, etc.), business office performance (customer call centers, calls answered promptly, etc.), customer satisfaction survey results, repair response times, and safety response times.

Enforcement of Consumer Protection

The commission should assure consumer protection through continuing enforcement of the service quality and performance standards. Enforcement can take the form of transaction-based proceedings to deal with individual consumer complaints, the use of fines or damage awards in special hearings, and the use of penalties and rewards in the setting of rates.

Obviously, consumer protection must be achieved through a variety of tools ranging from the commission's rule-making authority to the use of specific enforcement orders in individual cases. Consumer protection rules and proceedings provide a continuing feedback mechanism for the commission and can provide critical information in assessing and developing policy initiatives for the commission. In a very real sense, the success of consumer protection is measure of the success of the commission.

Lifeline and Low Income Assistance Rates

Most countries face significant problems with service to poor, handicapped or elderly customers and must make some provision for assistance. Rates designed for such customers can range from the provision of some minimum amount of energy for free or for a substantially reduced rate up to very elaborate stepped rate structures that increase with usage. In the design of such rates, the challenge is to assure that customers are not given incentives to abuse the privilege. For example, exceptionally high customer charges provide incentives for multiple residence to "share" one meter, creating a user-installed (and likely unsafe) distribution network on the customer's side of the meter. In addition, such rates should be limited to relatively low usage levels to avoid inefficient and wasteful usage by the customer. In lieu of discount rates or free electricity, lifeline subsidies may be better implemented through a direct government support payment. The clear advantage of this approach is that the customer continues to see full tariff prices.

Chapter 11

Integrated Resource Planning (IRP)

History and Purpose of IRP

Modern utility Integrated Resource Planning, or IRP, has evolved from the simple expansion of supply-side resources (power plants) to a more complete economic analysis that integrates all available resources and technologies, available on the supply-side or the demand-side. IRP is the combined development of electricity supplies and energy-efficiency improvements, including managing the growth of demand (DSM options), to provide energy services at minimum total cost, including environmental and social costs. This integration seeks the broadest reasonable range of options to meet demand for electric service, including technologies for energy efficiency and load control on the demand-side, as well as decentralized and non-utility generating sources, into the mix of potential resources. By selecting technologies and programs to minimize the total cost of electric service, and by including environmental and social costs in the cost criteria, IRP makes it possible to design a plan for electric supply and demand-side options to meet electricity demands without wasting economic or natural resources.

The expected result of the market and non-market changes brought about by IRP is to create a more favorable economic environment for the development and application of efficient end-use technologies and cleaner and less centralized supply technologies, including renewable sources. IRP means that these options will be considered, and the inclusion of environmental costs means that they will appear relatively attractive compared to traditional supply options. The difficulty with implementing such changes in a market economy is that the environmental quality is not traded in the market, since it is a common social good, and that the benefits of energy efficiency technologies are not fully captured by the market, because of various market distortions and institutional barriers that have been extensively documented. Thus, planning and regulation have been used to correct these problems and to provide incentives to move the market toward cleaner and more efficient energy technology. Higher electricity prices are often needed to implement the plans and resource allocations resulting from IRP, but price measures are not a sufficient solution in a market with imperfect competition and incomplete information.

IRP developed out of more traditional electricity planning as practiced prior to the 1980s. Before that time, electric utilities relied almost solely upon the expansion of supply side resources to meet anticipated demand growth an approach which had been steadily aided by improving economies of scale in electric generation. The declining costs of large scale steam boilers for the production of electricity in the first half of the twentieth century led to a nearly-universal strategy of rapid capacity

expansion and promotion of demand growth, with little consideration of the necessity or efficiency of energy use. However, in the latter decades of the century, declining economics of scale for large central station power units coupled with the emergence of smaller, less capital intensive technologies such as combustion turbines (jet engines) and increasing concern for the negative environmental impacts of electricity production caused a major shift in electric system to a broader, multi-faceted IRP approach.

Today, as the era of utility nationalization gives way to privatization, and as utility regulation changes to capture the benefits of competition by creating wholesale and retail electricity markets, the interests of society of minimizing overall costs, particularly the environmental costs of electricty production, continues to be served through IRP. The introduction of wholesale competition produces new supply-side choices which government regulators can integrate with demand side resources to meet customer needs at the overall lowest total cost to society. If competition is extended to the retail level, IRP can be used to improve the efficiency of the remaining transmission and distribution monopolies.

The successful development and implementation of an integrated resource plan requires utility regulators to articulate clearly and right from the start the goals to be achieved. By addressing in advance the following policy areas, utility regulators will be positioned to better understand and communicate to the utility and other stakeholders what the IRP process should accomplish.

Goals and Objectives of IRP

The overarching goal and objective of IRP should be straightforward. IRP is an economic efficiency model that provides a framework for conducting analysis and comparison of a wide variety of resources, in the context of a wide range of possible futures in order to find the most efficient, reliable and least cost combination of energy resources.

The critical issue for utility regulators in defining the objective they seek to achieve through IRP is the need to define efficiency. What is "most efficient?" What will "most economic outcome" mean in each country? Historically, the test for efficiency was simply to minimize the utility's revenue requirements for a given level of demand for electricity. This analysis consisted of a resource portfolio that depended 100 percent on supply-side resources. The level of demand was considered a given.

IRP takes a different perspective by distinguishing between electricity, kilowatts, kilowatt-hours, and energy services such as heat, light, motor drives, etc. This energy service perspective recognizes that the costs customers face are the combination of the price of kWhs that drive a motor or refrigerator and the number of kWhs needed to produce the desired motor drive or cooling. This means that how efficiently the motor or refrigerator converts kWh to mechanical energy or cooling is important. IRP, therefore, requires consideration of demand-side management (DSM) options in the resource mix.

Most utility regulators strive to minimize the total costs of energy services, including the costs borne by the utility, the customer and, in some cases, society at large. For example, there are frequent costs

to customers associated with their participation in demand-side programs. It is important to consider these costs in order to achieve a complete and fair comparison of all costs associated with one resource to that of another.

There are two ways of measuring efficiency that look beyond a utility's cost alone. Minimizing the Total Resource Cost (TRC) has been the most commonly adopted method. This measure considers both the utility's direct expenditures and the cost borne by consumers who participate in a utility demand side management (DSM) program. Several states have expanded upon the TRC objective by requiring utilities to optimize resource choices based upon total societal costs. This approach demands consideration not only of the direct costs incurred by the utility and its customers but also the indirect, social costs and benefits placed on society. Most often these indirect, or external, costs are those associated with environmental damage, but sometimes they include other external impacts as well, such as economic growth and job development.

In general, IRP focuses *on minimizing customers' bills rather than their rates*. An overall reduction in total resource cost achieved through the efficient use of energy will lower average bills. At the same time, as sunk costs shift to a smaller pool of kWh sales, higher rates may result. Utility regulators need to keep an eye on both bills and rates. Bill savings greatly outstrip any rate increases.
All customers benefit from lower system costs achieved through IRP, but customers who actually participate in DSM programs get an additional benefit through the lower use. As utilities implement their DSM programs, what happens to the customers who do not or cannot participate in any program? Their use does not decrease, but their prices may increase as fixed costs are spread over fewer kWhs. Utility regulators must pay attention to this effect, both by reviewing bill impacts and by making sure that the utility offers programs that will turn non-DSM participants into participants.

Need for New Resources

When does a utility need new resources? For years, the answer to this question was simple. A utility needed a new resource whenever customer demand exceeded reliable supply.

By the 1980s, as the economic approaches which ultimately led to IRP developed, the answer shifted to: A utility needs a new resource *whenever acquiring a new resource reduces total costs*. Stated another way, a utility "needs" any resource that costs less than the avoided cost. Need, then, becomes an economic question in addition to a reliability question. This shift in thinking means that sometimes new resources will be acquired to keep the lights on, and sometimes they will be acquired to lower overall costs. Even utilities with "excess capacity" can lower their costs by using resources that are cheaper than their current operating costs.

An understanding of avoided cost has been very important for analysis. For instance, some conservation programs can be implemented for less than 2¢/ per kWh. This cost falls below the price most utilities pay for fuel at a typical power plant. By opting for a DSM program, a utility runs

existing units less. The cost of DSM is less than the fuel cost savings, thus reducing the overall cost of providing energy services.

At the heart of IRP is the question: *As compared to what?* What existing and planned utility resource would a new resource displace? What time of day or year would the new resource provide energy services? Would the overall costs be lowered or raised if the new resource were added? To develop an accurate assessment and comparison of costs, all relevant costs for alternative and existing options must be included in an analysis.

In implementing IRP, some utilities have used the cost of the next planned unit as the avoided cost for acquiring any new supply- or demand-side resource. This approach, however, misstates the value of many resources. To fully exploit the IRP process, the full value of the resources displaced by the alternative resource option should be calculated and compared to the full cost of the alternative resource.

Transmission and distribution savings should also be looked at when determining what resource choice makes most sense. Acquisition of demand-side alternatives or dispersed small-scale supply alternatives can mean that costly line upgrades could be postponed or avoided altogether. Similarly, renewable resources, such as photovoltaics or wind turbines, offer the possibility of avoiding more costly line extensions into remote settings.

Finally, there are the external costs. Renewable resources and DSM programs generally cause less environmental damage than most traditional supply-side resources. Attributing costs to environmental damage generally improves the economic attractiveness of non-traditional resources.

Capturing Market Forces in the IRP Process

Incorporating competitive market forces can improve IRP outcomes and lower energy costs. How can the utility capture the economies offered in the competitive wholesale generation market? The utility must develop some systematic way to quiz the market to find out what resource options are available.

One effective method is for the utility to devise and circulate its optimal plan describing the most efficient resource mix it can produce. Then, through a competitive bidding and/or negotiation process, the utility can create the opportunity for competitive wholesale providers to step forward and show whether they can provide more attractive resources at a lower cost. Often the negotiation process, following up on the market response is key to acquiring resources at the lowest possible cost.

Requiring the utility to optimize first and others to bid second allows accurate measurement of the value of the resource offered. This approach is sensitive to the highly competitive, fast moving market environment in which Independent Power Producers operate. (The term used to refer to all types of competitive wholesale providers.) When an Independent Power Producer (IPP) can respond to a

specific plan, the value of its offered resources will be clearer, the bid review and/or negotiation process moves more quickly as does issuing and financing of purchase contracts. In recognition of the need to work within the realities of the competitive market place, regulators must carefully balance the need for oversight with the need for flexibility and speed.

The IRP Process

The implementation of the IRP process generally requires:

- Collection of reliable data on electricity end-use demand patterns and technical alternatives for improving their energy-efficiency or load profiles (treating demand in terms of energy services, rather than strictly kWh);
- Definition and projection of future energy-service (end-use) demand scenarios;
- Calculation of the costs and electric-load impacts of the demand-side alternatives;
- Comparison of their costs with the economic costs and environmental impacts of conventional and alternative electricity supply options;
- Design of an integrated supply and demand-side plan that satisfies the least-cost criteria in terms of economic costs and environmental impacts and;
- Implementation of the least-cost strategy.

The IRP planning horizon generally spans 10 to 15 years, with a specific action (investment) plan developed for the immediate upcoming two to three years. Total electricity demand is disaggregated by sector, end-use, and technology, with as much resolution as possible given available data. Based on these end-use demand break-downs and existing electric demand forecasts, disaggregated projections of future levels of energy-service growth are made.

Technologies for improving energy end-use efficiency or influencing load shapes are identified. The technical and economic performance of these alternatives are estimated, compared, and ranked according to cost-effectiveness. Based on these results, DSM programs and other energy-efficiency strategies are analyzed in terms of their total costs and rates of market penetration over time.

Production-cost analysis of the performance of existing and new electric supply alternatives is used to rank these alternatives according to marginal cost values. The results are compared to the marginal costs of demand-side options, including environmental costs to the extent possible. The two sets of options (supply-side and demand-side) are then compared and combined to produce the integrated least-cost electricity plan. The integrated electricity plan is subjected to further financial evaluation and sensitivity analysis before the final plan is completed. The incorporation of these issues may re-order the ranking of the integrated plan somewhat, or exclude certain resources from the plan. This step fine tunes the IRP results to account for specific issues and options inherent in the local or national setting.

Scope and Application of IRP

IRP provides an overarching framework guiding all utility planning and regulation. The IRP process is the backbone from which many other regulatory decisions flow decisions ranging from rate design cases to prudence review cases to resource acquisition cases. For this reason, basic IRP principles need to be understood by all utility regulatory staff who work on electric utility matters, not just the staff members responsible for reviewing the utilities' long-term resource plans. Utility management decisions as well as regulatory decisions should consistently apply IRP principles to avoid higher system costs and higher risks for shareholders and ratepayers. This suggests that nearly everyone involved in the electric utility or its regulation would benefit from a working knowledge of IRP. At the very least, those who are involved in the following issues or functions should be well-versed in its principles:

Load Forecasting

Load forecasts are used for ratemaking, for calculating fuel cost adjustments and in the IRP process. End-use forecasts which calculates the energy use of each customer class based upon each type of use (refrigeration, motor power, lighting, etc.) are most accurate and best support the development of energy efficiency programs.

Avoided Costs

Avoided cost calculations determine the value of each particular offered resource (build or buy) to the overall utility system. Any resource which costs less than it is worth to the system should be acquired as it will lower overall system costs.

Rate Cases

Utilities must develop these cases in a manner consistent with good planning. Any commission staff reviewing rate cases must understand the original planning process and objectives undertaken by the utility to decide how good a job the utility is doing in its pursuit of its stated objectives. This is particularly true in prudence review and fuel cost reviews.

Need or Certificate Cases

Cases involving a determination of need for new capacity or the issuance of a license to build a new power plant should use the load forecasts done under an IRP framework.

Fuel Cost Adjustments

Fuel costs should be consistent with the implementation of a utility's IRP, with variations explained. Connecting fuel and capacity expenditures with the plan is essential to the success of the plan.

Energy Efficiency

A broad array of energy efficiency programs should be considered in the IRP process and cost-effective programs, those programs which lower total costs for all ratepayers and for society should be available. An array of programs should be available to each customer class.

Utility Rate Design

As discussed in Chapters 3 and 5, rates that accurately reflect long-run costs promote the most efficient use of the utility system. When prices reflect long-run costs, customers can be expected to make wise purchasing decisions. If rates are inconsistent with long-term costs, customers are more likely to make inefficient electric and energy choices. Depending on what price signals customers receive, they are as likely to use too much as they are to use too little energy. But when the price signals send the wrong message, use will not match the demand predicted in the IRP process. Similarly, special rates, such as cogeneration deferral rates rely upon deciding which actions are economic and which are uneconomic. IRP informs utility regulators whether these rates make sense.

Utility Power Purchases

Wholesale purchase plans, including purchases from Qualifying Facilities, Cogenerators, Independent Power Producers, Exempt Wholesale Generators, and other utilities should be compared to determine whether a utility's wholesale purchase decisions result in lower costs and are consistent with the utility's own planning projections.

Transmission And Distribution Planning

Often utilities spend as much for transmission and distribution upgrades and improvements as spent upon power plant additions. These expenditures should be consistent with a planning process that examines alternatives to transmission and distribution investments (including demand- and supply-side options) with the objective of minimizing system cost.

Conclusion

Exploration of IRP and its implementation requires new skills and new thinking; however, customers should not be denied the benefits of DSM or even minimal investment in DSM while the details of IRP are being worked out. Utilities can, and should, be encouraged to start adding low-cost DSM to their resource mix without fearing that they are putting themselves or their customers at risk.

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