Minnesota Public Utilities Commission
Electric Competition Work Group

Retail Competition Report

Docket E-999/CI-95-135
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Foreword

The following report reflects the discussions held by the Minnesota Public Utilities Commission's Electric Competition Work Group (the Work Group) on the issue of retail competition in the electric industry. These discussions were held in late 1996 and early 1997, following similar discussions which were held on reducing the barriers to robust wholesale electric competition in the state.[1]

The Work Group, which consisted of 26 stakeholders representing a number of interests, was deeply divided on both the advisability of adopting retail competition and the resolution of the many challenges such a move would present. Some participants strongly believe that such a move would result in immediate price reductions and a number of other benefits for electric consumers. However, others argue that the potential for detrimental impacts on low income and rural consumers, the environment, reliability, public benefit programs and incumbent providers, as well as concerns about market power and "level playing fields," indicates that the state should carefully study this issue before it makes sweeping changes in the industry.

As a result, this report provides a discussion of several issues and attempts to provide a balanced representation of the broad range of views put forth in work group discussions. It does not reach any conclusions or recommendations on how to handle the various topics which were discussed. In addition, it does not purport to be a definitive discussion of all of the possible issues which may emerge under retail competition. There was limited time available for discussion, and there were a number of topics which could not be thoroughly explored (for example, one member of the Work Group noted that there are a number of Consumer Protection issues which are never mentioned in the report). The report does attempt to identify some areas where Minnesota's restructuring dialogue could be advanced through additional discussion or technical analyses.

Although there was no consensus reached on the topics discussed, I believe that the Work Group's retail competition discussion was beneficial in identifying and exploring challenges and potential solutions, and providing stakeholders with a better understanding of each others' issues and interests in this issue. This report may provide a good starting point for stakeholders and state policy makers to work together in designing an electric industry which meets the needs and resolves the concerns of all stakeholders.

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[1]The Work Group's Wholesale Competition Report was issued on October 18, 1996

Executive Summary

Introduction

Almost since its inception, the electric utility industry has been characterized by vertically integrated, regulated, monopoly electric service providers. Over the past few years, there has been increasing pressure to introduce widespread competition to the industry. As a result of a number of trends, as well as recent changes in federal law and regulation, several states are currently studying the potential impacts associated with increased competition in the industry, and exploring policies and alternative industry structures which could provide the benefits of lower prices and increased services for consumers, while continuing to provide the many public benefits which are realized under the industry's current regulated structure.

In April, 1995, the Minnesota Public Utilities Commission initiated its investigation into structural and regulatory changes in the electric industry (Minnesota PUC Docket No. E-999/CI-95-135). As part of this investigation, the Commission adopted sixteen principles relating to industry restructuring, and formed the electric competition work group to explore the implications of various electric industry structures. Consistent with its principle of ensuring a deliberate and orderly approach to restructuring, the Commission requested that the work group first address mechanisms which could be used to promote a robust wholesale competitive market in the state. The work group issued its Wholesale Competition Report on October 18, 1996.

After looking at wholesale competition, the work conducted a discussion of issues related to the introduction of retail competition in the electric industry. It began its discussion with a presentation on the opportunities available through customer choice. At subsequent meetings, the work group examined the issues of universal service, customer protection issues, renewable resources, energy efficiency, stranded costs and the timing of changes.

As part of its retail discussion, the Commission held public hearings in a number of locations around the state. A summary of the comments received from the public are appended to this report.

Opportunities Presented by Retail Competition

The work group discussed a number of opportunities which may be available through retail competition, including the potential for lower prices, the choice of supplier and services, risk management opportunities and innovations in products and services, including the bundling of electricity with other energy or communications services.

Universal Service

The work group discussion on universal service explored two issues: how to ensure that all

consumers will have access to electric energy, and whether the issue of universal service should also extend to affordability of electric service.

Under retail competition, there will be consumers who for various reasons cannot or do not choose a supplier of electric energy. The work group looked at a number of options to provide for a "supplier of last resort" or a default supplier in these instances. This service could be provided through the host utility, through some form of allocation to all participants in the market, through a bidding process or through a government-sponsored program. Some of group suggested that all consumers who are able to choose a supplier should be required to make an affirmative choice, even if they wish to remain with their current provider.

If universal service is also designed to assure affordability, the costs of affordability could be funded through the universal service provider, through general tax revenues, through a distribution charge or other non-bypassable charge, or through voluntary contributions.

Customer Protection

Retail competition will not obviate the need for some basic consumer protections, especially for residential and small commercial customers. The work group looked at customer metering issues, such as who would provide the meter, the need for time-of-use meters and other state of the art technology, who would read the meter, and whether the data collected was private information. The work group suggested that initially, the meters should be supplied and maintained by the distribution company, but that energy providers should be able to make arrangements with the distribution company to supply the appropriate type of meter for the service they are providing.

When the bundled electric service currently provided to retail customers is split into components and provided by different companies, there are questions relating to billing, disconnection/ reconnection, and the transfer of service. Other experiences with utility unbundling have shown that consumers prefer to receive a single bill for utility service.

Rules and standards may be needed to govern the disconnection of electric service as a result of nonpayment for energy service. Procedures should be developed to determine the ability to physically disconnect the customer from the grid, the ability for customers with outstanding bills to contract with another energy supplier, and the distribution of partial payments for electric service.

Consumers may need protection from unfair trade practices, such as "slamming" (the switching of electricity provider without customer authorization), misleading pricing and fraudulent claims by utilities. Consumer education will be especially important to alert consumers to the potential for unfair practices. The state could consider requiring some form of uniform disclosure of price and terms of service, and, in the case of environmental claims, the composition of the company's electricity portfolio.

Energy Efficiency, Renewables and Environmental Protection

There are a number of state policies in place which promote the use of energy efficiency and renewable energy and require the protection of the environment. These provisions include mandated investments in energy efficiency and renewable energy, a preference for renewable energy in electric utility planning processes, the use of environmental costs in resource selection proceedings and a number of policies designed to reduce the amount of air pollution from stationary sources and to consider the impact on the environment in the construction of electric generating facilities.

Some have expressed concerns that retail competition would have a detrimental effect on the environment, due to both the reduction in programs which support and encourage efficiency and renewable energy, and an increase in electricity production from older fossil-fueled generating plants which are not subject to the stringent environmental standards of new generation sources. The work group discussed policy options for ensuring the delivery of energy efficiency and the development of renewable energy in a retail competitive market.

The options discussed for energy efficiency included support through general tax revenues, imposition of a non-bypassable service charge, and relying on the competitive market to provide price signals to customers to invest in efficiency. The work group suggested that in the future, state intervention in energy efficiency programs should focus less on rebate-type mechanisms and more on facilitating market transformation to more efficient end-uses. There was also some feeling that support for efficiency would only be needed during some fixed transition period to a competitive market.

For renewables, the work group looked at the Renewables Portfolio Standard, which is a requirement that all electric providers supply a minimum percentage of generation through renewables. Suppliers could either own or purchase renewables, or fulfill the requirement through purchasing credits from a renewable generator. The group also discussed using a non-bypassable charge (similar to efficiency) to buy down the cost or otherwise support the development of renewables. Finally, renewables development could be left to market demand, through the use of "green marketing" programs.

In a discussion on the Renewables Portfolio Standard, work group members raised some concerns about the level at which the standard would be met, and whether such a standard would be unfair to companies which have not already made substantial investments in renewables. Some members asserted that the Renewables Portfolio Standard would best be implemented on a nation-wide basis.

Many of the state's policies encouraging fair consideration of efficiency, renewable technologies and environmental protection are implemented through the process of resource planning and acquisition of generating facilities. The work group did some work on this issue in its Wholesale Competition Report, and expressed an interest in looking further at the process under retail

competition.

Other Public Benefits

In addition to ensuring universal access to service, the delivery of energy efficiency and the development of renewable energy, there may be other important public benefits which are delivered through the current regulated electric industry. These benefits include economic development activities, cooperation between utilities for reliability and reserve sharing, and joint investment in electric research and development. It is possible that these benefits can be delivered in a competitive market through new mechanisms. As the restructuring dialogue continues, the state may want to look at the public benefit programs built into the current scheme of industry regulation, and make some determination on whether intervention to continue those programs is necessary and desirable.

Market Power

One of the foremost concerns about retail competition is whether sufficiency competition will be able to develop in the market, or whether certain providers will have too much market power, to the detriment of consumers in the market. Although the work group acknowledged the importance of these issues, it was unable to hold an objective discussion on market power because many of the issues were being litigated in a proposed merger before the Commission. The work group expressed an interest in holding a discussion on market power at some time in the future.

Stranded Costs

Stranded Costs are the costs which have been incurred by a utility to serve its customers that have been recovered in regulated rates but would no longer be recoverable in a competitive market. These costs could include electric generation costs (including canceled facilities), the costs of mandated programs, and the costs of uneconomic purchased power contracts. The work group looked at how stranded costs can be defined and measured, and discussed who should pay them.

Most states that have permitted recovery of stranded costs are requiring that they be measured on a "net" basis; that is, the consideration of all of the utility's costs and assets, including those which may be below market. Many states are requiring that utilities make their best efforts to mitigate those costs; some states have required that generation assets be divested in order to establish a market price for those assets.

The issue of who should pay stranded costs is highly controversial. Utilities argue that customers should pay these costs in order to ensure a fair start to the competitive industry. In most states that have acted on restructuring, utilities have been permitted 100% recovery of stranded costs. In most cases, the stranded costs are recovered through some sort of non-

bypassable service charge. Some states are looking at securitization for stranded cost recovery. Under securitization, the state or the utility sells bonds to recover the cost of stranded assets up front, and the bonds are secured by the requirement that consumers pay for stranded costs over a period of years.

In work group discussion, it was noted that stranded costs in Minnesota are likely to be very low, and competition could even result in extra utility profits ("negative" stranded costs), if competitive prices are higher than regulated prices. Others argued that utility shareholders have already been compensated for their risk. The group agreed that the calculation and estimation of stranded costs is likely to be complicated and imprecise. The work group expressed an interest in doing further work on some of the more technical aspects of stranded costs.

Pilot Programs and Phase-Ins

At its final meeting, the work group discussed the timing of retail competition and looked at the issue of pilot programs and phase-ins. There are a number of states which are currently conducting pilot programs. The group was uncertain whether a Minnesota-specific pilot program could offer any insights into the transition to a competitive market. If that state were to pursue a pilot program, it may make sense to look at areas which are not already being explored in other states, such as the large-scale aggregation of residential or low-income customers.

If retail competition is implemented in Minnesota, the work group suggested that it would be best to implement it on a phased basis, in order to permit the state to more easily solve problems as they come up and incorporate changes into the system. Options for phasing in competition include phase-in by customer class, by percentage of consumers across the board, or by geographic area.

Conclusion

The members of the Competition Work Group were deeply divided on the issue of retail competition. There was little consensus on any of the issues discussed by the group. The Work Group did recognize that there was substantial discussion and technical work which could be conducted on a number of these issues. It especially expressed an interest in looking further at resource planning and acquisition, market power and the definition and calculation of stranded costs.

Introduction

In April 1995, the Minnesota Public Utilities Commission (MNPUC) initiated its investigation into structural and regulatory changes in the electric utility industry (in MNPUC Docket No. E-999/CI-95-135). As part of its investigation, the Commission adopted sixteen principles and eight action steps relating to industry restructuring, and formed the electric competition work group to explore the implications of various electric industry structures. The principles and action steps are attached to this report as Appendix B.

Action Step #8 of the Commission's investigation stated that after, or as part of, the examination of wholesale competition issues, the Commission would examine and develop methods that the state could use to gain insight into the issues and challenges associated with retail competition. The Commission indicated that this step should be undertaken by the competition work group after it makes its report on wholesale competition.

On October 18, 1996, the work group on electric competition completed its report on wholesale competition, and issued it to the Commission. In it, the work group made recommendations for removing barriers associated with wholesale competition in the areas of resource planning and acquisition, transmission, and generation. Attached to the wholesale report is the report and the recommendations on wholesale issues from the subcommittee on safety, reliability and service quality.

On October 9, 1996, the work group began its study of retail issues. It began with a presentation by a representative of ENRON on the need for electric utility customer choice. At meetings that followed, the work group examined the issues of universal service, customer protection, renewable resources and energy efficiency. Following the review of these issues, the work group examined the issue of stranded costs. Finally, it discussed the issue of a level playing field for all participants, as well as the timing of federal and state restructuring changes. Meeting summaries are attached to this report as Appendix E.

Simultaneous with the meetings of the full work group, four subcommittees were set up to do in-depth studies in four issue areas: (1) safety, reliability, and service quality, (2) public information, (3) rate flexibility, and (4) unbundling of rates and services.

The subcommittee on safety, reliability, and service quality (SRSQ) examined issues related to appropriate standards for safety, reliability and service quality. It was asked to make recommendations to the Commission on methods to implement these standards. (The SRSQ subcommittee completed its report on wholesale issues in October 1996. As indicated above, the report from the subcommittee was attached, as Appendix G, to the wholesale report of the electric competition work group.) The SRSQ subcommittee completed its final report on retail issues on February 28, 1997. The subcommittee's second report is attached to this report as Appendix D. In it, the subcommittee makes six recommendations regarding issues that need to be addressed prior to the implementation of retail access.

A subcommittee on public participation was set up to carry out Restructuring Principle #8. This principle states that there should be an opportunity for public input into the new structure of the industry, and that the public should be educated about the impact of industry restructuring on electricity service. This subcommittee developed and organized the distribution of a brochure on electric industry restructuring. In addition, it developed a plan for holding public hearings on the issue of restructuring across the state. A summary of the activities of this subcommittee, and a summary of the comments from the public are contained in Appendix C.

The subcommittee on flexible and innovative ratemaking examined the potential for increasing the flexibility of rate-regulated utilities to negotiate rates and terms of service for electric customers. The subcommittee issued its report to the Commission on February 21, 1997. The report contained recommendations for an expedited review process for electric utility contract filings and for other non-controversial filings made at the Commission. It also contained a proposal for a discretionary rate reduction that could be offered by an electric utility, under certain conditions, to customers within its service territory.

The subcommittee on unbundling was directed to investigate the appropriate methods of unbundling electric rates and services. The Commission asked the work group to explore possible methods of unbundling, their benefits and costs, and their practicality. Currently, this subcommittee is preparing a report, with recommendations, to be issued sometime in the near future.

Given the global nature of the restructuring discussions, and the participants differing perceptions of definitions of terms, it is not surprising that there was overlap of the work of the subcommittees and main group discussion topics. Sometimes an issue has impacts in different areas of interest, as in the case of metering issues where there are potential impacts to safety, reliability, customer protection, unbundling, and universal service. The various discussions in the report should be taken in total by policymakers when considering options for a restructured industry.

Potential Opportunities Presented by Retail Competition

The discussion of electric industry restructuring which is engulfing the country is in some part due to a perception that the current system of monopoly service providers and regulation has failed to provide customers with the lowest cost, most innovative electric service possible. Proponents of retail competition argue that permitting customers to choose their electricity provider will result in a number of benefits and opportunities which cannot be extracted from the current system.

Price

The most oft-cited benefit expected to be attained through retail competition is lower electricity prices. Price decreases could be achieved through a combination of factors, including increased production efficiency, a reduction in customers' obligations to pay for government-mandated expenses and utilities' poor investment decisions, and a reallocation of costs among customer classes. An actual increase in production efficiency (i.e. a reduction in the cost of producing electricity) would result in savings which would be available for all customers. In the case of cost reallocations, price reductions for some customers would necessarily result in increases for other customers, all other factors remaining equal.

There are two recent studies which offer different views on the impact of retail competition on consumer prices in the upper Midwest. According to *Customer Choice, Consumer Value: An Analysis of Retail Competition in America's Electric Economy* (Citizens for a Sound Economy, Washington, D.C., retail competition would result in a 26 percent reduction in electricity prices nationwide. The study did not attempt to break those savings down be state or region.

A second study, *Electricity Prices in a Competitive Environment: Marginal Cost Pricing of Generation Services and Financial Status of Electric Utilities; A Preliminary Analysis Through 2015,* published in August, 1997 by the U.S. Department of Energy's Energy Information Administration (EIA), predicts nationwide price reductions of between 8 and 15 percent (without considering the recovery of stranded costs). However, in a regional breakdown the report cautions that the Mid-Continent Area Power Pool (MAPP) region, of which Minnesota is a part, could experience price *increases* under competition. This prediction is based on the MAPP region's low electricity production costs as compared with the rest of the nation.

Ultimately, it is unknown whether retail competition will result in higher or lower prices for electricity in Minnesota. Proponents point to large price reductions achieved in the deregulation of other industries (natural gas, long distance telecommunications and transportation, for example) as evidence that competition is more likely to bring about lower electric prices.

Customer Choice

Retail competition proponents assert that the restructuring dialogue is about more than simply

price. Customers also value choice: the ability to select their electricity provider and the exact services that they wish to purchase. Currently, customers must purchase their electricity from the provider who serves their particular location, and in most cases they are offered only a very limited number of service options (for example, firm service and one or two interruptible or time-of-day options). Under retail competition, sellers and customers will be able to identify the necessary or desirable components of electric service and develop unique service packages to deliver those components.

Customer choice can also permit some consumers to greatly simplify their electricity procurement. Consumers with many locations would have the opportunity to consolidate all electric service under a single supplier and receive a single bill for that service. This ability could also assist the consumer in lowering its electricity prices, since the aggregation of multiple locations would provide a larger electric load which may qualify for more attractive terms.

Consumers may also use the ability to choose their electricity provider to purchase electricity from environmentally friendly generation sources or socially conscious providers. Early indications from retail competition pilot programs in New Hampshire and Massachusetts are that many residential consumers are interested in a "green power" option.

Aggregation of customers can provide choice to even the smaller consumers of electricity. Electricity producers and marketers are expected to aggregate customers; other potential aggregators include local governments and business trade associations.

Risk Management Opportunities

Retail Competition would likely bring with it a number of new financial instruments which would permit customers to manage the risk of electric price increases. Customers would be able to elect to purchase electricity on the (potentially volatile) spot market or hedge their risk through a number of opportunities ranging from signing a long-term fixed price or fixed escalation contract to purchasing electric futures or other securities which would index the price of their electricity to the price of their product. In many cases, electric marketers may develop and market sophisticated financial portfolios to help customers hedge electric price risk.

Product and Service Innovations

Increased competition in the electric industry is expected to result in a number of innovations in electric products and services, such as new generating technologies, electric metering technologies and a vast array of rate options and service bundles which are not currently available in the market. This prediction is based on the explosion of technological innovation which has occurred following the breakup of AT&T, resulting in previously unimagined products such as call waiting, caller ID and video conferencing. Many expect electricity, natural gas and communications services to be bundled in a number of combinations to serve the unique requirements of individual customers.

Universal Service

Introduction

Much of modern life is defined by the use of electricity. In the United States, access to electricity is regarded as a basic necessity and is generally guaranteed to be available to all citizens. The ability of all U.S. families and businesses to obtain electricity is called universal service. This universality benefits society as a whole. These benefits include economic development, a higher standard of living, improved security and safety for communities, better public health, and more cohesive neighborhoods.

The Commission's Restructuring Principle on universal service states:

> *Universal service at reasonable rates should be a primary goal of the state. Universal energy service should be supported through a non-bypassable mechanism.*

Electric utilities currently have the right and obligation to serve all customers located in their exclusive service territory (Minn. Stat. § 216B.40). Minn. Stat. § 216B.04 requires all utilities to extend service to customers in their service territory within 90 days of application. Minn. Stat. § 216B.04, Standards of Service, reads:

> Every public utility shall furnish safe, adequate, efficient, and reasonable service; provided that service shall be deemed adequate if made so within 90 days after a person requests service. Upon application by a public utility, and for good cause shown, the commission may extend the period for not to exceed another 90 days.

Two questions define the issue of universal service:

- how is electricity made available to everybody?
- should the issue of universal service also extend to the affordability of electricity?

The first question, that of availability, asks how all consumers will be able to access electric service. In order to access power, a customer must have wires connecting their house to the distribution system and must be provided with energy service. The wires and the electricity can be separate services, but both are necessary.

The Commission's Restructuring Principle on the obligation to provide distribution service states:

> *Obligation to connect the distribution system is and should remain a regulated monopoly service. Distributors should maintain exclusive service areas and have the obligation to provide distribution service to all customers in the distribution service area. This service would be subject to reasonable service extension policies, including customer*

contributions for certain extensions.

Wires connection will likely remain a regulated service in a restructured utility environment. Transmission and distribution will remain as monopolies, and universal connection to wires can continue to be mandated.

The availability of energy service, as opposed to connection to the wires, is a significant issue. The Commission has determined that all customers should have access to energy service, but what needs to be decided is exactly what service will be available to the consumers, and who the provider of that service will be. If a consumer has no ability to access competitive providers of electricity, a "provider of last resort" needs to guarantee them universal service.

Even if the state can require utilities to connect, the obligation to provide energy in a competitive retail market may be jeopardized. Relying on the market will not necessarily result in all consumers receiving energy service. Absent universal service requirements, private firms may refuse to accept customers based on their service characteristics or ability to pay. Similarly, low-income neighborhoods or rural areas may not be sought out by competitive power suppliers. Instead, larger, more-profitable customers and communities will likely be desired. Markets encourage competitors to go after the most profitable segments first.

In light of the fact that the market probably will not inherently provide for all consumers, a policy is needed to establish a last resort for customers with no other options. To prevent consumers from being without electricity, a "provider of last resort" can be set up to provide electricity to customers perceived as less desirable. This consumer category is described by the fact that they "can't choose."

Additionally, as competition in the industry continues to evolve, many customers will either be uninformed about the change and their options, or will simply not make any choice about a new power supplier. This category is described as "non-choosers." In the event of restructuring, both types of customers will require a default supplier.

The second main question of universal service, that of affordability, asks how consumers will be ensured reasonable rates. Low-income families may not have the means to pay their electricity bills. In addition, heightened credit screening and service deposit requirements may constitute hurdles which further limit low income customers' lack of competitive options. Low income customers, therefore, may face higher rates than the average residential consumer. Another problem is that rates may become high in areas which are less densely populated or in other instances where the service characteristics of customers make them less desirable. Making electricity bills affordable and also setting up fair credit and collection terms are important to ensuring universal service. Affordability can be achieved by reducing the bill to a smaller percentage of the customers' income; this can be accomplished by lowering the electricity rate, by reducing electricity use, or via a combination of both.

Models for Universal Service

Several models have been developed to provide universal service under retail competition. The premise of these models is that the electric industry will be restructured to provide retail competition, and that universal service at reasonable rates will be a requirement of that restructuring. The models also assume that energy providers will be less likely to serve customers with bad credit ratings, poor payment histories, or undesirable characteristics due to geographic location, or will simply avoid these customers as unprofitable..

Model One- *Host distribution utility provides service*

The host distribution utility will be required to provide universal energy service to all customers who do not or cannot choose to select a different provider.

Model Two - *Allocation of customers to energy providers*

Customers that do not choose a provider are allocated to different providers. Some of the potential allocation methods include:

Random assignment. Customers without chosen alternative suppliers are randomly assigned to a supplier, based on some measure of market share. Under this option, the responsibility to serve less profitable customers will be allocated to all providers. Therefore, if you sell power in the market place, you must take some responsibility for serving less profitable customers.

Providers bid to become supplier of last resort. Suppliers bid to be provider of last resort. The winning bidder will be chosen based on the least cost of providing the strongest guarantee of universal service above minimum standards in the Request for Proposal (RFP).

All suppliers have tradable obligation to serve, with net-trans account. Suppliers obtain credits in a universal service clearing house account for service to customers facing market barriers.

All suppliers have tradable obligation to serve, with bilateral contracts between suppliers. Suppliers can trade their obligation to serve with one another in contracts outside the universal service clearing house account.

Model Three - *Public Response*

The government (federal or state) may create a risk pool. The government entity could then purchase power or perhaps even own generation plants to provide universal service.

Model Four - *Private response*

A private organization may voluntarily provide energy services, or the resources to purchase energy services.

Decisions in Other States

Other states have considered the universal service issue. California, Massachusetts, Maryland, New Hampshire, Rhode Island, Pennsylvania, Maine, and Vermont have all adopted principles providing for universal service in order to protect consumers against unnecessary service disruptions during and after the transition to competition. Most of these states have required the host utility to be the provider of last resort. This is the default supplier model which requires the existing utility to serve all customers who do not subscribe to alternative suppliers.

Rhode Island was one of the first states to pass a restructuring plan; it has one of the more specific universal service policies. Its law declares that within three months after retail access of electricity is available to forty percent of New England consumers, each distribution company shall arrange for a last resort supplier. This service will be available for customers who are no longer eligible to receive the standard offer service. The distribution company (disco) will hold a bidding process to determine the provider of last resort service. The bids will include a market price plus a fixed contribution from the disco. The bid with the lowest fixed contribution will be accepted by the Commission as the supplier of last resort. Also, the utility is required to provide standard offer service to customers who do not choose other suppliers.

New Hampshire was also an early adopter of restructuring legislation. Universal service is guaranteed by requiring discos to connect all customers who request service, and by establishing a default power supplier. Default service serves as a safety net for consumers who cannot participate in the market, or when suppliers fail to meet their service obligations. The default supplier will be chosen from several different options including the use of a power exchange (pool), bilateral contracts or the assignment of customers to willing suppliers. New Hampshire does not believe default service should be bundled with distribution service, due to concerns about vertical market power.

In Massachusetts' proposal for restructuring, each distribution company has an obligation to connect and provide distribution service to all customers in its territory. In addition, discos will be required to provide Basic Service to all customers in its territory who do not have another option. One alternative to Massachusetts' proposed rules states that discos with affiliated generation companies would be required to price the generation component of the service to customers at the spot market price.

Vermont requires the host utility to offer basic service. This basic service is made available through a retail service provider, to all customers of the distribution company. Terms of service will be established through a market determination.

Maine has proposed that customers will receive power under a standard offer, in the event that a customer can not pay his or her bill or will not choose an energy supplier. The standard offer service is the energy supply that, when packaged with Transmission & Distribution (T&D) services should resemble the regulated electric service currently being provided. Rates will be on average what customers pay in 1999. T&D utilities will hold a competitive bidding process to

select the standard offer provider for each territory. This reflects model two, in which providers bid to become the supplier of last resort. Selecting the standard offer provider through a bidding process allows customers to benefit somewhat from competitive pressures on rates.

Work Group Discussion

The work group spent a good deal of time discussing universal service; because of the complexity of the issue the group has not yet come to a final consensus. However, the group has defined some of its main ideas and options for universal service. Three different groups of consumers were identified that may need a provider of last resort:

- customers who do not choose an energy supplier, either because they are uninformed about their options or chose not to make any new decision
- customers who can not get service because of credit
- isolated customers unattractive to an energy supplier because of their load characteristics or location

The underlying assumption here is that in the case of default, somebody has to provide energy to these three categories of consumers. Three essential questions were asked about last resort and universal service:

- who would provide the services?
- what services would be provided?
- who will fund the services?

The work group looked at the universal service models and analyzed three different options, all of which received some support. The first option would require the distribution company, perhaps on a competitive bid basis, to supply energy in the case of default. Another option is to randomly distribute the consumers to all the energy providers in the state in proportion to their total state market share. The third option would have the state be the aggregator and take bids from power suppliers to have one entity be the no-choice provider for everybody in the state.

Option #1: Similar to other states, the distribution company would provide universal service. Advantages of this option are that it would be easiest to administer, is familiar to customers, and the public obligation is already built into the system in the form of exclusive distribution service areas. Using this option could also result in better coordination of comprehensive energy services, demand-side management, weatherization, and payment support, and information on payment and disconnection patterns.

There is a concern that a regulated distribution company may not want the obligation of being aggregator. The undesirable, high cost customers would be left with the disco; if combined with the company's general customer base this could contribute to higher rates for all of the utilities' residential customers, even though many of them would qualify for more attractive terms. This would make the distribution company's rates less competitive and may encourage more

customers to opt for other choices. To address this potential problem, many states permit distribution companies (or their energy supply affiliates) to offer separate "standard offer" and market rates.

Another problem is that requiring that the disco be the default aggregator may conflict with the intent to make the energy market competitive. Awarding all of the default customers to the disco could perpetuate the high market share of the host utility. To limit the disco's energy supply involvement, the disco could be assigned new customers for a short time, after which the customers who can choose a supplier would be forced to chose an energy supplier (which could be an affiliate of the disco, or an alternative supplier)..

Option #2: Another alternative would be to distribute the consumers to all the energy providers based on their proportion of the market. A few years ago long distance customers were allocated in this way when long distance competition was introduced. An objection to this option is that by assigning customers in this manner, the market shares of the companies are perpetuated. An allocation approach must consider whether it will contribute to an unlevel playing field for competitors. This option leaves the achievement of universal service up to the uncoordinated efforts of suppliers whose commitments to universal service may vary. In addition, this approach is frequently unpopular with customers, who may believe that by failing to make a choice they will retain their current supplier.

Option #3: The third option considered by the work group was to have the state be the aggregator of last resort and have suppliers competitively bid to see who will provide the service. Some argue that this would be an unjustified administrative burden. However, a competitive approach to the problem would be to follow the risk sharing mechanism of the insurance industry; a company can buy into a pool that it believes provides the proper reward for the risk. A subsidized customer market may be attractive if it could be bid for. One problem with this approach is that it disaggregates low income customers and places them in a pool which is likely to have the highest costs. Others stated that the risk of these market pools could be lowered if programs were developed to assist in paying electric bills, or if these customers could be aggregated with more stable loads, such as the state's own electricity demand.

The two options that seemed to have the most support from work group members were the distribution company as aggregator, or the state soliciting bids to serve less desirable customers. However, any option besides the distribution company may create more costs, problems, and bureaucracy than is necessary. A strong feeling was expressed that those customers who can choose energy suppliers should be required to make an affirmative choice of supplier, as opposed to simply defaulting to the distribution company or its affiliate.

The work group had many unanswered questions about what services would be provided. At the minimum the disco would be required to connect each customer with wires. Determining who should provide the energy service is another dilemma. Some felt that the provider of wire service should have the responsibility to provide universal service. An issue of market power comes into play here. If the disco connects the customers with wires and also provides the energy supply,

then the disco has control over a large share of the market. Suppliers may also employ an unfair use of leverage, offering preferential service to wires customers who also purchase the disco's energy services. These types of problems would limit the competitive characteristics of the market.

Another concern is that a market failure may occur and leave certain consumer groups unprotected. A competitive market may lead to a situation where one consumer group benefits from more and better services, while another group receives less services and ends up paying a very high price for the few available options. One example was given as an analogy to this problem: The inner cities rarely have banks; instead, they have cash-checking outlets with very expensive premiums. These citizens end up paying a very high price for a limited service. This problem could be analogous to universal service and last resort. Low-income consumers may end up paying a high price for a limited selection of energy services.

Funding Options

These low-income issues lead into the question of whether universal service should ensure only universal access to electric service, or also affordable energy rates. Consumer groups point out that smaller and smaller amounts of funding are available for low-income programs. If affordable service is going to be guaranteed, there would need to be a funding mechanism for such programs. If power is provided by the last resort mechanism because customers are not able to pay their bills, the funding source would cover the cost of service. The following are examples of funding sources which could be used to ensure affordability:

Self funding. The provider of universal service would pay the costs of doing so.

General taxes. Taxes collected at either the state or federal level may be used to subsidize the provider for providing service.

Distribution fee or other non-bypassable charge. A non-avoidable surcharge of all market participants may be used to subsidize universal service. Such fees could be structured as meter charges, wires charges, license fees or as a percentage of gross revenues.

Private Response. A voluntary fund could be set up to provide for contributions to low-income energy bills.

Additional Questions

Due to the complexity of the universal service issue, the work group's discussions left many questions unanswered. The following list represents a portion of the remaining concerns of the work group, and reflects the uncertainty of the conclusions thus far:

- Will universal service ensure both access to electric service for all customers, and affordable energy rates for low income customers?

- Under universal service will consumers be provided with service options equivalent to those available in the market?
- Will competition be fostered under each of the models for providing universal service?
- Will the model selected for universal service ensure that benefits of competition are available to all customers?
- Would universal service funding come in place of, or in addition to, existing programs that ensure low income households can obtain electric service, such as: cold weather shut off protection, energy assistance funded through state, federal, and private sources, and utility pilot income rate programs?
- If either a distribution fee or a transmission fee funding mechanism is selected, should it be used to provide assistance for electric bills only or for all energy bills?
- How will the ability to ensure universal service be maintained or enforced (standards and consumer protections)?

Customer Protection

Introduction

In a competitive retail electric market, it will likely still be necessary to maintain minimum requirements for consumer protection. The standards would be applicable to transactions by both distribution companies and retail electric suppliers with residential and small commercial customers. The assumption here is that transactions with non-residential, large customers may not need standardized protections because they are familiar with existing contract and commercial law practices.

Privacy

Although no federal law, and few state statutes, exist to protect utility billing and payment records, most customers reasonably expect that these records are confidential. Utilities protect this information; they do not routinely make available their customer research and survey results. Even when law enforcement officials request access to such information, customer-usage records are protected from access without a court order or subpoena.

In a retail competitive industry, distribution companies will have valuable information about customers that retailers will wish to obtain. The concern is that in a competitive environment, regulated distribution companies may want to give access and preference to their unregulated retail sale affiliates. A balance must be found; access to this confidential material for all suppliers would assist in the development of a competitive market, but the expectations of customers' privacy rights must be met.

One option would be to allow the release of generic information to enable retail suppliers to seek new customers and to market their products. If and when the distribution company makes generic information available, the price charged for the information should be nondiscriminatory. This means that affiliates and non-affiliates should receive access to the information for the same price on the same terms. However, the release of customer-specific information from the distribution company to the retail sales affiliate, or any other retail supplier should be prohibited without the permission of the customer.

A problematic situation could occur if a supplier sought information about customers in order to target upscale neighborhoods or avoid poorer ones. If such a scheme has the effect of excluding minorities or potential customers on public assistance, regulations could refuse this information based on criteria protected under the Equal Credit Opportunity Act.

The availability of customers' names and addresses would be conducive to the creation of a competitive market. Therefore, the availability of this information to all electric suppliers would be beneficial to customers. In this case, the distribution company would probably sell its customer list to any retail supplier upon request. However, inclusion of a customer's number is

more controversial: databases that supply household telephone numbers do not distinguish between listed and unlisted numbers. Therefore, this information probably should remain confidential.

The release of personal annual usage profiles is even more controversial than home phone number availability. A California statute prohibits access to this information without a court order. This is also similar to the Telecommunications Act of 1996, prohibiting release of such information. A customer's usage profile probably should not be available without customer permission. On the other hand, customer usage profile information could be a key to a marketing and pricing decisions. For example, suppliers could target high-use customers for the installation of hourly-pricing meters. There may be a need to obtain additional public input on the ability of the distribution company to release individual usage data to any energy supplier without a customer's express permission to do so.

Metering[2]

With the existing regulatory structure, the entity providing the wires services and the electrical energy are the same. Under retail access, the existence of different entities to provide these functions is likely. The meter is the point where the wire service and the energy service converge. The meter is both an integral part of the hardware system that delivers the power to the customer and it is the principle focus of any power purchase agreement between a buyer and seller. In a competitive retail electricity market, the issue of which entity controls the metering process (and questions such as: who owns the meter? who reads the meter? what meter type is required?) should be addressed from both the hardware and the contractual perspective. Metering issues are an important factor in establishing the rules of the game in a retail market.

As is the case with billing and collection, the most logical entity to perform the metering function may be the distribution utility. The distribution utility already owns the existing meters and has the equipment and infrastructure in place to provide this function. However, many states which are proceeding with restructuring (especially California and Massachusetts) are exploring the possibility of quickly transferring the metering function to a competitive market. This development is due largely to the requests of potential competitors, who would like to prove metering as part of the energy packages they are offering. The California Energy Commission is currently working on developing industry standards for competitive metering in that state.

If the distribution utility continues to provide the metering function, it could assume the obligation to modify the metering package for an individual customer at the request of the power supplier and/or reseller. The cost of such modifications would conceivably be the responsibility of the power supplier and/or reseller. The power supplier and/or reseller could have the option of installing its own metering package and providing its own meter reading if satisfactory

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[2]Adapted from the "Final Report of the Safety, Reliability, and Service Quality Subcommittee," February 28, 1997, attached to this report as Appendix D.

arrangements cannot be made with the distribution utility. The level of metering supplied universally, versus the level provided at extra cost, is a subject for further discussion.

There is, however, a more difficult question related to the data developed from metering: specifically, how and to what extent should such data be shared with other potential power suppliers and/or resellers? Some mechanism or procedure would need to be developed that would balance the market value of free and open access to customer information with the desire of many customers to maintain confidentiality. Although residential and small commercial customers are likely to be concerned about confidentiality regarding electrical usage, large commercial and industrial customers are often very sensitive in this regard, not wishing this data to get in the hands of competitors.

The distribution company has a need to know the metering data for the adequate provision of physical facilities, to bill usage-related distribution charges, and for long range planning of system upgrades. To the extent that the distribution company also sells energy services, the meter data could provide them a marketing advantage over other competitors wishing to sell power to the customer. This could be similar to the situation that exists today with utilities that sell appliance sales and repair services as well as energy services.

Work Group Discussion

The work group held a long and detailed discussion on metering issues. An emerging consensus is that metering and standards of metering should initially reside with the distribution company. As the industry becomes more competitive, independent suppliers will probably provide metering services. Because of the changing industry, proper regulations must be mandated so that the standards in the industry and the standards of the Commission do not falter. Members wanted to ensure that MAPP would uphold necessary regulations, yet eliminate other unnecessary regulations.

The issues discussed by the work group fell into two categories:

- issues at the level of the end user
- issues relating to energy accounting, energy source, and delivery

Concerns at the level of the end user include the various services customers will be offered and the safety regulations required because of those services. Rates may include a standard charge for a meter; more advanced services would be paid by the customer. The metering systems have begun to switch to computer-based technology with more capabilities; this will lead to more customer service options. Many customers may want these computer time-stamped energy technologies, which tell the consumer how many kW per hour they consume. Others may simply wish to retain their old meters. In addition, metering costs could render real-time pricing unaffordable for most customers, and real-time pricing may not even be made available to some customers. For example, just as many of the innovations in telecommunications technology have been slow in penetrating rural Minnesota, non-metro and rural areas may lag behind in the

change to more-advanced meter technology. If customers cannot get the service they want individually, they may be able to pool their electric demands in order to receive more sophisticated metering services.

The second set of concerns was based on more technical, accounting details. Members stress that marketers must adhere to accounting procedures; accuracy must exist in balancing the electricity load. The infrastructure may need to be modified to account for the sources of electricity. The scheduled energy must be balanced with the actual flow of energy at the end of each day; these scheduling and control functions are very important.

In order to assure full capability of a consumer to select and switch electricity suppliers, metering will probably still need to be done at the individual customer delivery point. There was much discussion with respect to who should provide the meters. This could be done by the distribution company, with the meter readings provided to the energy provider as a service. The meters could also be provided by the energy service provider, or the customer could be responsible for purchasing and installing a meter.

One reason that it may be important for the distribution service or energy service provider to supply or otherwise control the meter is to ensure consistency and accuracy of the data collected. If consumers were to be permitted (or required) to purchase meters at their local hardware store, strict manufacturing standards would need to be implemented, and the service providers may need to maintain the ability and authority to inspect and test the meters.

The work group also discussed whether it would be necessary for all customers to have time-of-use meters in order to permit them the ability to choose their energy service provider. The New Hampshire pilot program permitted customer choice using typical load profiles of certain types of customers, such as residential and small commercial customers. This permitted energy service providers to determine customer costs using aggregate meter readings and load profiles.

Billing, Credit, & Collection[3]

When the bundled services currently provided to a retail customer are split into component parts, and are provided by two or more separate providers, the question arises of how the billing and collection procedures are to be handled. Existing Commission rules covering this have evolved over a number of years and from a number of issues. Cooperatives and municipal utilities, while not directly under Commission regulation, have often used these rules as guidelines. Whether this structure is sufficient in a retail access environment needs to be discussed.

Most of the visions for retail access have retail customers obtaining energy services from one source and distribution services from another source. While each individual customer would be

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[3]From the "Final Report of the Safety, Reliability, and Service Quality Subcommittee," February 28, 1997, attached to this report as Appendix D.

responsible for arranging for its power supply directly or indirectly through an agent or aggregator, some entity would need to coordinate and record the transactions and arrange for transferring the customer from one supplier to another. It is important to emphasize that this is primarily a bookkeeping function, not a physical transfer involving disconnection from one system and reconnection to another.

Unbundling of electric service will increase the complexity of retail electric service by increasing the number of players. One result could be an increase in the administrative cost associated with the metering, billing, disconnection/reconnection, transference of service, etc. The number of parties affected when a customer fails to pay the bill would also likely increase. The rules, rates, and penalties assessed as a result of the late payment and/or default should be fairly designed to protect the interests of all parties, customers as well as suppliers.

The distribution provider could continue to be responsible for the billing and collection, at least for the distribution delivery services they provide. Billing and collection for the power generation and transmission function could be determined to be the responsibility of the power supplier, or, if applicable, a reseller. This would imply that the customer would get at least two electric bills for the partial unbundled services. Each would presumably have its own payment due dates and penalties for late payments, etc.

In pilot programs and focus groups on gas, telephone and electricity competition, customers have expressed a strong preference for receiving a single bill. The power supplier and/or reseller could voluntarily subcontract this billing and collection function to the distribution delivery provider or to some other entity. This function could also be legislatively mandated to be subcontracted to the distribution provider. There would be a need to be some uniform means of dealing with partial payments, non payments, and incorrect billings, on an equitable basis. In addition, provisions would need to be made for the collection and disbursement of taxes (such as sales or use taxes) and franchise fees.

However, retail competition may also provide opportunities for greatly simplifying bills and reducing the costs of billing for many customers. Customers with multiple locations may be able to consolidate bills under a single supplier, and may be able to work with suppliers to designate the particular information and format they would prefer for their bills. In addition, customers may have the option to procure multiple services (energy as well as other services) from a single supplier, which would also consolidate bills and reduce the administrative costs of billing and collection.

If the billing and collection function were to continue to be provided by the distribution utility, there would appear to be an opportunity to continue with the existing state controls presently required for the distribution delivery function, although there would be a need to establish at least the pattern or rules for billing and collection associated with the power supply and transmission functions.

The present individual utility billing and collection rules and systems could simply continue.

Distribution utilities regulated by the state would continue to come under the rules and regulations promulgated by the Commission, while customer regulated distribution utilities (i.e., cooperatives and municipals) would continue to establish their own billing and collection procedures consistent with whatever statewide standards were established by the legislature. Power suppliers and marketers would remain free to utilize the billing and/or collection services of the distribution utilities or provide such services on their own, subject to standards established by the state.

Connection and Disconnection Policies

Disconnection/reconnection policies and procedures could be handled in a similar fashion. Distribution utilities regulated by the state would continue to follow rules and regulations approved by the Commission. Customer regulated distribution providers would continue to use rules and regulations adopted by their appropriate governing bodies, subject, of course, to any requirements established by the state.

It is important to emphasize in this regard that the distribution utility should be the only entity permitted to physically connect, disconnect and/or reconnect a customer to the distribution system. Safety and other considerations preclude multiple parties from operating switches on a distribution system. Rules governing the disconnection of customers for nonpayment would need to be established in such a manner that the distribution utility would not find itself in the middle of the dispute between the customer and a power supplier or a marketer.

In a competitive market, a customer who has his energy supply contract terminated as a result of nonpayment to an energy supplier, would be free to arrange for an alternate provider by signing up with a competing power supplier. The contractual arrangements with the new energy provider to begin to supply service are not necessarily contingent on payment to the original provider. In instances where the origin of the contract termination order was the power supplier or marketer, the distribution utility would, in essence, function as an agent for the energy services entity. The dilemma here is that unless the meter is physically pulled from its socket, power will still physically flow into the customers location. Electrons do not look to see if a service contract is in place before deciding on a path to follow. The following questions will need to be answered: Whose power flows into the customer location if a contract is terminated and the meter is not pulled? Who sends a bill? Who receives the money? These issues are significant and complex, and will require some resolution prior to widespread implementation of retail competition.

The entire process should be simple and be set up to avoid conflicts. The distribution utility would be responsible for performing the billing, collection and related functions on behalf of itself. Whether these bills should contain any energy service items for the other selling entities will need to be discussed. If this arrangement were mandated by the state, the rates and reasonable practices for such service would need to be established through generally acceptable procedures to prevent unfairness by the distribution utility. The distribution utility would seem to be the logical entity to coordinate this function as it would be the one common constant in a possible string of entities that would be necessary to provide electric service to a customer.

Assuming that this function were assigned as a regulated monopoly service supplied by the distribution provider, the fee for the service would need to be based on cost of service.

Unfair Trade Practices

In the current regulated electric utility environment, the state has given the Commission the authority to protect consumers and ensure their fair treatment. Similarly, under retail competition, the state would want to guard against trade practices which are misleading, fraudulent or unfair. Recent experience with telephone deregulation and electric competition pilot programs have provided insight into some of the practices which may be employed by competitors in order to convince customers to purchase their energy services. In most cases, these practices can be prevented through aggressive enforcement of current consumer protection laws, or the implementation of new policies governing these situations.

Slamming

Most states involved in restructuring are proposing regulation for marketing practices. One recommended regulation would prevent "slamming," which refers to switching the customer's provider without permission or with fraudulent permission. This practice has caused complaint and condemnation in the telephone industry; such conduct could also occur in a competitive electric industry. Consequently, other states have either prohibited the practice or authorized their commissions to take preventative action.

Under California's law, customers who are solicited by a provider to switch electric suppliers must not be switched until the new supplier complies with independent, third-party verification procedures described in the regulations. Additionally, customers may rescind their contract within three days after their receipt of the written contract itself. Some argue, however, that this requirement would favor the incumbent provider and would serve as a disincentive to customers who will want to conveniently switch their supplier.

Misleading Prices

One of the central principles of utility rate design is that rates be easy to understand and administer. In competitive markets, the prices and terms and conditions of service offered by various suppliers are unlikely to be directly comparable and may be very difficult for customers to understand. For example, customers may select an offer promising electricity for a low kWh rate and find that they must also pay a high fixed charge, or that they must pay extra for services that would have been included in another offer. Customers may not understand the length of contract they are agreeing to or the implication of rates which will vary according to the time of day or the market.

There are at least two potential policies which could address the issue of misleading or confusing pricing. The first would be to adopt a uniform standard for disclosing the price and terms of the electricity being offered. This would be similar to Truth in Lending requirements that all interest

rates on loans be calculated in a uniform manner (the "Annual Percentage Rate" or A.P.R.). Uniform price disclosure which shows the total cost of electricity on a per kWh basis for varying levels of usage and clearly states contract terms would permit a customer to directly compare various offers and select the one which offers the best value for that customer's electricity needs.

Another policy which could assist or protect consumers from misleading and confusing pricing would be for the state to maintain an ongoing consumer education program and "help line" for customers to sort out electricity offers. The Attorney General's Residential and Small Business or Consumer Divisions may be able to provide some of those services. In addition, local Better Business Bureaus would likely begin to maintain information on various electricity suppliers, including any complaints on misleading or fraudulent pricing.

Environmental Disclosure

Surveys and initial pilot program results have indicated that many consumers want to purchase electricity based on environmental criteria. Many retailers have discovered that offering "green" electricity is an effective way to differentiate a product and to reach an otherwise disinterested residential customer class. However, experience from pilot programs has also indicated that there are many different interpretations of what actually constitutes a green portfolio of resources.

The potential for misleading or fraudulent advertising may be a problem if the definitions for "green," "renewable" and "less polluting" energy are not standardized. The Federal Trade Commission prohibits unsubstantiated claims; however, enforcing those requirements may require additional oversight on the part of state public utilities commissions or some other entity.

At a minimum, a suppliers who is marketing green power in the state should be required to provide customers with a general description of its portfolio and should have more detailed information on file with the appropriate state agency. Some advocates of information disclosure believe that green portfolios should be certified by state or federal regulators. Additionally, there are a number of private interest groups that are working on developing renewable energy "brands" and "green seals of approval" which could provide valuable information to consumers who wish to purchase green energy.

Some advocates of environmental disclosure also believe that all energy suppliers should be required to disclose the composition of their portfolios, whether or not they are making green claims. Advocates for full information disclosure argue that this is valuable information for consumers to have when they are making choices of electric suppliers; because of differences in consumers' perceptions and desires, having full disclosure from all energy suppliers will permit consumers to select their suppliers according to their own ideals and standards. Others caution, however, that disclosure could be costly and complex, and may not be possible for marketers who simply buy and sell power on the spot market. Full information disclosure has been equated with nutrition labeling requirements on food products, or portfolio disclosure requirements for mutual funds.

Dispute Resolution

In a restructured industry, the state may want to maintain a dispute resolution program and to require suppliers to keep records of customer disputes. Almost every state maintains the universal right of customers to refer their dispute to the commission if it is not satisfactorily resolved. This practice is important because customers expect their electric service to be subject to close supervision: since a substantial portion of their total electricity bill remains regulated this will be an important service. The dispute resolution authority will also allow monitoring of sales practices and compliance with basic consumer protection.

In addition, the state may need to resolve disputes among energy suppliers or between suppliers and distributors.

Change of Supplier

Suppliers and customers may need to have guidelines or rules on appropriate terms to terminate service, including the required notice and any termination penalty. These terms are important for customers to use in comparison shopping. Customers should probably have the right to change their retail electric supplier at any time, subject to any explicit contract terms and agreements that customers may have entered into. However, customers should be responsible for any unpaid charges owed to a supplier if the customer fails to properly notify the supplier. Distribution companies should respond promptly to customers' requests to change the their supplier.

Energy Efficiency, Renewables and Environmental Protection

Energy Efficiency and Renewables

Introduction

Over the past several years, there has been a growing movement for increased development of renewable energy and energy efficient technologies. Proponents of such a strategy argue that a number of benefits can be derived from renewable energy and energy efficiency technologies, including a stabilizing influence on electricity price, environmental benefits including decreases in local and windborne pollution, the potential to slow down depletion of fossil fuel resources through substitution, and local job development. Renewable energy resources can consist of a variety of fuels, such as geothermal, biomass, solar, wind, and photovoltaic energy.

Development and Use of Renewable Energy

There are statutory measures that prescribe a preference for the use of renewable energy in the state. Minn. Stat. § 216B.2422, subd. 4, *Preference for Renewable Energy Facility*, requires that the commission shall not approve a new or refurbished nonrenewable energy facility in an integrated resource plan or a certificate of need, pursuant to section 216B.243, nor shall the commission allow rate recovery pursuant to section 216B.16 for such a nonrenewable facility, unless the utility has demonstrated that a renewable energy facility is not in the public interest.

In addition, Minn. Stat § 216B.243 subd. 3a, *Use of Renewable Resources*, prohibits the commission from issuing a certificate of need to a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by a means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source.

In 1994, the legislature passed Minn. Stat. §§ 216B.2423 and 216B.2424 (Wind Power and Biomass Power Mandates), statutes requiring Northern States Power to construct and operate or contract to construct and operate a certain amount of generation by these two types of renewable energy. These mandates were made in part to support and enhance the quality of the environment, improve the diversity of NSP's electric supply, and provide economic development opportunities within the state.

Energy Efficiency and Conservation Improvement Programs

Minn. Stat. § 216B.241, *Energy Conservation Improvements*, requires the annual expenditure of funds by all types of utilities (Cooperative, Investor-owned and Municipal) in conservation and load management initiatives. Electric utilities in Minnesota are required to spend 1.5 percent of

their gross state revenues on energy conservation improvements. The exceptions to this requirement are NSP, which is required to spend 2 percent of its gross operating revenues[4] and municipal utilities which are required to spend only 1 percent of their gross revenues on conservation activities. Gas utilities are required to spend 0.5 percent of gross state operating revenues.

Minn. Stat.§ 216C, *Department of Public Service; Energy Division*, is replete with efficiency standards and requirements for the stated purposes of promoting the vital state interest in providing for increased efficiency in energy consumption, the development and use of renewable energy resources and the creation of effective energy forecasting, planning and education programs.

Additionally, the Commission's ratemaking authority provides specific support for conservation, energy efficiency and renewable energy. Minn. Stat. § 216B.03, *Reasonable Rate*, directs the Commission to set rates that encourage energy conservation and renewable energy use and to further the goals of Minn. Stat. §§ 216B.164, 216B.241, and Minn. Stat. § 216C.05.

The State of Minnesota has, through statute, clearly stated a strong public interest in the promotion of conservation and energy efficiency. This is currently carried out through the state's regulated utilities. If the state proposes to maintain its commitment to efficiency post-restructuring, it will likely need to find alternative mechanisms to promote this goal which are compatible with a more competitive market.

Renewables and Efficiency under Retail Competition

The current strategies used to promote development of renewables and energy efficiency may not be compatible with increased competition in the electric industry. With the nation debating change in the electric industry, utilities are currently uncertain about the future, and are more likely to make decisions based on short-term considerations. Generation and supply portfolio planning may be based on the next five or ten years, instead of the thirty-year horizons which were employed in the past. It is assumed that a competitive market for electricity will favor those companies which have reduced their rates. This short-term focus may keep companies from incurring any costs that may increase their prices in the short run.

Because many renewable energy technologies and energy efficiency programs require high up-front capital costs and long-term financing, these resource options may be ignored for other investments which are more profitable in the short-term. Electric generation using gas and other fossil fuels is currently cheaper than renewable energy resources, in part because it does not include all of the costs to the environment from burning fossil fuels. These excluded costs are called externalities; they are either direct or indirect costs associated with an activity, such as air

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[4] NSP is required to invest an additional 0.5 percent in conservation improvements because it operates a nuclear-powered electric generating plant within the state.

pollution resulting from burning coal. In addition, many renewable technologies are still in the developmental stages, and have not yet achieved the economies of scale, scope and maturation which are available with more conventional generating technologies. Thus, if customers only consider the short-term in a deregulated market, utilities that include substantial renewables in their fuel portfolio will be at a price disadvantage compared to those companies that rely on conventional generation.

From the mid-1980's to the early 1990's the majority of state public utility commissions adopted requirements that utilities implement integrated resource planning (IRP) processes. The goal of IRP is to assess demand and supply resources on an equitable basis, and to meet customer energy-service needs at the lowest societal cost. Energy efficiency, load management, and renewable technologies are considered as viable alternatives to conventional generation. IRP frequently includes utility-sponsored demand-side management (DSM) programs for the planning, implementation, and evaluation of consumers' energy use. The intended result is a plan providing reliable and low-cost energy services to customers, a reasonable return on investment, financial stability and regulatory certainty for the utility, and environmental protection.

In a competitive electricity industry, energy efficiency measures and renewable energy resources may not be given much support compared to the IRP of the regulated utility industry. Particularly, efficiency programs have not been a primary concern of many restructuring proposals. Around the country, renewable energy incentives have been hotly debated, but not fervently supported by all parties.

Some stakeholders argue that the competitive market will be sufficient to support renewable energy and energy efficiency. They suggest that renewables will have equal access to transmission facilities and to customers, and that these technologies have the same opportunity to compete in the marketplace as all other resources. They argue that consumers can choose "green" electricity or efficiency, and note that there are many studies showing that consumers value environmentally superior power and would be willing to pay extra for it. Additionally, utilities may want to diversify their resource portfolio in order to hedge against possible fuel-price shocks or future environmental regulation. However, others argue that competitive pressures will urge companies to incur only the bare minimum of costs in order to compete in the uncertain future of the utility industry. Also, the developing industries of most renewable technologies will not have the same foothold in a competitive atmosphere as will most conventional generating technologies.

Policy Options for Energy Efficiency Services

The primary decision determining the choice of efficiency policies is whether public funding for these programs is still justified. Some argue that public funding is not necessary, others argue that public funding is essential and justified.

Market-based Mechanisms

Some stakeholders support using the competitive market to provide energy efficiency services. Distinct energy products and services may be marketed by offering efficiency options. A competitive market is likely to provide consumers with better price signals, which will be used in the determination of whether to invest in efficiency or energy supply. In this model, consumers will pursue efficiency when the marginal benefits exceed the marginal costs. Likewise, companies will offer energy efficiency services when their marginal revenue exceeds their marginal costs. Under a market-based mechanism, there may still be some regulatory requirements designed to enhance efficiency, such as the installation of real-time pricing meters or telecommunications linkages to provide consumers with time-differentiated price signals.

Public-funding mechanisms

Proponents of publicly-funded efficiency programs have two focuses. The first is on the mechanisms needed to collect and distribute the funds, the second is on the selection of agents providing the services. Options available for fund collection include:

- general tax revenues
- a consumption tax on electricity and other fuels
- voluntary contributions from individuals or businesses
- a non-bypassable service charge

The latter option, also called a "systems benefits charge," is the method employed by most states which have adopted restructuring legislation or plans. The charge would apply to all retail electricity sales, and so ensures that all recipients of end-use service contribute equally to efficiency funds. Also, a service charge achieves administrative simplicity in the assessment and collection of the revenues. Determining the size of this charge is a key policy decision. Some proposals have based the charge on national average efficiency expenditures, while others suggest funding at existing levels or levels of the recent past. At least some planning activity is needed to determine the size of the charge. As this type of charge has also been proposed to collect money for other public benefits programs, such as renewable energy and low income programs, and the recovery of stranded costs, such a policy may also need to face issues relating to allocating the funds collected among competing interests.

Managing these funds may occur through one of two primary options. The distribution company may collect the funds and would then be responsible for all publicly-funded efficiency programs, although with regulatory oversight. The other option would be for the distribution company to collect the funds, while a separate organization was responsible for distributing the funds or implementing the programs. Alternatives for this organization could be an existing state agency, a new agency, or an independent nonprofit entity regulated either directly or indirectly by the state.

Many stakeholders believe that if the state sets a policy supporting funding for energy efficiency,

that funding should come out of the state's general revenues, and should not be levied as special taxes or fees on energy use. Voluntary contribution funds have proved helpful, even under today's system, in providing energy efficiency to low income households.

Transition Mechanisms

Many people believe that any continued public support for energy efficiency will only be needed in the transition to a more competitive market. A transition mechanism would permit energy efficiency to survive in the turmoil of a changeover from utility-sponsored DSM programs to a competitive market. Some proponents of the transitional approach argue for a clearly specified period (e.g. five years) with public funding gradually reduced over time. Others argue that it is not possible to define in advance how long a sustainable energy efficiency market will take to achieve. In this case, public funding would be needed until an efficiency market is sustainable, understanding that some services may never be provided by the market, such as low income energy efficiency services.

Other States' Decisions on Energy Efficiency Services

Most other states involved in the restructuring debate have passed or recommended a variety of energy efficiency promotions. States have most frequently chosen a distribution charge on ratepayers to fund energy efficiency programs. The transmission and distribution utility usually collects the funds and selects the energy efficiency service who receives the funds. A brief explanation of several states' decisions and opinions follows.

Vermont will fund their state-wide efficiency programs through a System Benefits Charge (SBC) on all state electricity consumption. These revenues will be used by one or more newly-created "efficiency utilities;" these entities will be non-profit organizations with a purpose to solicit and review bids for cost-effective energy efficiency programs, and to use the SBC funds to implement these programs. The SBC will be used to fund efficiency during the transition to distribution utility programs, codes and standards, market-based initiatives, and statewide benefits programs.

Maine recommends that efficiency programs should also be funded through revenue collected from ratepayers. However, it differs from Vermont in that it would have the transmission and distribution utility select the efficiency service provider through periodic competitive bidding.

Rhode Island's legislation includes instructions for a surcharge fund. It requires 2.3 mills/kWh to be collected at the distribution level for the next five years, at which time the surcharge will be reevaluated. This charge will be used to fund demand side management (DSM) and renewable energy programs.

Massachusetts has endorsed market-driven energy efficiency programs designed to take advantage of market opportunities for more efficient use of energy. Its proposal asks that each

investor-owned electric company file a plan that will move it toward market-driven efficiency programs over a five-year period.

Pennsylvania proposes leaving energy efficiency services to the market. The Pennsylvania PUC states that these services are widely available on a competitive basis. Therefore, it feels that efficiency should be provided without regulatory intervention.

Work Group Discussion on Efficiency

Members of the work group generally agreed that energy efficiency is an important goal; however, they did not agree upon the means to achieve this goal. Some members are concerned that utilities are cutting their DSM budgets in response to the threat of restructuring. Others argue that utility DSM programs unnecessarily raise costs and force some consumers to subsidize efficiency improvements for other consumers. Although DSM may reduce costs over the long term, retail competition may favor a short term view. These measures can be costly up-front, so customers may not invest in them and may not support utility investments that raise costs in the short term. Also, if prices for energy are lower in a competitive market, customers may have a tendency to increase consumption and have less incentive to invest in efficiency.

Assessment and Market Failure

Some members felt that utility-sponsored DSM may not be the best way to promote efficiency. Others suggested we could be doing more with efficiency; our present programs may be too limited. The group agreed that Minnesota should analyze the impacts DSM programs are actually producing. Additionally, the programs and incentives for efficiency should be reassessed, and other options evaluated. One way to examine this problem is to determine where markets are not presently producing enough efficiency, and where retail competitive markets will fail to provide for efficiency. The group agreed that market failure is most likely to occur in the small-customer, residential, and low-income sectors. These customers often do not have sufficient information in order to make an informed decision about energy efficiency.

Even when customers are properly informed about their options, the up-front investment required may act as a barrier to adoption. Budgets are often too tight to make higher cost, high efficiency appliances a feasible option. Large customers will likely be more self-sufficient in acquiring efficiency programs in a competitive world; however, in the competitive market the provider of efficiency may also step in to provide up-front capital or innovative financing to implement cost-effective improvements. In a competitive market, buyers will use price signals to determine when to invest in efficiency, or to buy the supply of energy. Larger energy users will be able to make these price comparisons, and will have the ability to make the choices between their options.

Options and Solutions

The work group looked at several options for efficiency programs that could help correct market

failures. A systems benefit charge (SBC) was the option discussed to the greatest extent. The SBC would apply to all retail electricity sales, so all end-users of electricity contribute equally to the fund. Advantages of an SBC are that it raises large amounts of money, yet it is also competitively neutral since everyone is contributing. However, a major problem is deciding how to distribute the collected funds. A government agency, the distribution utility, or a private company could administer the program. The magnitude of these charges may be fairly large; social goals and energy efficiency may suffer from the competition of determining who receives the funds. Some stakeholders argue that a surcharge is undesirable because it raises the cost of electricity for consumers.

One specific application of an SBC is to administer the funds through a conservation utility. This would take efficiency out of the hands of the traditional suppliers of the service; this may be beneficial because it would remove the inherent conflict between selling and saving energy. A conservation utility would also neutralize any competitive advantages which may arise from utilities' provision of DSM, and give ESCO's and private organizations a fair chance into the efficiency market. The United Kingdom has set up an Energy Savings Trust, funded by a small surcharge on all consumers' electric bills. This type of a program is one example for supporting efficiency in a competitive market.

Another approach would be to rely on the market to provide energy efficiency. Some stakeholders believe that many companies are interested in providing DSM as a service, and that customers will be just as willing to pay for the service. There is an opportunity for power suppliers to package demand-side management with supply as a value-added service. In order to create a successful market for energy efficiency, customers will require understandable information which will permit them to compare the costs of efficiency and electric supply.

Most of the group agreed that a good way to achieve efficiency would be to concentrate less on rebates, and to focus more on facilitating market transformation to more efficient electric end-uses. If the market for appliances and other products were saturated by high-efficiency goods, consumers would have little choice but to buy an efficient product. Minnesota could adopt higher efficiency standards, similar to Wisconsin and other states, or it could support stricter federal standards. This solution could be very effective if the standards were well enforced.

Overall the group felt that efficiency measures will survive nationally in a competitive market, but only with support during the transition period. The initial shock to competition may cause some programs to fail, if they do not receive some support. A bridge is needed to help efficiency programs make the switch from regulation to competition.

The following questions were raised, but not answered by the work group:

- if you separate DSM from utilities, can we broaden its effectiveness?
- what is the fairest way to levee costs and benefits?
- how do we measure if efficiency programs are working?
- what kind of mechanism will be used to enforce regulations and standards?

Policy Options for Renewable Energy

Existing and new renewable energy resources may be threatened by electric industry restructuring and retail competition. Policies and/or regulatory agencies supporting renewables may no longer exist under retail competition. Also, investment decisions currently being made by public regulatory agencies would be made by private stakeholders. These entities will want to decrease their investment risk, and therefore will be hesitant to invest in renewable technologies with high capital costs. Several proposals have been developed in order to support the renewable energy industry in a restructured, competitive environment.

Renewables Portfolio Standard (RPS)

A Renewables Portfolio Standard (RPS), or Minimum Renewables Purchase Requirement (MRPR), would require a certain percentage of a state's annual electric use (or capacity) to come from renewable energy. Retail electric suppliers would be required to purchase or produce a minimum amount of renewable energy, based on their total energy sales or capacity. Individual retailers would be allowed to trade their renewable obligations through a system of renewable energy credits (RECs); this opportunity allows for maximum flexibility and least-cost implementation of the policy. A REC represents one kWh of renewable energy generated by a facility, and contracted for sale in the state.

To meet the requirement, retailers have three options: (1) they may own and use their own renewable energy facilities; (2) they could purchase RECs bundled with renewable power purchases from independent renewable generation facilities; or, (3) they may purchase RECs from a private REC market. Therefore, the renewable energy generator has two markets, one for the energy generated, and one for the RECs that represent energy generated. Government involvement would be limited to: (1) setting the percentage standard and ground rules; (2) certifying RECs; and, (3) enforcing compliance with the requirement.

Some people believe that the RPS is the most effective policy for advancing renewable development in a restructured industry. It would provide more certainty for developing technologies and help diversify the resource mix. In addition, the RPS is a market-based approach which would not require administration of funds, and which would phase itself out once renewables are well-established in the marketplace.

However, the RPS is a new and untested policy. The cost of the RECs is market-based; because of this, some stakeholders are concerned that without a cost cap, RECs may become unreasonably expensive. Utilities are also concerned that the RPS will force resource decisions on them, since the RPS is not completely reliant on market forces to allocate resources. Retail electric suppliers may possibly be overly-burdened by the requirement to actively participate in the renewables market.

System Benefits Charge

Another option for supporting renewables would be to place a surcharge on all electricity end-users in the state. Retail electric suppliers would be responsible solely for the collection of funds. The resulting funds would then be used for the development of new renewable energy generation projects. A disadvantage of a benefits charge is that an allocation mechanism is required in order to disperse the collected funds. One dispersal option would be to hold a competitive auction in order to determine fund recipients. In addition, as with efficiency, this type of charge is being considered to fund a number of competing interests.

Green Marketing

The third proposal relies more on market mechanisms and individual choice than the other two options. In this scenario, power suppliers would offer electricity generated by "green" power, symbolizing renewable energy sources of some type. Consumers would purchase this service by their own choice, and would likely pay a higher price for this option. Green marketing attempts to take advantage of some consumers' willingness to pay for products that provide environmental, health, or other public benefits. It is expected that any competitive electricity market will have a green marketing segment, but it is unknown whether the size of the market will be large enough to support a sustainable renewable energy industry.

Stakeholders list advantages and disadvantages to this policy option as the sole means of supporting the development and inclusion of renewables in the resource mix. Several advantages support green marketing. First of all, little administration is necessary because the government is not mandating any requirements. Also, market freedom is exemplified by green marketing, because it is based on free choice. Consumer surveys and early results from customer choice pilots have indicated that there are a number of customers who are interested in voluntarily purchasing green power and even willing to pay a premium for it. In Minnesota, Cooperative Power and its rural distribution cooperatives are currently experimenting with a green marketing project.

This option also has some disadvantages. The main problem is that fundamental market failures are not addressed by green marketing. For example, this mechanism relies on consumers to voluntarily pay more in order to protect the environment and the public good of clean air. Not everyone will choose to buy green power, so the customers who do choose to pay will be providing for the public good not only for themselves, but also for those consumers who are not paying for this benefit. Furthermore, if the size of the voluntary green power market is not large enough to sustain the renewables industry, there will not be green power available even for those customers who choose to purchase it.

In order for green marketing to be successful, the issues of disclosure and fraud must be addressed. The immediate issue is the necessity of certification for the degree of renewable energy constituting the "green" power title. In other words, electricity retailers need to disclose how "green" their renewable power actually is. Fraud may be a problem if retailers are selling power under the title of renewable and "green," when actually the power being generated is fossil fuel based. In addition, there has been some discussion about whether the green label should be

reserved only for certain types of renewable, in particular, new renewables which are actually displacing more polluting resources (as opposed to a simple repackaging of existing renewables).

Other States' Decisions on Renewable Energy Policies

Decisions and recommendations for renewable energy vary widely between the states. Proposals and policies range from renewable portfolio standards with explicit requirements to letting the market support renewable energy on its own. On a national level, issues relating to renewable energy are also being considered. Representative Dan Schaefer of Colorado has proposed a bill to set up a Renewables Portfolio Standard nationwide. The requirement for energy retailers would start at 2% renewable energy, and would increase to 5% in 2010.

Maine recommends that all companies selling power to retail customers should include a minimum amount of renewable energy in their generation portfolio. Companies could meet this standard in several ways: they may generate renewable power themselves; they may buy renewable energy from a generator for resale; or they may obtain renewable credits from companies with renewable energy in excess of the requirement.

Similar to Maine, in Vermont's proposal retail companies must also secure a minimum percentage of their sales from renewable resources. This requirement will be used to preserve their existing level of renewable generation, and to promote the development of technologies near commercialization. Vermont further proposes a small surcharge on electricity consumption for the promotion of research and development of new technologies.

California's bill includes a systems benefit charge to be collected by the three largest investor-owned utilities and also by publicly-owned utilities. Total renewables funding over the four-year plan will total $540 million. This fund will be given to research and development of new technologies, and to support existing renewables facilities; the California Energy Commission will administer the renewable energy funds.

Rhode Island decided to promote renewables through a distribution charge. A charge of 2.3 mils/kWh will be collected for five years. This fund will be used to support renewable resources and demand-side management programs.

Massachusetts favors market-based approaches for removing barriers to competition and for creating incentives for market participants to use renewable energy. Consumers willing to pay a small premium for renewables will have this option without funding support. Renewable energy costing more than the premium customers are willing to pay will receive help from a small renewables fund. A distribution charge of 1 mil/kWh will be used to fund chosen renewable energy sources.

New Hampshire and Pennsylvania set up no program or fund to support renewable energy. These states feel that renewable technologies are available in the competitive market, and that "green marketing" can be employed to entice customers to purchase directly from suppliers who

utilize renewable resources.

Work Group Discussion on Renewable Energy Policies

Many stakeholders are concerned that renewable energy, especially wind power, will not fare well in a competitive market where short-term marginal cost is likely to be the main driver of price. The future may hold opportunities for successful renewable energy; however, other countries now have the cutting edge. Much of the success enjoyed by the renewable energy industry in Europe is a result of government support. If the renewable industry in the U.S. is to stay afloat, similar measures of support may be necessary.

Renewable Portfolio Standard (RPS)

The work group had a full presentation and discussion on the Renewables Portfolio Standard. Several stakeholders suggested that in order to be competitively neutral, an RPS would have to be implemented on national level and not by an individual state. In addition, many had concerns over the affordability and implementation details of the standard.

The first concern addresses whether the RPS will be competitively neutral. Suppliers are concerned that they may have to fulfill requirements that others are not being held to; an RPS needs to be competitively neutral in order to be fair. The RPS will probably require all electricity retailers to maintain the same percentage of renewable energy in their portfolios, either through direct ownership or purchase of RECs. Some utilities already own enough renewable energy generation to fulfill the requirement (perhaps even more, depending on where the standard is set), while others would need to pay to acquire renewables or RECs. Thus, the costs of the standard may fall more heavily on some suppliers.[5]

A second concern is the level at which the RPS should be set, and how uncertainty can be factored into the requirement. Because the state's renewable capacity is uncertain, a renewables standard must be carefully set to ensure that the standard is achievable. One way to factor in the potential for fluctuation in renewable energy production would be to permit banking of excess renewable energy credits (RECs) that a generator produced in one year. These could be used as a cushion in case of a shortage of energy production in the following years.

A specific concern about the implementation of the RPS is that the price of RECs may become unreasonable. Supporters of the policy argue that the market will work to set the price at a reasonable level. Some retailers are interested in putting a cost containment cap on the price of the RECs; the cap would protect retailers in the event that a shortage of renewable energy supply may drive the price up.

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[5]This is very similar to the impact of Title V of the Clean Air Act Amendments of 1990, where the SO_2 trading system "rewarded" utilities which had previously reduced emissions.

Environmental Protection

Policies encouraging or requiring the use of renewable energy and energy efficiency are a part of the state's overall scheme of environmental protection. In addition to these policies, the state has regulations in place to limit the emissions of harmful pollutants, and to consider environmental impacts in the selection and construction of new generating resources.

Minnesota has two major environmental protection statutes, the *Minnesota Environmental Policy Act*, Minn. State §116D.01 et seq., and the *Minnesota Environmental Rights Act* Minn. Stat. § 116B.01 et seq. The Environmental Policy Act establishes environmental protection as a major policy goal and requires state agencies to give environmental factors high priority in the discharging of their duties. The Environmental Rights Act gives individuals broad environmental rights and standing to enforce those rights by initiating or intervening in legal and administrative proceedings.

In addition to those Acts, there are a variety of ways in which rate regulation directly impacts environmental protection. From allowing rate recovery of utility investments in pollution control equipment, to establishing values for environmental externalities, to the use of social costing in the selection of future generation facilities, the current regulatory structure considers and promotes environmental quality.

Minn. Stat. § 216B.2422, *Resource Planning; Renewable Energy*, includes a subdivision on environmental costs which requires utilities to use Commission-established environmental cost values, along with other external factors, when evaluating and selecting resource options in all proceedings before the Commission. The Commission and other state agencies must consider environmental impacts in the need for and location of electric generation facilities and transmission lines.

In addition to these policies, electric generation facilities in the state are also subject to state and federal environmental regulations, which prescribe acceptable levels of air emissions and plant discharge, among other things.

The Commission has indicated its own concern for environmental protection by adopting Restructuring Principle #11, *Environmental Improvement* in its Investigation into Structural and Regulatory Issues in the Electric Utility Industry. This Principle advises that "any restructuring of the electric industry should include a plan to improve the environmental quality of the state." (Emphasis Added)

There is some concern that industry restructuring will have adverse impacts on the environment, largely because the emphasis on low price may prevent the construction of clean, new and renewable technologies and provide incentives to run older, dirtier fossil fuel plants more often. In addition, there are currently disparate environmental regulations which permit older plants to emit more pollutants than new sources, thus creating an uneven playing field in terms of the costs of environmental protection.

Others disagree with this viewpoint, arguing that restructuring will not eliminate basic environmental laws and rules, and that these are sufficient to protect the environment. Yet another argument is that restructuring will favor cleaner technologies, both because they are less expensive than many older plants and because customers will demand them.

Resource Planning and Acquisition

One of the ways that the state has ensured that utilities are factoring energy efficiency, renewables and environmental protection into their planning is through a series of proceedings which comprise the Resource Planning and Acquisition Process. These proceedings, which start with a biennial resource planning process and include competitive bidding, certificate of need for large energy facilities, and power plan siting or transmission line routing, are described in detail in the Competition Work Group's Wholesale Competition Report (October 18, 1996).

In that report, the Work Group discussed the ways in which the current process of resource planning and acquisition would be incompatible with increased competition in the electric industry. It also looked at some of the interests that the state may continue to have in resource planning and acquisition, and proposed one alternative to the current process. Most of the discussion is applicable to both wholesale and retail competition, and the alternative proposed was intended to be compatible with either. The Work Group acknowledged that additional study is required on this issue, in particular to refine the alternative identified in the wholesale report to be workable under retail competition. It was unable to complete this work during its retail discussion. This is one area where additional technical discussion may be useful to advance the state's discussion on retail competition.

Other Public Benefits

Public Interest Responsibilities

There are significant public interest responsibilities which have been addressed under the current electric utility structure and regulatory environment. Measuring the benefits achieved in addressing these responsibilities is difficult. Clearly however, addressing these issues has become the responsibility of the existing regulated utility structure. Among these responsibilities are bill payment assistance and conservation programs for low income households, the use of renewable energy and energy efficiency to promote diverse electric resource portfolios, more efficient use of electricity, and environmental protection. Each of these benefits have been discussed in other sections of this report.

Additional public responsibilities briefly discussed below include support for economic development and non-discriminatory pricing. Another benefit is the voluntary cooperation between utilities to insure reliability and service quality and to repair facilities and restore service in emergency circumstances[6]. In addition, utilities make voluntary contributions to national electric industry policy and research and development entities which pool industry resources to develop standards and perform research to improve the generation, delivery and use of electricity.

When considering public interest responsibilities in a move toward more competitive electric service, a threshold question is whether the state wishes to continue to provide many of the benefits which have traditionally been delivered through the regulated electric utility. If the state determines that certain programs should continue to be provided, it must also determine how best to provide and finance those programs.

Some work group members assert that continued regulatory intervention in order to provide these types of programs may be too intrusive to the competitive market and prevent the market from achieving its full potential. It was also argued that if the state sees a public purpose to providing these programs, it should do so using general revenue funds. Many states are considering market-compatible mechanisms to deliver some of these benefits; other programs are being left to the market entirely. Most stakeholders agree that in order to maintain a level playing field for competitors, any state-ordained program must be delivered in a manner which cannot be bypassed by any electric provider or consumer.

Economic Development

The state has two main goals when it comes to energy and economic development. The first goal is to maintain competitive electric rates in order attract and retain businesses and manufacturers.

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[6] This issue was mentioned several times in the public comments received by the Commission. There is a concern that utilities will share less information and be less likely to cooperate during emergencies because they will view each other as competitors.

The second is to tap into the economic development potential that is offered through fostering renewable energy and energy efficiency industries within the state. Because renewable energy is more expensive on a direct cost basis than many conventional supplies, these goals are sometimes in competition with each other.

There is potential to achieve economic development in Minnesota directly from new investments in renewable electric generation. The development of wind energy for example, can bring a certain amount of economic development to rural Minnesota. Wind energy, relative to traditional methods of electric generation, is a labor-intensive technology and will require personnel to maintain and operate the wind farms being developed. Southwestern Minnesota is experiencing some of this as a result of the Commission's directive to NSP to develop 25 MW of wind energy and by the legislative mandate that NSP develop or purchase several hundred MW of wind energy. However, the most significant source of economic development from renewable energy would be in the manufacturing of the materials and equipment. An equipment manufacturer could provide several jobs to a community in addition to the production of a value-added product and associated services.

Retail competition can increase the economic development gains from renewable power if large numbers of customers choose green power (or if the state implements some other type of program to provide incentives or support for renewable energy development). Conversely, if high demand for renewable energy does not materialize, the state may lose gains which have recently been achieved.

Economic development is another issue of public interest, given statutory preference suggesting it is a vital interest to the state. For example, under Minn. Stat. § 216B.03, Reasonable Rate, directs the Commission to establish rates that are just and reasonable. It further directs the Commission that rates shall not be unreasonably preferential, unreasonably prejudicial or discriminatory, but shall be sufficient, equitable and consistent in application to a class of customers. However, the legislature has also seen fit to provide for special rates and practices, one of which promotes economic development. Minn. Stat. § 216B.161, *Area Development Rate Plan*, allows the Commission to approve gas and electric utilities to offer area development rates designed to assist industrial revitalization projects located within the service area of the participating utility. At least one utility has offered such a rate for five years.

There are also a number of other provisions in the law which permit utilities to respond to the economic development needs of their customers. Utilities are specifically permitted to recover economic development expenditures in rates, and in many cases are permitted to offer companies competitive rates in order to keep a customer on the system. Under retail competition, rates for electric energy would not be regulated by the Commission, and these types of provisions would not be necessary.

The Commission has also found that maintaining a competitive environment and promoting economic development is an important factor in any plan to restructure the utility industry. Commission Principle #14, *Competitive State Economy*, states that "a restructured industry

should promote prosperity of the state's economy, including the fostering of cost-effective in-state energy resources."

Voluntary Cooperation

Under the existing utility structure, utilities have formed voluntary associations or become involved in collaborative efforts to enhance the maintenance, as well as the reliability and service quality of their distribution systems and the transmission grid.[7] For Minnesota, the Mid-continent Area Power Pool (MAPP) is the most striking or well known example of such an association. Under this organization utilities have coordinated the generation and transmission of electricity, including the scheduled and unscheduled maintenance of various generation stations. This association has resulted in very reliable service. In addition, utilities also have less formal associations which in cases of unusual or emergency circumstances, utilities pool resources and repair damaged equipment in order to restore electric service as quickly as possible.

There has been concern expressed that under retail competition, it will be much more difficult to depend on voluntary associations to assure the safety and reliability of the electric system. The U.S. Department of Energy is holding task force meetings to discuss the future of reliability enforcement in the electric industry; similarly, the North American Electric Reliability Council (NERC) has been looking at internal change to better provide for a changing market. MAPP has been responsive to the evolving industry and is working on implementing a number of programs, including its Regional Transmission Group and a proposal for an Independent Transmission System Operator, which may enhance competition in the region.

Research and Development

Utilities, in a voluntary association, contribute money and resources to national research and development organizations which examine subjects specifically related to the supply and demand for electricity. Most of the information gained from this research is shared by the entire utility industry to enhance the generation, distribution and consumption of electricity to the general public.

The voluntary nature of these associations have worked well under the existing utility structure in which utilities do not view themselves and each other as competitors. For the most part each utility has had a service monopoly over a given set of customers and did not concern themselves with the potential for competitors. Therefore, the sharing of information and technology enhancements was not considered a threat to their future viability. There is a concern, however, that in a restructured industry there will be little incentive to cooperate on research and

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[7]Many stakeholders point out that much of this cooperation happens at the level of the distribution utility, for example when systems are severely damaged due to weather. Since the distribution utility will not be subject to competition, it is probable that this type of cooperation will continue.

development, and that most public interest R&D will be left to the government or will not be performed at all.

Market Power

One of the foremost concerns regarding retail competition is whether sufficient competition will be able to develop in the market. Successful competition requires the existence of many buyers and many sellers. Because the electricity market is currently dominated by large companies with monopoly service territories, many worry that a competitive electricity market will result in too few competitors, significant barriers to entry, and the potential for anticompetitive behavior among market participants.

There are a number of remedies which have been proposed to mitigate the potential for market power in a restructured industry. Many of the proposals have to do with ensuring fair and open operation of the transmission system, by requiring divestiture or independent operation.[8]

Although it agreed that market power concerns are of utmost importance in the industry restructuring dialogue, the work group was unable to hold an objective discussion of the issue. At the time the work group was meeting, Northern States Power Company's proposed merger with Wisconsin Energy Corporation was pending before the Commission, and many work group members were parties to that proceeding. The proposed merger raised many issues related to market power in a changing electric industry, and many stakeholders were unwilling to hold general discussions on the issue while the case was in litigation.[9] The work group expressed an interest in holding a discussion on market power at some time when the potential conflict was resolved.

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[8]For more detailed discussion of competitive transmission issues, see the Work Group's Wholesale Competition Report at 9

[9]NSP and WEC abandoned plans to merge in May, 1997.

Stranded Costs

The recovery of stranded costs has been a contentious issue in the national restructuring debate. Stranded costs, sometimes called transition costs, are costs incurred by a utility to serve its customers that were being recovered in regulated rates but would no longer be recoverable in a competitive market. Types of costs which may be stranded include:

- cost of electric generation above the market price for electricity
- cost of canceled facilities
- certain regulatory assets
- costs of mandated programs, such as energy efficiency
- costs of uneconomic purchased power contracts

Three main issues surround stranded costs in a restructured industry:

- how to define them?
- how to measure them?
- who should pay for them?

Utilities argue that they should receive the same guarantees to recover these costs in a restructured industry as they had when they incurred the obligations under an earlier regulatory framework. However, many customers believe that these costs should be paid by company shareholders, or at least shared between customers and shareholders. States that have reviewed this issue have usually determined that incumbent utilities usually have the burden to demonstrate that the stranded costs are verifiable, prudently incurred, and that mitigation efforts will be as vigorous as possible. The work group based its discussion on the Commission's restructuring principle on stranded costs:

Restructuring Principle #10: *Fair and immediate treatment of transition costs.* The recovery of net, unmitigatable transition costs ("stranded costs" and other costs related to a move to a new market structure) should be shared by all stakeholders, including investors and customers. Proposals to recover stranded investment must include consideration of deferred taxes and other ratepayer contributions currently on the books of the utility.

Measurement of Stranded Costs

Calculation of stranded costs is complicated and controversial. This measurement process requires two main decisions. The first decision is whether stranded costs will be measured with a net or gross approach. Final stranded cost values may be calculated from a broad, long-term viewpoint, including all costs above and below market over a certain period of time; or, values may be determined by looking at each cost individually. The second decision is which costs should be included in the calculations.

Stranded Cost Calculation Methodologies

Maine has suggested the following valuation methodology:

For utility-owned power plants, stranded costs would be estimated by calculating the difference between net plant investment and the value of expected future revenues. For purchased power contracts, the difference between future contract payments and the market value of the power would be calculated.

Pennsylvania defines stranded costs as a function of the market price for electricity in a competitive market.

New Hampshire offers two approaches, but prefers the second approach:

- the projected generation market price over a ten year period would be compared to the book generation cost. The difference between these two values would be multiplied by the expected sales per year. Under- or over-recovery of costs would be the resulting value

- in this method, the utility is only permitted to recover the difference between market rates and the average historic costs of the utilities in the region. A regional approach is taken because each utility in the region has historically operated under many comparable economic, climatic, and regulatory conditions. Utilities with rates in excess of regional averages would not be allowed to recover 100 percent of their stranded costs

The NH PUC issued an order requiring the second approach. Utilities, arguing that this would not permit them full recovery of stranded costs, filed immediately for a court injunction and for FERC review of the order. The decision is currently under consideration by the courts.

Recovery of Stranded Costs

Who should pay?

Should the utility's shareholders, ratepayers, or both foot the bill for stranded costs? "Sharing" the burden between utility shareholders and customers would reduce the recovery by some specific portion. However, the assignment of recoverable "portions" may become arbitrary and lead to excessive legal challenges. The states are focused on balancing fairness to the utilities and to the ratepayers so that the burden of stranded costs is appropriately shared. Significant disagreement exists over the relative responsibility for the resource decisions of utilities that have led to above-market costs.

Final determination of stranded cost recovery should consider the potential anti-competitive consequences of varying recovery levels and the potential financial impact on utilities. The state of New Hampshire has expressed two potential anti-competitive consequences of stranded costs charges. First, they are concerned that effective competition would be postponed or completely

prevented. Secondly, they speculate that utilities would use the resultant funds to undercut competitors and increase market share rather than retire their debt.

Cost Recovery Mechanisms

All states that have enacted restructuring laws or have proposals have addressed stranded costs in some way. The favored solution for these transition costs is to place a non-bypassable surcharge, frequently called a Competition Transition Charge (CTC), on all retail consumers. Implementation of the CTC is detailed and has been highly-debated. The recovery charge is generally included as a wires charge rather than in the generation charge; therefore all generation prices are at the market rate. Stranded cost recovery in other states has been spread over a period of up to 10 years, after which companies are no longer guaranteed recovery. Additionally, state regulators have set dates (generally 1995-1997) after which any investment made may not be recovered through the CTC.

Several other options exist for cost recovery mechanisms. The Massachusetts surcharge may have a fixed and variable component to reflect cost incurrence. Massachusetts is further encouraging utilities to divest generation as a means of establishing the level of stranded costs. New Hampshire has explored options outside of the surcharge mechanism. Exit fees, which charge stranded costs to customers who choose to leave the local electric utility for competitive alternatives, are another possibility. However, the New Hampshire legislature discourages exit fees. Tax revenues have also been considered as a means of compensating utilities for stranded cost.

Mitigation

If stranded costs are going to be recoverable by utilities, the state should ensure that each utility takes all reasonable steps to mitigate its own costs so as to minimize the cost to customers. For example, the utility should do its best to sell power at its highest possible value so as to mitigate the customer's stranded cost liability. A problem with stranded cost recovery may be that assuring compensation may reduce utilities' incentive to maximize the value of their assets. One option to ensure efficient mitigation would be to not allow full recovery of stranded costs.

In addition, stranded cost recovery may be limited to costs incurred before a certain date, such as the point at which the utility had reasonable notice that competition was likely to occur.

Linking and Conditioning

Some states have also required linking or conditioning collectives as part of stranded cost recovery. Essentially, this means that utilities must meet certain requirements in order to collect stranded costs from the customers. California will allow utilities that have opened their territories to competition to collect their CTC; those companies that do not open up will not be allowed to collect the charges. Another condition of stranded cost recovery may be the requirement of divestiture. Utilities would have to separate the function of generation from their

transmission and distribution facilities

Securitization

Some states are using securitization, or state bonding, in an attempt to reduce the cost of stranded cost recovery to consumers. Under this type of plan, the state would sell bonds in the amount of estimated stranded costs. The bonds are secured by the promised future payment stream generated by a CTC. Utilities will receive the proceeds of the bond sale as lump sum compensation for stranded costs, while customers will pay those costs over time. Recovery costs may be reduced to customers because they are financing the payments using a reduced cost of capital based on the lower risk represented by a guaranteed, state-required future revenue stream. In addition, securitization may provide for immediate rate reductions for consumers because the use of bonds permits the utility to lengthen the time period over which consumers pay for stranded costs.

Reconciliation and Re-evaluation of Projected Costs

Periodic reconciliations can be scheduled to re-evaluate stranded costs projections and adjust recovery as needed. Uncertain market prices and load growth may require costs to be readjusted to reflect the actual experience of the market. Massachusetts has scheduled reconciliations after 2, 5, and 10 years. In addition, some states have laws which limit the length of time over which stranded costs may be recovered; for example, in California all stranded costs must be recovered within five years.

Process for Measuring and Recovering Stranded Costs

An example from the state of Vermont for measuring and recovering stranded costs is as follows:

Estimation and Mitigation Proceedings:	Evaluation of stranded costs begins with a market valuation of generation-related assets. Stranded costs are then examined for their mitigation potential.
Adjusting Stranded Cost Estimates:	At this point, the tax impacts of various mitigation efforts are taken into account.
Stranded Cost Reconciliation Proceeding:	A mixture of calculation methods will be considered for the final valuation. Once a final determination of stranded costs has been made, utilities will have the opportunity for substantial or full recovery of the final value.

Work Group Discussion

The complex issue of stranded costs was discussed by the work group, but not to a great degree, in part because stranded costs are not expected to be significant in Minnesota[10]. Furthermore, the complication of stranded cost recovery for cooperatives and municiplats, where ratepayers and shareholders ar the same, prevents a universal solution for sharing of stranded costs. With the presumption that restructuring would result in stranded costs in Minnesota, which has yet to be demonstrated, the group defined the issue with two questions:

- how should stranded costs be measured?
- who will pay for stranded costs?

Definitions of stranded costs

A definition of stranded costs is necessary to begin the discussion, and several possibilities were offered, including the following:

- costs that a utility has been required to incur due to their obligation to serve, that the utility will not be able to recover in a competitive market
- the difference between the revenue stream in a competitive market versus the revenue stream under regulation

Some stakeholders believe that stranded costs will not be an issue in Minnesota, no matter how the term is defined. If a competitive industry does not bring significantly lower prices to Minnesota, or if "stranded capacity" can be resold competitively to higher-cost regions, costs will not be stranded. Utilities and their investors have been forewarned for at least five years about the changing atmosphere of the industry. Some utilities may have been compensated for this risk by reflecting higher capital costs in their rates. They may have already recovered all future stranded costs by charging these higher rates.

Calculation Methods

The measurement of stranded costs can be viewed from many angles. Should they be calculated before or after the fact? Factors involved in the calculations include the market price, the return to investors from competitive market prices, and revenues. One difficulty is that these factors are not fixed and knowable today. This is a dynamic process; a forward-looking net approach may be necessary in order to compensate for changes in the market. The focus may have to be on the entire return on investment over time, and not measurement of costs on an asset-by-asset approach.

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[10]Some studies on restructuring have even suggested that competitive prices in Minnesota may be higher than regulated prices, resulting not in stranded costs but in excess profits to utilities (Power Markets in the U.S., Resource Data International, 1996)

Recovery Methods

Recovery of stranded costs will be different for consumer-owned utilities, such as cooperatives and munis, compared to IOU's. Consumer-owned utilities do not have shareholders to pay for any of their stranded costs. Instead, consumers as owners (or as taxpayers) end up paying. The work group focused on IOU's in their discussion of stranded cost recovery.

An important question is determining how the burden of stranded costs should be shared. How much responsibility do shareholders have to pay for the costs? Some parties are worried that an unfair portion of the stranded costs will be shifted onto the rates of the consumers, and these consumers will be unduly burdened and will fail to see the benefits of competition. Some stakeholders believe that utilities should be held accountable for past investments that they have made; enough research should have been conducted to determine if a new plant would be a prudent investment. After all, a main goal of competition is to remove inefficient firms from the industry. On the other hand, if the utility is required to pay for most or all of the stranded costs, the industry may lose competitors. This "sharing balance" must somehow be determined.

Another option for stranded cost recovery would be to charge an exit fee. This would apply to customers purchasing electric service from suppliers outside the franchised service territory. FERC has recommended this as a recovery mechanism for wholesale stranded costs. Supporters of exit fees argue that charging remaining customers for the stranded costs created by a few departing customers could subsidize both the departing customers and their new "competitive suppliers," and leave remaining customers paying a higher price as a result. Critics of this mechanism argue that exit fees delay the receipt of the benefits of competition and may serve to remove actual choice and competition for most customers.

The work group agreed that the issues surrounding stranded costs are complicated and at this point unresolved. In order to fully investigate these issues, the work group decided that a subcommittee to do further research is necessary. As of yet, a subcommittee has not met to discuss this issue. Hopefully, it will do so in the future.

Other issues related to stranded costs

Some of the issues raised but not fully addressed by the work group include:

- how do you mitigate stranded costs? Have utilities already been mitigating them for several years?
- how should divestiture be handled?
- what will happen to long-term customer contracts?
- will utilities be shifting costs from the competitive side to the regulated business?
- how do we treat stranded costs if they are negative? What implications would this have for consumer prices in general?

Pilot Programs and Phase-ins

Introduction

Around the nation many preparations are being made for the possibility of a retail competitive electricity industry. These activities include:

- general studies and investigations,
- utility reorganizations and mergers,
- legislation and Commission orders mandating choice,
- restructuring of the NERC regions,
- utility tariff changes and renegotiation of customer contracts, and
- pilot programs.

There are a number of states or individual utilities which have conducted pilot programs or which hope to begin pilot programs in the near future. These include:

1996

Washington Water Power
(Idaho and Washington)
Central Illinois Light Co.
Massachusetts Electric
New England Electric
Consumers Power
New Hampshire Utilities
Orange & Rockland

1997

GPU Energy
(New Jersey and Pennsylvania)
Portland General Electric
City of Pittsburgh
PA Power & Light
Clark Public Utilities
(Washington)

Examples from Other States

New Hampshire

New Hampshire's pilot program began in May of 1996 and will last for two years. It had a number of objectives for the program, including:

- to determine the level of interest among customers and suppliers for retail competitive services
- to determine whether all customer classes can benefit from competition, to estimate financial impacts on utilities, and
- to develop unbundled rates

All classes of customers are eligible for participation, but only 3% of each franchised electric utility's existing peak load will be open to competition. Residential, commercial, and industrial customers will be eligible for participation in proportion to the relative load of each of those

classes for each utility. Eligible customers were randomly selected from those customers who indicated an interest in participating in the pilot.

In order to facilitate residential and small commercial customer participation, the New Hampshire Public Utilities Commission has provided for the aggregation of customer loads. Customers may join together as part of a Geographic Area of Choice. Each customer or aggregator is responsible for arrangements with a competing supplier.

Stranded cost recovery poses as New Hampshire's biggest issue. In order to move the pilot forward, the Commission determined that stranded costs will initially be split fifty-fifty between utility investors and participating customers.

Pennsylvania

A two-stage implementation process to move toward full retail competition has been proposed in Pennsylvania, beginning in July 1996 and ending in January 2005. The stages include a transition period and a phase-in period. Their attention will be directed to the following goals:

- Scheduling corporate structural changes
- Developing a rate plan and unbundling tariffs
- Developing a stranded costs assessment
- Planning for the move from a regulated monopoly to a retail market
- Planning and funding customer protection programs
- Developing a performance based ratemaking plan
- Developing a competitive retail pilot program

The first stage, the transition period, will be used to functionally separate the industry, establish an effective and reliable wholesale bulk power market, introduce retail pilot programs, and monitor and evaluate market performance.

Pilot programs will begin in 1997 and will last a minimum of one year. The Pennsylvania Commission has recommended that all utilities conduct pilots. All customer classes must be included in the program, and the utility may charge customers to recover stranded costs during the time of the pilot. The pilot will include 5% of the companies' peak load for each customer class. During this time, utilities should unbundle their tariffs and separate their generation business from transmission and distribution functions.

The second stage, the phase-in period, will begin at the conclusion of the transition period after milestone reviews have been completed. The phase-in should provide an opportunity for all customer classes to access alternative generation suppliers. The phase-in will begin with 10% of each utility's peak load the first year, and move up to 25% in the second, and 50% in the third. Competition will be available to all customers by the fourth year.

Work Group Discussion

The work group was uncertain that a pilot program in Minnesota would provide any benefits or insights to the transition to a competitive market. Some members pointed out that a lesson could be learned from the gas industry; it is one thing to say an industry is open to competition, but the problem is actually accomplishing fair competition. Market barriers may end up being fairly hard to remove. A pilot program may not provide any insight into how to remove market barriers. However, if retail competition is to occur, the group suggested that a phase-in would be necessary to permit the state to monitor and correct any problems which may occur in the transition.

Benefits of Pilot Programs

A few possible benefits have been identified from pilot programs. If a distribution company were to conduct a pilot, it would probably be able to work out details associated with unbundling rates, billing and metering. A voluntary pilot could also be held to learn other lessons related to generation, billing and accounting, and balance in control areas. If Minnesota were to pursue a pilot program, the group felt it would make sense to look at areas which were not already being explored in other states. The ability to achieve large-scale aggregation of residential or low income customers is one area where there may be more to learn.

Problems with Pilot Programs

The work group identified numerous problems associated with pilots. The consensus was that these programs do not represent competition. They may be too small and unrealistic because they do not involve enough customers. Pilots can easily offer a small, cheap power package to eligible customers; however, this creates the expectation of low prices for all customers, which may not be available when full competition occurs. In addition, pilot programs frequently produce a large number of offers which are "loss leaders" — electricity priced below market in order to attract customers and suggest that prices will be reduced under full competition. Furthermore, the issues of stranded costs and universal service are not addressed in pilot programs. Renegotiations with large customers usually are not included. In general, a pilot program in Minnesota at this point in time is predicted to hold little demonstration value of the actual details of a competitive industry.

Phase-ins

While much can be learned by carefully observing the results in other states, there is probably no way to learn how a competitive industry works without actually implementing it here in Minnesota. If the legislature determines that the state is likely to benefit by the introduction of retail competition, an incremental phase-in program slow enough to gradually solve problems could provide great benefits. The lessons learned from the phase-in could be incorporated over time. Phase-ins may be preferred because they allow for more comprehensive and longer-range planning than does a pilot program.

Although the group believed that a phase-in would be preferable to a pilot program, it noted that a phase-in still requires careful attention to detail. Phase-ins which are set up by customer-class (e.g., large customers first), may be unfair. Other options would be to start with all new load customers in order to gradually incorporate increasing numbers of customers, or to phase-in geographic areas of the state or percentages of each customer class.

Further Questions

1. Would a pilot program be needed in order to functionally unbundle the industry?
2. How would costs of transmission and distribution be backed-out in a pilot?

Conclusion

The discussions held by the work group touched on a number of the issues which will be important in considering a move to retail competition, and broadened our understanding of the issues and of the positions of various stakeholders. The work group remained divided on virtually all of the issues it discussed; no consensus or recommendations were reached.

The group did recognize that restructuring the industry will require a great deal of policy consideration as well as technical work. It expressed an interest in looking further at the following topics: resource planning and acquisition of generating resources, market power issues, and the definition and calculation of stranded costs.

Appendices

Appendix A
Work Group Members

Name	Organization
Bernadeen Brutlag *John Erickson*	OtterTail Power
Steve Betzler *Dave McMillan*	Minnesota Power
Judy Cook *Mary Hirschboeck*	MN Retail Merchants Assn.
John Dunlop	American Wind Energy Assn.
Betsy Engelking Susan Mackenzie Bret Eknes John Lindell Mike Michaud	Minnesota PUC
Bill Grant	Izaak Walton League
Tom Grue *Jim Schultz*	Minnesota Energy Consumers
John Hynes	MN EQB
John Jaffray	JPower
Jim Johnson	Koch Refining
Jack Kegel *Steve Downer*	MMUA
Tom Koehler	IBEW
Al Krug	Dept. of Public Service
Rick Lancaster *Bob Ambrose*	Cooperative Power
Mark Laub *Greg Oxley*	UPA

Name	Organization
Robert Lee *Joanne Turner*	Large Power Intervenors
Bill Leeper	Minnesota Senior Federation
David Lingo *Kandace Olsen*	Mid-Continent Area Power Pool
Pam Marshall *Rob Hovland*	Energy CENTS
Michael Noble *J. Drake Hamilton*	ME3
Frank Pazlar	Minnesota Utility Investors
Matt Schuerger *Sharon Lundberg*	District Energy St. Paul
Dave Sparby *Kay Gehring*	NSP
Sheldon Strom	Center for Energy and Environment
Lee Sundberg *Mark Glaess*	MREA
Eric Swanson *Steve Corneli*	Office of the Attorney General
Penny Tvrdik *Steve Jurek*	UtiliCorp United
Frank Whitney *Gerry Steffens*	SMMPA

Appendix B

MNPUC Restructuring Principles and Action Steps

(Adopted by Commission Order on May 14, 1996)

1. *A deliberate, step-wise approach to restructuring.* It is possible that increased competition in the electric industry, especially in the generation sector, will result in lower costs, higher efficiency and more innovative service offerings for electricity consumers. However, in an ill-defined move to a retail competitive market for electricity, the benefits of competition could be selectively conferred on a small number of participants, to the detriment of other participants and the public interest. Therefore, the state of Minnesota should only proceed to implement retail competition for electric generation when essential elements to ensure the fairness of a competitive market and to protect the public interest are developed and in place. These elements must begin with the achievement of an open transmission system and the establishment of a robust wholesale competitive market for electric energy and capacity.

2. *The benefits of competition should be realized by all customer classes.* A restructured industry should not be organized in such a way that a select group of customers benefits by shifting a portion of their legitimate costs of service onto other customers. Services which can be provided most efficiently through a competitive market should be subject to competition; services which can be provided most efficiently by a monopoly provider should continue to be regulated.

3. *Competitively neutral laws and regulation.* The industry should be governed by competitively neutral laws and regulations for all providers, regardless of structure or size, and all consumers, regardless of class or economic status, of electric energy and related services within the state. Programs and services which are considered essential components of electric service in this state must apply to all providers and/or consumers, with no opportunity for bypass.

4. *Equitable and efficient unbundling of electric rates and services.* Prices for each component must be set to ensure no cross-subsidy between competitive and monopoly services. In addition to unbundling rates, the generation operation should be at least functionally unbundled from other utility operations. Unbundling should serve the purpose of determining whether alternative providers contribute to greater economic efficiency.

5. *Obligation to provide distribution service.* The distribution system is and should remain a regulated monopoly service. Distributors should maintain exclusive service areas and have the obligation to provide distribution service to all customers in the distribution service area. This service would be subject to reasonable service extension policies, including customer contributions for certain extensions.

6. *Universal energy service.* Universal service at reasonable rates should be a primary goal of the state. Universal energy service should be supported through a non-bypassable mechanism.

7. *Attention to the needs of residential consumers.* Electric service is a basic necessity. Any transition to a retail competitive market must address the needs of residential and small business consumers, and in particular, low-income consumers. There must exist fair and non-discriminatory mechanisms for all consumers to participate in a competitive market, without undue complexity in options or procedures. In situations where a competitive market cannot operate, residential consumers must have access to reliable, reasonably-priced service.

8. *Public participation.* There should be an opportunity for extensive public input into the ultimate structure of the industry. In addition, the public must be fully educated as to the impact of industry restructuring on electricity service.

9. *Performance Standards.* The electric system must continue to be operated in a manner which is reliable and which assures the protection of public health and safety. There must exist quantifiable performance standards for safety, reliability, and service quality in order to set requirements for future industry safety and reliability and to measure any impacts of competition on safety, reliability, and service quality

10. *Fair and immediate treatment of transition costs.* The recovery of net, unmitigatable transition costs ("stranded costs" and other costs related to a move to a new market structure) should be shared by all stakeholders, including investors and customers. Proposals to recover stranded investment must include consideration of deferred taxes and other ratepayer contributions currently on the books of the utility

11. *Environmental Improvement.* Any restructuring of the electric industry should include a plan to improve the environmental quality of the state. This plan should address both the improvement or retirement of generating plants with environmental liabilities, and the provision of clean new resources to serve the citizens of the state. Generation service providers should be held accountable for the environmental consequences of their actions.

12. *State participation in transmission planning.* The state's interest and participation in transmission planning issues, particularly as they impact the environment as well as cost and reliability of service to the state's electric consumers, must be maintained.

13. *Diverse portfolio of energy resources.* It is in the long-term interests of the electricity consumers in the state to ensure that their needs are being met through a diversified portfolio of energy resources, so as to minimize the risk of heavy dependence on a single fuel or technology. To that end, the state should support and promote participation of cost-effective demand-side management, renewable energy and other diverse resources where market barriers preclude their effective participation. In addition, support for the

continued research and development of electric generation and delivery technologies must be assured.

14. *A competitive state economy.* A restructured industry should promote prosperity of the state's economy, including the fostering of cost-effective in-state energy resources.

15. *Realigned regulation.* In a fully restructured industry, regulatory and administrative processes should be realigned to meet the regulatory needs of the new industry structure, while maintaining the appropriate level of oversight to ensure effective protection of the public interest. However, it should be recognized that the transition period will require sufficient regulatory resources to ensure the development of a fair market.

16. *Recognize and accommodate the interests of local government.* As any electric industry restructuring proceeds, the interests of cities which are served by franchised electric utilities should be recognized and accommodated.

Action Steps
(Adopted by Commission Order on May 14, 1996)

1. *The Commission should continue to participate in and monitor the FERC rulemaking and other actions relating to open access transmission, and the MAPP efforts to form a regional transmission group.* The FERC actions are essential to the creation of a robust wholesale generation market. The decisions made by the FERC in its Open Access and Stranded Cost NOPRs may also alter the lines of authority between the FERC and the state on some matters impacting restructuring. In addition, the formation of a MAPP RTG will present both issues and opportunities for the state as it addresses restructuring issues. The Commission should participate in these forums to the maximum extent possible, both to maintain an awareness of the direction of these proceedings and to impact their outcome.

2. *The Commission should establish a Wholesale Competition Working Group to examine methods to bring robust wholesale competition to Minnesota.* The working group should include representatives of all stakeholder interests and should discuss the relative merits of various alternatives, for example, the use of a power pool, a mandatory bidding process, or disaggregation of generation or transmission, as a means of developing the wholesale generation market in Minnesota.

3. *The Commission should examine the potential for increasing the flexibility of rate-regulated utilities to negotiate rates and terms of service for electric customers.* Utilities subject to Commission regulation are currently unable to respond quickly to customer needs for innovative service agreements. The Commission should explore its authority to implement mechanisms which would provide for increased flexibility while maintaining assurances that the overall public interest is not compromised.

4. *The Commission should begin an examination of appropriate standards for safety, reliability and service quality.* This work would begin in the Competition Work Group, which could make recommendations to the Commission on appropriate standards and possible methods of implementing those standards.

5. *The Commission should investigate the appropriate methods of unbundling electric rates and services.* As an initial step, the Commission will ask the work group to explore possible methods of unbundling, their benefits and costs, and their practicality.

6. *The Commission should develop a public information package on restructuring and a program for disseminating information to the public.* The Commission should work with interested parties to ensure a balanced, objective presentation of the issue to the public.

7. *The Commission should examine Chapter 216B and other Minnesota Statutes to determine where current law establishes unequal requirements for various electric power and electric service providers which would undermine the development of a fair competitive market.*

8. *After, or as a part of, the examination of wholesale competition issues, the Commission could examine and develop methods the state could use to gain insight into the issues and challenges associated with retail competition.* This step would be undertaken by the competition work group after it makes its report on wholesale competition.

Appendix C
Report on Public Participation

The following Report reviews the Minnesota Public Utilities Commission's (the Commission) efforts to inform and involve the public on the issue of electric utility industry restructuring, through public hearings held around the state and other outreach efforts. The Report summarizes the written and oral comments on restructuring that have been received by the Commission. The public comment period was November 1996 through January 1997. Comments were received by the Commission at 10 public hearings held around the state, via the telephone and by mail.

I. Background

In the Commission's May 14, 1996, *Order Adopting Principles and Action Steps as Guidelines for the Competition Working Group*, the Commission created a Competition Work Group and adopted 16 Principles and 8 Action Steps to guide the investigation into structural and regulatory issues in the electric utility industry. The Work Group included stakeholders from all facets of the electric utility industry. Among the Principles and Action Steps is the Commission's position on Public Participation. The Commission's Principle #8, **Public Participation**, reads as follows:

> *Public Participation.* There should be an opportunity for extensive public input into the ultimate structure of the industry. In addition, the public must be fully educated as to the impact of industry restructuring on electricity service.

In an effort to achieve the goal of public participation, staff of the Commission established a subcommittee of the Competition Work Group. The Public Information and Participation Subcommittee (PIPSUB) was made up of representatives of municipal, cooperative, and investor-owned utilities, consumer and environmental groups, as well as state agencies. An analyst from the Commission's Energy Unit oversaw the activities of the PIPSUB, and the Manager of the Commission's Consumer Affairs Unit actively participated in the project. The PIPSUB met several times from June through August 1996 to develop informational materials and develop a plan of action to achieve the Commission's goal as outlined in Principle #8.

The PIPSUB developed a fact sheet briefly describing the historical development of the electric utility industry. It also determined that the best way to provide for public input would be to hold public hearings around the state. Since holding public hearings in every major city or locale in Minnesota would be prohibitively time consuming and expensive, the PIPSUB developed a plan to hold a public hearing in each of the State's Congressional Districts.

However, upon review of the map of Minnesota's Congressional Districts it became clear that two of the state's eight Congressional Districts (#'s 7 and 8) were simply too large to hold a hearing in only one location and still allow for a reasonable opportunity for the public to participate . Therefore, the PIPSUB developed an outreach strategy which included holding

public hearings at ten locations (two each in Districts 7 and 8) around the state. In order to provide additional flexibility for the public, the hearings were scheduled, whenever possible, during both the afternoon and evening. Facilities in the urban areas of Stillwater, Plymouth, and Minneapolis were not available during the afternoon.

Much of the remaining effort of the PIPSUB was spent creating a brochure on behalf of the Commission. This brochure was intended to achieve three goals:

- to provide initial information on potential changes in the electric industry;
- to provide for a method to receive public input (Through a postage paid comment card attached to the brochure); and,
- to announce the time and location of the public hearings.

Upon completion of the pamphlet, Work Group members were asked to assist in the distribution of the brochures by disseminating them to their members and customers, and to the general public. Work Group members were also asked, on a voluntary basis, to assist in advertising the times and locations of the public hearings. Approximately 12,700 brochures were distributed by Work Group members, interested persons, or by Commission staff at public hearings.

The public hearings on potential changes in the electric industry were well attended. The Hearings were held in the following locations: Bemidji, Hinckley, Duluth, Rochester, Stillwater, Marshall, Alexandria, Plymouth, Minneapolis, and Roseville. The hearings were overseen by several Administrative Law Judges from the State's Office of Administrative Hearings (OAH)[11]. Attendance at the hearings is estimated at 705 people, of which 181 testified. The largest hearing was the afternoon session in Duluth with an estimated 100 members of the public present. The hearings in Stillwater and Minneapolis drew the fewest with 13 members of the public present.[12]

II. Executive Summary

By and large, the comments received by the Commission expressed concerns with, or opposition to, the deregulation of the electric utility industry. However, there were also several proponents of both change and the introduction of competition. While the public hearings held by the Commission were well attended in comparison to the public hearings of general rate increase requests, the advertising for the hearings was minimal due to budget constraints, and many of the

[11] Regional or local Administrative Law Judges were used to conduct the hearings in order to reduce their expense.

[12] It was noted at a few of the hearings that very little notice of the meetings was provided.

people attending the hearings were what could be considered "industry insiders"[13].

The Commission received hundreds of comments from members of the public. The comments collected were diverse and suggested a varied level of knowledge of what change in the electric utility industry may entail. Throughout the comments, however, three major concerns or themes can be identified:

- The public is mainly concerned with the potential increase in the cost of electricity;
- The public is concerned that the quality of electric service will decline and there will be more frequent service interruptions of longer duration;
- the public is concerned that the quality of the environment will deteriorate with the advent of competition.

In addition to these themes, several members of the public expressed concern that the development of renewable forms of energy production, as well as utility efforts to promote energy efficiency and conservation, would be slowed under competition. Some members of the public also argued that low-income and rural customers would suffer disproportionately, particularly if there are no programs to provide support. There was also a concern that if customers were provided administrative protections under a restructured electric utility industry there would be no oversight or enforcement to insure fair treatment.

There were a significant number of comments expressing concern for the quality of the environment. Several people suggested that once the electric utility industry is deregulated and competition is introduced, some utility companies will either start-up or increase the use of some of their older coal-fired generating facilities. It was suggested that in an effort to produce cheaper electricity and to sell as much power as possible, utilities will use these older facilities which are not required to meet the air quality standards of more modern generating facilities. This will result in more pollution, particularly emissions of mercury, NO_x, SO_2, CO_2 and particulates. Several persons suggested that any restructuring should preclude utilities from using their older plants, or requiring such facilities to meet the same emissions standards as new facilities.

All types of utilities in Minnesota, i.e. investor-owned, municipal and rural electric cooperatives, have played an important role in the historical development, as well as the current operations, of the electric utility industry. As expressed in the public comments, each type of utility has meaningful concerns with the changes being considered. In many cases the concerns of the different types of utilities are similar. However some of their concerns differ and appear to be specifically related to the type, size and location of the utility. Chief among utility concerns is whether they will be a competitive provider of electric service in a restructured industry. For

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[13] Industry insiders is this context is defined as utility employees, managers, board members and utility shareholders, as well as representatives of environmental organizations and advocates on behalf of low-income citizens. They spoke on behalf of an organized interest.

example, investor-owned utilities have concerns with property taxes on generation assets, while cooperatives are concerned that their customer per mile of distribution line ratio will make them uncompetitive. Each type of utility is also concerned that a level playing field, in and between the various types of electricity suppliers, be developed. Interestingly, it appears that each type of utility believes the other to be at an advantage.

While all utilities are concerned with the potential for stranded costs, their differences seem to be related to how they anticipate the stranded costs will be created. Rate regulated investor-owned utilities, along with their shareholders, are most concerned with the integrity of their investments if a generation asset becomes uncompetitive in a restructured industry and the recovery of costs associated with that investment are no longer assured.

Municipal utilities and cooperatives have a similar, albeit somewhat different, emphasis to their stranded cost concern. The existing customer profile for municipal and cooperative utilities, especially the smaller entities, provides them with an acute concern with competition. Most of these utilities do not self-generate, but are members of generation and transmission associations or purchase their power on the market. Generally, these utilities have only a few large customers which cause a significant portion of the utility's costs. The large customer's demand for electricity allows the utility to provide services and charge lower rates to other customers than they would otherwise be able to.[14] Many of these utilities have made specific investments in equipment, facilities and/or long-term power purchases to be able to provide service to their large customer. If the large customer leaves the small municipal or cooperative distribution system, the utility still needs to recover its investment. Yet it has few customers from which it can recover these costs.[15]

Many of the comments received suggested that it could be devastating if these customers left the municipal or cooperative system. If departing customers are not somehow held responsible for costs incurred on their behalf, the rates to remaining customers would have to increase significantly in order to recover the investment made to provide service to the departing customer.

Other concerns expressed at the hearings include several recommendations to the Commission not to forget the valuable contribution renewable energy can provide to our energy future, and that it is important to insure that renewable energy development continues in a restructured industry. Some suggested that because renewable energy technologies, particularly wind energy,

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[14] This is not necessarily due to "subsidization" of small customers by large customers, but because the size and load factors of the large customers permit the utility to purchase power for all customers on favorable terms.

[15] Investor-owned utilities have this same concern, however they generally have several large power customers on their system, in addition to the customers from which to recover potential increased costs.

have high start-up costs, they may not receive favorable attention from utilities or other entities when they consider investments in additional generation. Some members of the commenting public suggested that the state should require a renewable energy portfolio for all utilities to ensure the development of alternative technologies.

In addition, several members of the public indicated their concern for the impact of restructuring on low-income persons. It was suggested that the existing obligation to serve, as well as cold weather shut-off protections, must be maintained. There is a concern that low-income persons may be viewed as unattractive customers and may have problems finding a service provider, particularly if electric suppliers are able to review a customer's consumer credit histories. Finally, there was concern expressed that due to the perceived risk of low-income customers only high cost power will be made available to them, further compounding their inability to pay problem.

III. Summary of Public Comments

Because of their similarity, the comments received at the public hearings and those received by phone and mail have been combined into one section.

1. **Residential Customers**

A. Cost Concerns

The cost issue appears to be the greatest concern. Urban and rural residential customers are concerned that deregulation will lead to higher rates for them, while commercial and large power customers will enjoy lower rates. Several people urged the Commission not to turn its back on rural customers who, because they reside in sparsely populated areas, may not necessarily be economically attractive to producers. Service to residential customers, particularly rural customers, needs to be maintained at affordable rates.

Several commenters confirmed that they were happy with the present system and believe the current rates for their electric service are reasonable. They do not understand why the Commission is investigating deregulation when they believe the existing system works so well. It was often stated "Why are you (the Commission) trying to fix what is not broken?" Commenters questioned whether deregulation is being considered because other states are doing the same. They advised the Commission to approach any changes with caution, and to ensure that all classes of customers are protected, and fairly treated.

The following comments are representative of the statements made:

- competition will cause the little guy such as the residential and small business customer to pay higher rates, while the larger companies will enjoy lower rates;

- residential customers will be asked to pay for utility stranded investment;
- competition will result in driving prices up for farmers, residential, small businesses, and rural customers. These customers will experience higher rates for their electricity;
- hidden costs will be passed on to small users;
- utility companies will make huge profits while small businesses will be asked to subsidize the larger users;
- competition will encourage intervention by power companies from outside the state, and will result in increased costs to farmers and small residential customers;
- in the end, the large power companies and large consumers will enjoy higher profits and lower prices at the expense of the small consumers, farmers, and rural area consumers;
- consumers in the rural area will have to pay higher rates for electricity than their urban counterparts.

B. Environmental Concerns

Residential customers expressed concern regarding the quality of the environment if the utility industry were deregulated. The comments suggested that deregulation will create competitive pressures on utility companies to lower prices. Some of these customers believe that utility companies will run old high-polluting power plants to create cheap energy at the expense of damaging the environment. This will increase environmental pollution with higher emissions of mercury, sulfur dioxide, nitrogen oxides, and volatile organic compounds.

Some of the comments suggested that we need to "protect our environment" by constructing less polluting new electric generation sources aimed at reducing pollution. In addition, some members of the public expressed concern that renewable sources of energy will be forgotten in the coming competitive environment. They further suggested that the Commission should be aware of the need to explore alternative sources of energy such as solar and wind power. The comments stressed that if the Commission does not address this concern, the public may suffer the consequences.

Several of the comments also suggested the following safeguards to protect the environment:

- cap pollution levels and require older coal-fired power plants to meet the pollution control standards for new facilities
- create more stringent pollution control standards
- develop a plan to protect the environment and ensure rapid development of clean

renewable energy resources

- promote energy efficiency

C. Service Quality Concerns

The third major concern of residential customers is the quality of electric service they will receive when utility companies are deregulated. Competition will increase the compel utilities to cut costs, and the quality of service may suffer. The comments suggest that utilities will shift their attention to large users and provide them with better service for fear of losing them. By the same token residential customers will be ignored and will be provided with poor service. Some of the comments expressed concern that it will take twice as long to restore service and attend to the needs of the small customer when there is a power outage. There is an assumption that deregulation will create more chaos in the long run.

2. **Small Businesses**

A. Cost Concerns

Several representatives of small businesses expressed concern for higher rates. They questioned what effect deregulation would have on small businesses particularly in rural areas. Many suggested that there would be higher rates because of the "cherry picking"of larger commercial and industrial customers by other energy providers. The loss of these customers, will force municipal and cooperative utilities to raise the rates of its remaining customers. They asked the Commission not to destroy what they have now. If deregulation must occur, all customer classes should benefit. Stranded costs should not fall unfairly on individual and/or small business customers.

Some small business customers argued that the Commission should not accept that deregulation will bring about lower electric rates; it will not happen. Some suggested that deregulation is an open attack on small businesses and residential customers. Deregulation may cause this group of consumers to suffer a rate increase while larger users pay lower rates.

B. Environmental Concerns

Several small businesses expressed concern for the quality of the environment. The comments suggested that deregulation will cause power companies to use old high-polluting power plants in an attempt to produce cheap energy to increase their profits. In addition, if the environment is not protected now, we will all pay the price. In order to prevent this from happening, we should ensure delivery of safe, reliable, clean and sustainable energy to the citizens of Minnesota.

The concern for renewable energy among small businesses was significant. Several of the comments suggested that it is important that deregulation not derail the renewable energy

industry, and that a level playing field between renewable and non-renewable energy sources be developed. These customers asked that renewable energy and energy efficiency technologies not be cast aside. The investment in energy efficiency allows for the development of new energy-saving technologies. Their comments on demand side management (DSM) suggested that DSM programs encourage business to invest in energy efficiency and should be permanently established as a part of the state's energy policy.

C. Concern for Larger Monopolies

Several small businesses indicated their concern that deregulation would initially create competition, but would eventually, through mergers and acquisitions, result in producing a more powerful form of monopoly. In addition to that, they commented that large and powerful utilities will take over smaller ones and continue to exercise their monopolistic power just like in the long distance telephone industry. They commented that unless multiple distributors occupy a given service territory there will remain a monopoly over a given set of customers. They are concerned that the central part of the electric power industry will remain a monopoly.

D. Proponents of Competition

A few small businesses were in favor of retail competition. They thought that it would decrease rates from $0.07 to $0.03/kWh for everyone, and would create a savings of $500 million per year. They justified their conviction by stating that the present system forces customers to pay the costs of unreasonable investments. Current regulation subsidizes generating facilities that would be uncompetitive under deregulation. According to these customers, retail competition could provide for more efficient plants that would be better for the environment, and may ultimately promote the development of renewable sources of energy.

3. Municipal & Cooperative Utilities

A. Wholesale vs. Retail Competition

Several of the municipal and cooperative utility representatives requested that the Commission support wholesale competition before retail competition. Several small cooperatives and municipal utilities believe that they would be unable to compete with larger utilities for the electric loads of commercial businesses, which are needed to maintain reasonable rates for smaller consumers. If these customers were lost, the utilities would lose the revenues associated with them and would have to increase rates significantly to remaining customers. In light of this, it was suggested that the state should wait and see what happens to the markets on the wholesale level, and the Commission should focus on reliability for municipal and cooperative customers to make sure they do not lose their large customers to larger utility companies. Many municipals and cooperatives have concluded that residential customers and the small businesses would be the losers, and large industrial users the winners.

In a similar vein, commenters indicated that they support robust wholesale competition, but can only accept retail competition if it benefits all customers. Their comments suggested that wholesale wheeling has the potential to reduce costs for all customers, while retail wheeling does not. Furthermore retail wheeling may produce benefits for a few very large customers, but is likely to increase costs for residential customers and most small businesses. Big customers are able to cut deals. Large energy-intensive industrial companies and high energy cost states are spearheading the effort for retail wheeling. Large utility companies which have transmission access to high-cost areas such as Chicago are also supporting competition.

In some comments, it was suggested that one way the state could jump-start a robust wholesale electricity market would be to allow local governments to municipalize the electric service in their communities and shop for wholesale electricity. Municipalization is one mechanism short of full retail competition which could be used to place competitive pressure on the costs of generation from rate-based facilities.

B. Stranded Costs

Several municipal and cooperative utility representatives suggested that the issue of stranded costs needs to be addressed. They suggested that those who would benefit from competition should pay for stranded costs. Some of the comments suggested that only some customers would end up paying stranded costs. These representatives are concerned with the "cherry-picking" of their large customers. Concern was also expressed that the electric industry would become like the telephone industry with evening calls soliciting customers, and high marketing costs.

C. Service Quality Concerns

Municipal and cooperative utilities suggested that quality of service and reliability are both very important to customers. Several comments urged the Commission to give special consideration to service quality issues while deregulating. They asserted that larger consumers and communities would benefit while small users and rural areas would be the losers. Small customers, especially in rural areas believe that they would be left out because they fall into the category of "unattractive" customers and therefore, it is unlikely that potential suppliers would rush to serve them. They urged decision makers to be sure reliability is protected to avoid chaos in the industry. Several speakers suggested that if deregulation occurs and allows for individual customer choice, local utility companies may try to lower their costs of doing business by reducing the number of maintenance workers. This could lead to unreliable and low-quality service. In the case of a power outage, small customers might have to wait for several hours or days before they can get help.

D. Mergers and Monopoly Concerns

Mergers and monopoly seem to be a concern of some of the commentators. There is a fear that deregulation will allow the larger utilities to merge and become so big that they would control the market price. Small utilities would be forced out of business, giving way to even larger

monopolies. Since the market would be dominated by a handful utilities, Minnesota's low cost energy would be exported to high cost regions (the Chicago area, and the East and West coasts) and customers in Minnesota would have to purchase from sources outside the state at a higher rate.

E. Unanswered questions:

Representatives from some of the smaller municipal and cooperative utilities expressed concern that they lacked revenue to advertise, and for the marketing of new customers, making them less competitive. Several representatives of municipal and cooperative utilities asked questions regarding the implementation of competition and deregulation. For example:

- Who would serve unwanted customers?
- Would each electric service provider be required to take a percentage of undesirable customers along with the choice customers?
- Who would be able to determine if a customer is eligible for shut-off protection under the cold weather rule?
- Who would protect the customers' interest?

They believe these questions should be answered before the state proceeds with restructuring the electric utility industry.

4. Commercial customers

A. Support for Competition

Those who support deregulation asserted that competition is generally good for everyone in the long run, and that consumer choice usually leads to lower prices. However, the need to guarantee the availability of electricity, and to continue development of renewable energy is very important. It was suggested that the Commission develop energy conservation measures and encourage alternative sources of power that are cost effective. The above comments were provided so that the Commission would keep those ideas in mind while considering deregulation.

B. Cost Concerns

Commercial consumers commented that power companies will attempt to recover stranded costs from customers, while keeping benefits due to competition (e.g. excess profits made by selling low cost power at higher market prices) to themselves. Some customers suggested that there will be increased energy costs for small consumers as large customers buy up blocks of cheap energy. Deregulation will increase rates for commercial customers and small businesses while reducing

rates for large customers.

C. Service Quality Concerns

There is a concern that the quality of service will deteriorate and there will be a situation similar to the telephone industry, including separate bills for distribution and energy services, and phone calls selling electricity. Comments also touched on the importance of reliability in rural areas, and suggested that at the moment rural cooperatives provide excellent customer service at comparable prices to investor-owned utilities; after deregulation this might not be the case. If given a choice, quality of service is more important, price is important but not the main issue. Change will only confuse and frustrate people more than reduced costs will benefit them.

D. Environmental Concerns

A few commercial customers are concerned that if deregulation occurs, power companies will have no accountability and will run older high-polluting plants in an attempt to produce cheap electricity and make quick profits. These customers suggested that in order to prevent environmental damage, the state should develop higher environmental goals toward alternative energy sources, perhaps making their development mandatory. Caps on the level of pollution should be built into any agreements on a merger. Coal burning plants should be upgraded.

Some commercial customers expressed a concern that deregulation will remove incentives for energy efficiency and will result in harming the environment. In light of this, the Commission should not sacrifice the quality of our environment for the sake of deregulation. Coal plants should be required to meet the same pollution standards as new power plants are required to meet.

E. Merger Concerns

Similar to small businesses, commercial customers also have expressed the concern that small utilities will not be able to compete with large utility companies, and will result in takeovers of small utilities by a few big utilities. Monopolies will continue, only they will be larger.

5. **Large Businesses**

A. Support For Competition

Most of the larger businesses supported deregulation. They cited the economic factors that might adversely affect the state's economy if electric producers remained regulated. They attempted to address the concerns of people who thought that rates would be lower for larger customers to the detriment of smaller consumers. Some speakers suggested that the Commission move slowly while learning from the experience of other states that have already gone through the deregulation process. Other large customers, however, recommended that the legislature and the Commission begin implementing competition immediately.

Large customers argues that under competition, economic efficiency could be gained and rates would decrease. They made the following suggestions for the Commission to consider while evaluating the deregulation of the electric utility industry:

- regulate the transmission and distribution
- deregulate the generation of electricity
- transmission and distribution should be subject to open access with non-discriminatory pricing regulated by the Government, and the choice being made by the consumers.

They further indicated that they would like to shop for electricity just as they would shop for anything else. They do not want to be at a competitive and economic disadvantage to like industries in other states or countries. It was suggested that the Commission should be aware of the impact deregulation might have on each of the three types of electric utilities. Also, all consumers must be assured that the present level of service would be maintained.

Several supporters of competition stated that deregulation would break up monopolies, lower costs, and improve services. In addition to that, they asserted that restructuring is inevitable, and Minnesota should go ahead with it. They also commented that about 90% of other states have deregulated, and are doing fine with it. Therefore they encouraged the Commission to proceed with restructuring, arguing that if it is not done, Minnesota would lose jobs, and its competitive edge.

Other large business representatives suggested that deregulation is a good thing, but the Commission should go slowly while making sure that everything is done well. Large power customers made the following suggestions for the Commission to consider while it is investigating deregulation:

- all customers should have access to universal electric service and all customer classes should benefit from restructuring;
- rates for residential and rural customers should not increase;
- safety and reliability of electric service must not be compromised in a rush to compete for new loads;
- all energy suppliers must be governed by the same rules that govern competition in a deregulated market.

Some supporters also suggested that during the transition to deregulation residential and small businesses should be able to choose their service providers one year before large power customers are allowed to.

B. Environmental Concerns

Like other categories of consumers, some of the large industrial customers expressed concern for the quality of the environment. They want the state to be sure that the final plan of deregulation includes environmental safety, and new generation system incentives.

C. Service Concerns:

Large industrial customers expressed some concern about the quality of the service they would receive after deregulation. High quality power is very important to them. Therefore, they request decision makers not to jeopardize the quality as we proceed with deregulation.

6. Community Organizations and Interest Groups

A. Concerns of Senior Citizens

Several speakers relayed their concern of the impact of deregulation on senior citizens who have a fixed income. It was stated that 69% of senior citizens have an income of less than $15,000 a year. Some suggested that under competition, municipal utilities might be forced out of business. As a result, the cost of electricity would be so high that senior citizens could not afford to pay their bills. This could lead to discrimination against senior citizens who would no longer have access to service. Some of these speakers also expressed their concerns about service quality suggesting that less emphasis would be put on administrative matters. If there are service interruptions, there will be a longer wait for the service to be restored.

B. Issues of Low income

With respect to low income people, the commenters felt that deregulated utilities would not make an effort to continue the programs that were meant to help the poor. They requested that the Commission protect the interests of low income people, many of whom depend on fixed income through public assistance, or a retirement pension. Deregulation will not only affect low income individuals. It will also affect the assistance programs that promote energy conservation for low income households.

There are some concerns that low income people who cannot afford to pay for utility service will be ignored. Deregulation will place a heavy burden on 400,000 low income households and further exasperate their economic burdens. They are concerned that NSP is working on reducing its conservation budget by 75% which will also affect its programs for low income consumers. There is a concern about what impact deregulation will have on the poor who depend on others for energy assistance, and they questioned what will happen to the local support the power companies give to the community.

C. Environmental Concerns

Some of these organizations expressed their concern for the quality of the environment, saying that in order to protect the environment, we must reduce pollution by retiring older highly polluting coal-fired plants. If that is not done, the environment will suffer, so will the poor, the disabled, and the elderly. Older plants must be required to meet the same standards set for new plants. It was also suggested that it is important to develop a strong renewable markets, promote energy efficiency and phase out nuclear power. We need to move toward a sustainable energy future, not regress to energy waste and increased pollution.

These same speakers also suggested that deregulation would likely ignore several important public interest programs. For example, there may be a decrease in the emphasis on alternative fuels, and abandonment of energy conservation. Renewable energy sources would be ignored, and the power companies would compete to sell more kilowatt hours and forget about these programs. Some speakers recommended that the Commission use the opportunity of restructuring to protect the environment by maintaining and expanding programs to promote renewables, energy conservation and efficiency.

D. Reductions in Maintenance and Utility Personnel

Union representatives indicated their concerns that the utility operations and maintenance programs would be cut back under competition. The result would be a decline in the quality of service, a decline in the quality of the work environment, as well as a cut back in the number of utility employees.

E. Cost Concerns

Concerns were expressed that costs will be externalized and shifted onto society and taxpayers. Small residential consumers, and/or small businesses should not be penalized with higher rates than large industries. Another concern is that customers in the rural areas will be cut off from service because they do not bring in enough profit. Additionally, comments were received suggesting that Midwest power companies will sell power to eastern markets at a higher price and electric rates in Minnesota will be higher than what we are currently paying.

F. Preference for Wholesale Wheeling

The public comments pointed out that retail wheeling will cause more uniform prices across the U.S. The east will experience lower prices and the current lower cost areas in the Midwest will end up with higher prices. They suggested that it is best to have a diversity of power producers including investor-owned, municipal, cooperative utilities, independent power producers, and/or distributors for wholesale wheeling.

G. Lack of Information

Some people were concerned that they did not receive the information regarding the public hearings. They feel that since this matter is very important and will affect them, they should have been able to receive this information far in advance so that their comments would be considered in the decision making. They questioned why they were not sent information in advance.

H. Stranded Costs

Shareholders were concerned about the financial health of the utility and the value of their shares. According to the representatives of Minnesota Utilities Investors (MUI) the average utility shareholder invested in utilities because they were considered safe, predictable, and provided a fairly good return on their investment. Their objective at the time they purchased stock was to supplement their income from social security, and pension payments. Under deregulation, utilities are becoming riskier and investments which have traditionally been considered "safe" are now at risk. Shareholders' worry is driven by the news that there will be a reduction of dividends in some companies, as well as a general decline in the value of their principal. It was noted that deregulation would create competition, which would force some utility companies out of business and some may end up filing for bankruptcy.

General Concerns and Concluding Comments

Some concerns were connected to a fear of losing utility jobs during the deregulation process. Some commented that consumers would lose the personal touch with their power companies. There was an expression of a fear that the electric industry will become like the telephone industry, with too many phone calls attempting to persuade customers to switch energy providers. There were some questions as to whether the Commission will completely detach itself, and that it will remove existing rates of return. Some were wondering how an investor-owned utility could compete with a rural electric association subsidized utility. How will the Commission create a level playing field?

Some continued to comment that Minnesota does not benefit when customer service centers and corporate decision-makers are located in Wisconsin, Chicago, or New York City. Local decision makers, local accountability, and local neighborly service benefit electric customers. One person commented that the public hearings were a disgrace, it was a status quo criticizing change that has not been defined yet. There are some rigid processes intended to kill reform by using methods to incite fear of change.

Many of the public comments expressed concern for environmental quality, the cost of energy, and the reliability and quality of service. Some who supported competition indicated a preference for wholesale wheeling as opposed to retail wheeling. However, most supporters of deregulation wanted it at the retail level suggesting that tremendous savings could be achieved. Overall, very few individuals testifying at the hearings supported retail competition, and the majority of the comments did not support the introduction of competition. Rather they voiced

their concerns and urged the decision makers to keep their concerns in mind. Many believed that deregulation is an insult to our current system which is already working well. Now we want to mess it up unnecessarily.

Most of the comments seemed to suggest that whatever change does occur, it should be approached with extreme caution. Several people were alarmed at the proposed NSP merger, they suggested that it should not be allowed to happen.[16] There were frequent parallels drawn to the deregulation of the telephone industry, particularly to the less popular aspects, including vast mass-marketing campaigns. Some believe that the current electric utility structure is fine and note that Minnesota ranks thirteenth lowest for electric rates across the nation, and questioned why we are attempting to fix a system that is not really broken. The tone of many comments suggests there is doubt that restructuring will help the society at large, especially the farmers, residential customers and small businesses. It will increase rates and bring chaos similar to the telephone industry.

Some of the comments seemed to assume that the decision to restructure utility industry had already been made, and that the public comments do not seem to matter anymore.

[16]The proposed merger between Northern States Power Company and Wisconsin Energy Corporation was called off in May, 1997.

Appendix D

Final Report of the Safety, Reliability, and Service Quality Subcommittee

February 28, 1997

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I. INTRODUCTION

There are several factors driving the debates regarding electric utility industry restructuring. All are forces which in and of themselves are able to stimulate the restructuring dialog. Cumulatively they create a mix of issues that tend to confuse the debate. Three of these driving factors are technology, economics, and federal laws. Competition is generally viewed as a stimulant to optimizing the first two factors while the federal laws were established with an intent to encourage competition. The debates have evolved around two major competition arenas: competition in the wholesale area and competition in the retail area.

The discussion of retail competition is provided here as a general guide to the type of questions that must be addressed in conjunction with, or prior to, any attempt to implement retail competition. The debate on the supposed benefits of retail competition is by no means an easy one. The potential impacts to the delivery of electric service in the areas of Safety, Reliability, and Service Quality need to be addressed by policy makers as a result of the introduction of competition. Responding to these change forces is the subject of this subcommittee report. The purpose of this paper is primarily to point out issues relating to Safety, Reliability and Service Quality, and to define options that may be useful to policy makers who will make the decisions regarding any move to retail competition.

II. WHOLESALE COMPETITION ISSUES

These issues were addressed on pages 18-20 in the October 18, 1996 Wholesale Competition Report. Appendix F of that report contains this subcommittees analysis of the wholesale competition issues relating to Safety, Reliability, and Service Quality. Many of the issues raised in the wholesale debates carry over and may be accentuated in the retail competition scenario. That report is incorporated here by reference.

III. RETAIL COMPETITION ISSUES

A. Bulk Power System

The bulk power system may be loosely defined as energy generation facilities and high voltage transmission facilities that produce and deliver power to general geographical areas for further local delivery over lower voltage distribution facilities to the ultimate end users. While this definition is functional in nature, bulk power transmission facilities may be thought of as being in the range of 69 kV-115 kV and above, with lower voltage facilities considered local subtransmission or distribution.

The Initial Report and Recommendation of the Subcommittee on Safety, Reliability and Service Quality Regarding Wholesale Issues (Initial Report) discussed a number of issues related to the impact of expanded wholesale competition on the safety, reliability and service quality (SRSQ) of the bulk power system. Those concerns and issues would be applicable to a retail competition scenario as well. In addition, there are a number of reliability issues that would be introduced and/or would be present to a much greater degree under a retail competition scenario than would occur under expanded wholesale competition. The reader is invited to review the Initial Report of the SRSQ subcommittee for a more detailed discussion of bulk power system related issues raised by wholesale competition.

As discussed in the initial report, the reliability of the bulk power system is generally considered to consist of two components:

- Adequacy of supply; and
- System security.

The impact of retail competition on each of these aspects of the reliability of the bulk power system will be discussed in the next two sections.

Bulk Power System Service Quality issues related to transaction scheduling, energy accounting, and system operation will also be addressed.

Adequacy of Supply

Under the current industry structure, Minnesota and other states in the region are divided into exclusive service territories, each served by a single utility. Each designated utility has the legal responsibility and obligation to ensure an adequate bulk power supply for its assigned area. This responsibility is discharged through a combination of short, intermediate and/or long term commitments. In the case of a vertically integrated utility, this responsibility rests solely with that utility. In the case of non-vertically integrated utility (typically, a cooperative or municipal), the responsibility may be shared by the distribution utility and its power supplier.

Regardless of corporate structure, the utility providing retail services is ultimately responsible for ensuring the adequacy of the bulk power arrangements, through purchase in the bulk power market or through generation, and to provide for delivery to its assigned service territory because of its obligation to serve. Regional pools and/or reliability councils, such as the Mid-Continent Area Power Pool (MAPP), coordinate this action among different suppliers on a regional basis. Most states, through their advanced planning procedures (e.g., Wisconsin) or their integrated resource planning (IRP) process (e.g., Minnesota), and to a lesser extent with their siting and/or construction certification authority, review utility proposals of what resources are needed that also serve to ensure

that adequate bulk power supply arrangements are made by the utilities operating in the state.

Increased wholesale competition will not change the present arrangement appreciably. Utilities providing distribution services will continue to have ultimate responsibility for ensuring adequate bulk power supply arrangements for the areas they serve. MAPP will continue to have responsibility for coordinating these activities on a regional basis and the states will continue to provide oversight for utilities operating in their individual states.

Under retail competition, where individual customers choose their supplier, this situation would change dramatically. Distribution utilities, those providing the wires services, would presumably no longer have either the ability, or the responsibility, for ensuring an adequate power supply for their assigned service areas. This would be true even if they were to continue to have some role in selling energy services to some customers in their areas, as supplier of last resort, or marketing representative of one or more power suppliers. Other types of sellers will be offering energy services in the service area based on a customer class, aggregating for many small customers, or another marketing focus with other than a geographic description.

Since a distribution utility would no longer be required to match generation and load, and without some defined mechanism and designated long term planning responsibility, no entity would have the responsibility for ensuring that adequate bulk power supply resources exist to serve the state of Minnesota and other states in the region. MAPP has in the past addressed the realtime adequacy of supply problem. The new MAPP Regional Transmission Group function, and perhaps ISO's, may pick up some of the planning responsibility. Special legislation may have to spell out the responsibility or authority for addressing and resolving this issue.

Left on its own, the power supply market has no obvious natural mechanism or designated entity that would fulfill this planning function of ensuring that an adequate bulk power supply system exists and will continue to exist on a local, statewide and/or regional basis. Some might argue that market forces will develop the right financial instruments and price signals that would produce a reasonable matching of supply and demand over a long period of time. However, individual power supply providers could decide, for whatever reason, that the risk was too great to install capacity for potential future requirements; they might simply choose to hold pat with the resources already in place.

Short term shortages caused by the lack of coordination of future planning could have serious effects on the economy and quality of life in Minnesota. While this potential supply void would be of concern on a short term basis, the greatest concern would be for the long term, as markets tend to focus on short term profits and arrangements. Before any retail competition plan is put in place, this issue must be addressed and resolved.

While adequacy of the bulk power supply is generally considered from a system perspective, it should also be addressed from the perspective of an individual customer.

Under unrestricted retail competition, bulk power resources would be marketed by price. Individual small use customers (e.g., residential and small commercial) may have difficulty competing with larger use customers (e.g., large commercial and industrial) for their power supply requirements. Residential and small commercial consumers could find themselves significantly disadvantaged compared to large customers to access to the supply from the cheaper sellers. Small use customers, particularly those with limited economic resources, could be at a significant disadvantage vis a vis large use customers.

There are a number of possible solutions to this potential problem, such as aggregation of load for small use consumers, designated suppliers of last resort, the development of an effective power pool model, etc. It is by no means certain, however, that any of these solutions would develop on their own in a manner that would adequately address and solve the problem without specific legislation and/or regulatory requirements. The solution to this problem should be considered an essential component of any retail competition model.

System Security

System Security is a concept that relates to the ability of the bulk power supply system to survive unexpected upset conditions in a manner that keeps the system operating in a stable mode. It may be defined as protection from uncontrolled cascade tripping of transmission facilities or large, area-wide blackouts.

The issue of system security on the bulk power system exists under a wholesale competition scenario, but must be considered to a greater degree in a retail competition scenario. The existing bulk power supply system was not designed with retail competition in mind. Rather, it evolved over time through a coordinated design effort of regional utilities, each focused primarily on the needs of their own native load customers, including the potential function of regional inter-utility transactions that would assist in lowering the cost of service. The bulk power system generally was not designed with an eye toward larger inter-regional transactions and/or through power flow.

Expanded wholesale competition will create new operating situations on the bulk power system by causing power to flow in ways not originally contemplated when the system was designed. The expected increase in the number of market players (generators and brokers), many of whom come to the table with limited experience in the operation of the bulk power system, will complicate and increase the pressure on system security.

Retail competition would increase the number of transactions taking place and raise inter-regional and through flow transactions to an even higher level, increasing the changed

operating conditions on the existing system. There could be reduced reserve capacity on critical bulk power transmission components. Retail competition might create pressure to operate certain transmission components closer to their limits, perhaps improving economy and/or profits, but unless there is a deliberately developed mechanism to evaluate the security implications, this could potentially be at the expense of the quality of system security.

The Federal Energy Regulatory Commission (FERC), has identified in guiding principles, short term reliability as function of an independent system operator (ISO). An ISO operating under standardized procedures designed to preserve the integrity and reliability of the bulk power system will be an important element in maintaining system security. A key to the success of an ISO in terms of preserving security on the bulk power system is the establishment and implementation of rules that place a high priority on overall bulk power system security rather than on individual corporate profits.

The existing North American Reliability Council (NERC) operating rules, that are intended to preserve and maintain system security, will have to be extended to include the reality of an increased number of transactions. A more complex system for considering the security implications of new operating configurations will have to be developed prior to any actual attempt to implement retail transactions on the bulk power system. NERC has recognized the need for expansion of the existing system, and has indicated it will take the lead on developing the necessary system.

For example, the NERC Board of Trustees voted in January, 1997 to make NERC a topdown organization with mandatory requirements for all utilities to be members. This obligates all regional reliability councils, such as MAPP, and their members, to comply with all NERC reliability policies; this obligation will carry enforcement and penalty provisions for the first time in NERC history. Other reliability strategic moves voted on by NERC are also being implemented, such as establishing a program for system operator certification, setting up a Security Coordinator Subcommittee that will oversee implementation of all regional security plans and processes; development of an Interchange Distribution Calculator to predetermine the effects of interchange transactions on transmission paths; and possibly establishing national planning reserve standards to replace the current individual regional standards; and implementing a Transactions Information system to provide for a uniform method of ``tagging" interchange transactions for accounting and tracking purposes. Also at the Federal level, the DOE has prepared draft legislation for electric industry restructuring which includes extensive reliability consideration. It is clear the reliability of the electric system is a top priority and must be kept as a principle focus throughout any state restructuring decisions.

Energy Imbalance

Responsibility for the reliability of the electric system in the United States is divided into regions. MAPP is the region covering Minnesota and its bordering states. Within a reliability region there are control areas that are the responsibility of individual utilities or group of utilities. In some instances, a control area may represent the service territory of a single utility. In other instances, the control area may encompass the service territories of more than one utility, with one of the utilities (usually the largest) and/or a pool being designated the control area operator.

Electrical energy cannot be stored. It must be produced at the same instant as it is used. When an energy imbalance exists between production and load, generators connected to the system either speed up or slow down to restore the balance. Mismatches between the energy deliveries that were scheduled and what actually took place is referred to as inadvertent energy or energy imbalance.

All control areas have an operations center that is staffed 24 hours a day with operators that monitor the status of the control area on a continuous basis. Among other things, the control area operator is responsible for ensuring that production and load remain in balance on an instantaneous basis. The process of matching production and load is generally referred to load frequency control. This is done by monitoring the output of generating facilities located within the control area, the flows on interconnections between the control area and other control areas. The total system load, customer load plus losses, may be determined indirectly by this method at minimal cost. Part of the societal benefit we get from this load frequency control process is accurate clocks. Most modern digital clocks use the utility power supply as a frequency standard to calculate the time.

The control area operations center dispatches generation to follow load changes on an ongoing basis to maintain the load frequency control. This frequency control function will still have to be carried out by some designated and responsible operations center under a retail competition structure. The process may be complicated by an increased diversity in the generation mix and by an increased number of transactions.

Transaction Scheduling

To enhance economic efficiency, and reliability, it is common for utilities to buy and sell power and energy. These transactions must be scheduled in advance to alert the generation and transmission operators to the demands that will be placed on the system. Today the control area operator is responsible for coordinating and recording such economic and reliability driven transactions.

The control area operator is also responsible for monitoring the energy imbalance and

arranging with other control area operators and/or other suppliers to schedule changes to generation levels as correcting transactions to compensate for any such imbalances.

Each transaction involves a "handshaking procedure" that takes place between the control area operators at the generating source and the receiving load. Prior to the transaction taking place each control area operations center knows and verifies that it is able to send and/or receive the power involved in the transaction.

Under wholesale competition, the number of transactions taking place each hour are expected to increase, placing an increased burden on control area operators and utility accounting systems. It may also increase the instances where the control area operator is not the entity responsible for following the load of other utilities physically located within its control area, as loads may be transferred to other control areas electronically. While this situation is more complicated than has historically been the case, it would appear to be manageable under the current structure or a modified structure that would include ISO's or similar arrangements.

Retail competition with access to be provided to all customer classes would increase the complexity of the situation many times over. Unless only a limited number of customers were to be granted choice of power suppliers, the existing mode of operation would have to be substantially modified.

Under retail competition, transaction tracking, and the reliability analysis that must necessarily precede the actual transaction, would need to expand in scope to cover the potential transaction count limit. Just what a transaction would be in a retail competition environment is still undefined. There is a worst case upper transaction count limit of one transaction per retail customer. The infrastructure system to do this does not exist today. Some entity must know all the transactions scheduled to take place, where they originate from, and where they are expected to terminate. Would marketers aggregate retail transactions? Would the transaction destination have to be defined to the retail meter, the distribution substation, or the utility control area? The entity must also have the ability to analyze the reliability impact on the system as a whole on a real-time basis before the actual transaction takes place.

The banking industry is a notable example of an industry that has developed the technical ability to track millions of transactions on a real-time basis. Computerized facilities on a level comparable to the banking industry may be necessary to track retail competition in the electric industry. In addition to tracking the transactions, a prior review for system reliability impacts will be necessary within the electrical system.

Bulk Power System Energy Accounting

Operating power generating plants will always result in some difference from the plan in

the actual operating result. Unexpected failures of equipment, load and generation levels that differ from projections, as well as weather related factors all contribute to the differences that exist in planned versus actual. The existing wholesale competition market has evolved a methodology for transaction cost accounting of the expected transaction costs, and has also developed a system for settling the cost accounting associated with differences that may occur between the projected and actual transaction as it actually occurs on the grid. The limited number of participants in this market has helped to define the system that exists for the energy accounting associated with the scheduled transactions.

The introduction of retail competition raises new problems for the energy accounting associated with multiple transactions. If customer choice is available to all customer classes, it would no longer be possible to determine proper energy accounting through control area loads monitored on a momentary basis by metering the output of generating units, the flow across tie lines, and a limited number of delivery points (wholesale and/or retail).

Instead, to measure load/generation to the same degree of accuracy per transaction that is done today, it would be necessary to meter the load requirements at each retail delivery point, which could be at each individual retail customer's location and the output from each generating station. It is possible to monitor cumulative consumption/production in kWh with existing meters, but to ensure that the supplier of the energy tracks the consumption of the energy in a retail access scenario, some realistic and cost effective method of real time metering at each customer/generator location may be required. This metered load/generation data would need to be provided to the control area operator on a continuous, real time basis. This would require sophisticated metering and communications, greatly increasing cost over the current mode of operation. Typically, the cost of installing an energy meter for a residential or small commercial customer is less than $100. The cost of installing a recording meter capable of being read remotely on a real time basis has historically cost 10 times that amount, with additional operating cost for communications and maintenance. New technologies are driving these sophisticated metering costs downward.

Specific techniques for energy accounting in a retail access scenario could be developed. Some options for this include:

- Utilize sampling techniques for an aggregated small use class (e.g., residential and small commercial) as a proxy for real time metering. The use of such a proxy, however, would undoubtedly increase energy imbalance (i.e., the difference between a power supplier's actual generation output and load responsibility). A means would need to be developed for assigning responsibility for the cost associated with the inevitable energy imbalance on a fair and equitable basis.

- Aggregate smaller loads on an area basis. Aggregation of small customer loads should reduce transaction costs; but unless done on an area basis, such that the input to the area could be real time metered, it would not solve the real time metering problem. Requiring aggregation of small customer load on an area basis might prove politically unacceptable as it could limit customer choices.

- Formation of a regional retail POOL. Under this scenario, the regional POOLs would compete for power supply resources, pool the various required resources and sell to small use customers on a blended rate basis. The only customer real time metering that would be required for competition to work under a retail regional POOL operation would be for large customers who choose to sign bilateral agreements with individual power suppliers rather than purchase from the pool. Depending upon the number of large customers choosing that bilateral option, such an alternative could be manageable with existing technology.

B. Local Distribution System

Definition

Most restructuring plans envision the distribution function to be regulated by the state. Regardless of the regulatory structure, there would likely be a need to distinguish between transmission and distribution. FERC has recognized the need for this distinction and developed a functional definition as follows:

- Local distribution facilities are normally in close proximity to retail customers;
- Local distribution facilities are primarily radial in character;
- Power flows into local distribution systems, it rarely, if ever, flows out;
- When power enters a local distribution system, it is not reconsigned or transported on to some other market;
- Power entering a local distribution system is consumed in a comparatively restricted geographical area.
- Meters are based at the transmission/local distribution interface to measure flows into the local distribution system;
- Local distribution systems will be of reduced voltage.

In a footnote to Order 888, FERC stated that it had analyzed utilities' filings and determined that, "While there is no uniform breakpoint between transmission and distribution, it appears that utilities account for facilities operated at greater than 30 kV as transmission and that distribution facilities are usually less than 40 kV."

While such a functional definition may be helpful in describing the differences between transmission and distribution in general terms, it may be necessary to provide a more

specific definition to avoid a blurring of the jurisdictional lines. For example, while there may be general agreement that 69 kV facilities are usually classified transmission (or subtransmission) and 12.5 kV facilities are usually classified distribution, there may be controversy regarding 24.9 and 34.5 kV facilities. In some instances, such facilities may be demonstrated to fulfill a transmission (or subtransmission) function, while in other instances the facilities clearly function as distribution. However, there are an increasing number of instances where 24.9 and/or 34.5 kV facilities fulfill both transmission (subtransmission) and distribution functions. A common and specific functional and geographic boundary is necessary when addressing the issues presented in this section.

Distribution Energy accounting.

The SRSQ subcommittee identified a number of issues needing resolution relative to accounting for the energy purchased and used by retail customers. These issues include:

- Lack of infrastructure for energy accounting;
- Accounting for distribution system losses;
- Forecasting, scheduling and delivery;
- Transaction volume;
- Contract transfer point issues; and
- Reconciliation of differences between generation and consumption.

Lack of Infrastructure

As discussed previously, the existing energy sales accounting infrastructure used for wholesale transactions would be swamped under most retail competition scenarios that involved customer choice for all retail classes. The potential customers involved in wholesale transactions in Minnesota are probably about 300, but the theoretical potential number of retail customer transactions exceeds 2,000,000. The sheer volume of individual retail transactions could require an entirely different infrastructure from that currently being used to keep track of wholesale transactions, depending upon how the transactions were structured. The use of POOLs and/or aggregation of load by marketing entities, commonly referred to as resellers, would reduce the number of participants in this process. The number of transactions to be expected is a matter for further discussion.

The physical nature of the electrical system is that power and energy flow from the network power supply sources to a given load on the system as long as a continuous path is maintained. This is true even if there were to be no contractual arrangement between a given supplier(s) and the customer. The flow of energy can not be shut off at the customer's premise by the power supplier (for example, for non-payment) without physically removing the meter or through the installation of expensive switching equipment.

While such remote switching equipment might be cost justified for large customers, it would be clearly cost prohibitive for small customers. The estimated cost to install a switch for a residential and/or small commercial customer capable of being controlled remotely by the power supplier is in the range of $500 to $1,000. Assuming 2,000,000 meters, this would amount to 1 to 2 billion dollars. If the switch were owned by the power supplier, it would need to be changed out or transferred each time a customer changed power suppliers.

Under the current system, only the distribution provider can or should physically connect and disconnect customers. Some entity should be assigned the responsibility of ensuring that each retail customer had a valid power supply arrangement and that the energy the customer actually used could be traced to the input of an equivalent amount of energy plus losses, by that supplier to the bulk power system. Absent this policing function, it would be possible for a customer to remain connected to the distribution system, receiving power and energy over that system without paying for the delivered energy. An alternative advocated by this committee is to have this accounting and policing function assigned to the distribution wire services provider. One advantage of this approach would be that the wire services provider would represent a stable point of reference that would not change over time and would still be a potentially regulated entity. In contrast, a customer's power supplier and/or reseller would be very susceptible to change over time.

Accounting for Distribution Losses

When electrical current flows over a distribution system, energy is consumed and heat is produced. This heat represents losses in terms of real power (kW) reactive power (kVar) and energy (kWh). Some of the major sources of losses on a distribution system are:

- Substation transformer and equipment;
- Primary line;
- Primary equipment such as regulators, capacitors and reclosers;
- Service transformers;
- Secondary and service drops;
- Leakage over insulators and to other ground sources; and
- Meter errors and theft.

To compensate for losses, the power and energy delivered to a distribution system must be some percentage higher than the power and energy delivered to the ultimate end user.

Typically, distribution system losses fall in the 5 to 12 percent range, depending upon many factors including

1) the definition of the distribution system,
2) the location and load of customers relative to the delivery point,

3) the size of the area served by each substation.
4) the voltage of the primary distribution system,
5) the conductor size of the primary distribution system.
6) the sizing of transformers vis a vis customer loads.

Under the current regimen, where retail customers are provided bundled services, distribution system losses are the responsibility of the distribution provider who provides or purchases sufficient power and energy to cover the losses and includes the cost in the standard bundled rates. The question has to be answered regarding accounting for these losses in a retail access environment.

Possible ways of handling losses under a retail competition scenario would be:

- The distribution system provider would continue the present practice and purchase an amount of power and energy sufficient to cover distribution losses on the open market. The cost for this purchase would be included in the standard distribution wire services delivery rates.

- The responsibility for paying for and providing the energy services associated with distribution losses could be transferred to either the power supplier or the customer. The distribution provider would then be relieved of the responsibility for such losses, except to the extent that it continued to provide bundled services to retail customers. In essence, the power supplier would be called on to deliver into the network power and energy sufficient to cover the customer's load plus an allowance to cover the losses associated with delivery. Exactly how this would be accomplished would need to be determined.

- Assign a percentage loss charge to each class of customer recognizing differences in delivery voltage, etc. The percentage could be a flat amount, an amount adjusted and reconciled annually or an amount based on a time-of-use formula. Any mismatches between estimated and actual losses would add to the energy imbalance on the bulk power system; and a mechanism would need to be established to reconcile the difference on a periodic basis.

Forecasting, Scheduling and Delivery

This issue is also a bulk power supply issue as well as a distribution system issue. A discussion is included under the Bulk Power Supply section on Adequacy of Supply.

The distribution wire services provider must still have facilities in place to meet forecasted loads and to provide delivery services reliably and with acceptable power quality and service quality. Under the present day system where the energy services and wire services are provided by the same entity there is no problem with information access between the forecasting and wire services providing arms of the organization. If these

functions are separated there will need to be some mechanism in place that allows the wire services provider to have access to forecasted demand and energy data from customers in order to plan for facility improvements as necessary.

Transaction Volume

This issue relates to the number (volume) of transactions, and has been discussed previously as a bulk power system problem. The local distribution wire services provider is impacted by this transaction volume problem to the extent that there is a role defined for them in either disconnections/reconnections, as an energy provider of last resort, or as a billing agent for energy providers.

Contract Transfer Point Issues

Under the current industry structure, the contract transfer point for retail customers is usually at the load side of the meter, although for large customers another point is occasionally specified in a contract. Retail competition should not change this endpoint arrangement for retail transactions. There could be multiple contract transfer points in a specific contract path from generator to end user especially if there are multiple brokers involved.

The question arises regarding a retail customer who buys his power priced for delivery at the generator bus. Can the individual retail customer assume the responsibility for moving the power to his end use point?

If the metering function is separated and not provided by the distribution utility, there will be a need to clarify where the responsibility of the distribution utility, meter owner, and retail customer begin and end.

Reconciliation of Generation and Consumption

This is normally a power supply, not a distribution system issue. It is discussed at length in the bulk power section. There may be a need to discuss this matter as a distribution issue if there is distribution sited generation plant serving retail customers on the same distribution system, where the contract path for the power flow involves no transmission component.

Customer Service Quality Issues

The SRSQ subcommittee identified a number of customer choice service quality issues, including the impact of only some customer classes participating in retail access; Information access to a supplier's performance record; billing and collection procedures; and Power Quality.

Partial Retail Access

One of the guidelines stated by the Commission in its Order Adopting Principles and Action Steps as Guidelines for the Competitive Working Group in Docket No. E-999/CI-95-135, dated May 14, 1996, is that all customer classes should benefit. Allowing only the largest customers to participate could be unfair to the vast majority of the retail customers, in that it could potentially lead to the lowest cost resources gravitating to the few customers who are allowed to participate.

The Commission should reaffirm the fundamental principles that all customer classes should benefit from any retail access scenario. In this case, fundamental fairness is far more important than simplicity. The fairness issue must be resolved. There are interested parties that feel strongly that resolving this issue is fundamental to their stance on retail competition. Much of the complexity of issues discussed herein relate directly or indirectly to the vision of a program in which all customer classes share equitably in the declared benefits to be derived from retail competition.

There is a transitional aspect to the fairness question. The dates and the order in which different classes of customers are allowed to begin choosing a supplier could result in the lowest cost sources of energy being selected by those groups allowed the first choice. Any program that begins this type of all class customer choice should have a component that distributes the opportunity to choose a low cost source to all classes..

Those who decide not to exercise their choice provisions, out of habit or because they are not well informed, or are not able to establish the proper credit with providers, will have to be served by a default energy provider. There will need to be discussion about how that default provider determines energy costs for this class of customers.

Supplier's Performance Record

In order to make intelligent supplier choices, retail customers must have information on the performance records of potential power suppliers. The performance of a power supplier can be described by its history on a number of different customer interest issues. The most obvious issue is its ability to deliver the energy it says it can deliver. At this point in time there is no practical way to stop the normal flow of electricity to a retail customer. If the customer's power supplier is out of service, the customer would still be drawing power from the system. Thus, an individual customer would tend to be isolated from the reliability problems of its power supplier except to the extent that the entire system was affected. This issue of power supplier performance, therefore, needs to be addressed at the bulk power supply level, as well as at the retail customer level.

If a particular power supplier proved to be unreliable, and the previously made arrangements for automatic backup power are invoked, the reliability impact of that would show up on the bulk power system, not necessarily on the customer's doorstep. Of

course, the lack of reliability impacts the system-wide costs associated with the flawed transaction. In a competitive market those costs are expected to somehow be passed on to the supplier's retail customers, aggravating price volatility. Eventually the supplier will raise contract prices to cover costs or go out of business.

Customer access to information about a supplier's performance could be accomplished by requiring all power suppliers interested in selling at retail in Minnesota to register and file annual reports with some state agency containing relevant information in a user friendly format. The state could then make such information available to interested retail customers using a variety of means, including the Internet. As an alternative to state involvement, potential suppliers could be required to provide this information directly to prospective customers.

Billing and Collection Procedures

When the bundled services currently provided to a retail customer are split into component parts and are provided by two or more separate providers, the question of how the billing and collection procedures are to be handled have to be addressed. The existing Commission rules in this regard have evolved over a number of years on a number of issues. The regulation of this utility function has been a necessary part of setting fair practices on these procedures. Cooperatives and Municipal utilities, while not directly under Commission regulation, have often used these rules as guidelines. Whether this structure is sufficient in a retail access environment needs to be discussed.

At the least, most of the visions for retail access have retail customers getting energy services from one source and poles and wires services from another source. While each individual customer would be responsible for arranging for its power supply directly or indirectly through an agent or aggregator, some entity would need to coordinate and record the transactions and arrange for transferring the customer from one supplier to another. It is important to emphasize that this is primarily a bookkeeping function, not a physical transfer involving disconnection from one system and reconnection to another.

Unbundling of electric service would increase complexity of retail electric service by increasing the number of players. One result could be an increase in the administrative cost associated with the metering, billing, disconnection/reconnection, transference of service, etc. The number of parties affected when a customer fails to pay the bill would also likely increase. The rules, rates, and penalties assessed as a result of the late payment and/or default should be fairly designed to protect the interests of all parties, customers as well as suppliers.

The distribution provider could continue to be responsible for the billing and collection, at least for the distribution delivery services they provide. Billing and collection for the power generation and transmission function could be determined to be the responsibility of the power supplier, or, if applicable, a reseller. This would imply that the customer

would get at least two electric bills for the partial unbundled services. Each would presumably have its own payment due dates and penalties for late payments, etc.

The power supplier and/or reseller could voluntarily subcontract this billing and collection function to the distribution delivery provider or to some other entity. This function could also be legislatively mandated to be subcontracted to the distribution provider. There would appear to be a need to be some uniform means of dealing with partial payments, non payments, and incorrect billings, on an equitable basis. Otherwise, the energy services provider may have to settle for whatever billing and collection practices are in place with the individual distribution service providers.

If, as discussed, the billing and collection function were to continue to be provided by the distribution utility, there would appear to be an opportunity to continue with the existing state controls presently required for the distribution delivery function, although there would be a need to establish at least the pattern or rules for billing and collection associated with the power supply and transmission functions.

The present individual utility billing and collection rules and systems could simply continue. Distribution utilities regulated by the state would continue to come under the rules and regulations promulgated by the Commission, while customer regulated distribution utilities (i.e., cooperatives and municipals) would continue to establish their own billing and collection procedures consistent with whatever statewide standards were established by the legislature. Power suppliers and marketers would remain free to utilize the billing and/or collection services of the distribution utilities or provide such services on their own, subject to standards established by the Commission.

Disconnection/reconnection policies and procedures could be handled in a similar fashion. Distribution utilities regulated by the state would continue to follow rules and regulations approved by the Commission. Customer regulated distribution providers would continue to use rules and regulations adopted by their appropriate governing bodies, subject, of course, to any requirements established by the state.

It is important to emphasize in this regard that the distribution utility should be the only entity permitted to physically connect, disconnect and/or reconnect a customer to the distribution system. Safety and other considerations preclude multiple parties from operating switches on a distribution system. Rules governing the disconnection of customers for nonpayment would need to be established in such a manner that the distribution utility would not find itself in the middle of the dispute between the customer and a power supplier or a marketer.

In a competitive market, a customer who has his energy supply contract terminated as a result of nonpayment to an energy supplier, would be free to arrange for an alternate provider by signing up with a competing power supplier. The contractual arrangements with the new energy provider to begin to supply service are not necessarily contingent on

payment to the original provider. In instances where the origin of the contract termination order was the power supplier or marketer, the distribution utility would, in essence, function as an agent for the energy services entity. The dilemma here is that unless the meter is physically pulled from its socket, power will still physically flow into the customers location. Electrons don't look to see if a service contract is in place before deciding on a path to follow. Who's power flows into the customer location if a contract is terminated and the meter is not pulled? Who sends a bill? Who gets the money? Billing and collection issues are significant and complex and will require much discussion.

The entire process should be simple and be set up to avoid conflicts. The distribution utility would be responsible for performing the billing, collection and related functions on behalf of itself. Whether this bill should contain any energy service items for the other selling entities will have to be debated. If this arrangement were mandated by the state, the rates and reasonable practices for such service would need to be established through generally acceptable procedures to prevent unfairness by the distribution utility. The distribution utility would seem to be the logical entity to coordinate this function as it would be the one common constant in a possible string of entities that would be necessary to provide electric service to a customer. Assuming that this function were assigned as a regulated monopoly service supplied by the distribution provider, the fee for the service would need to be based on cost of service.

Within general guidelines designed to protect customers from unfair business practices, distribution providers, power supplier and/or marketers should be allowed maximum flexibility to offer innovative rates and services. For example, some entities may wish to offer service on a purchase before use basis. In a competitive market, such options should be permitted, but not mandated.

Power Quality

Power quality is usually thought of in a technical sense as relating to the level of voltage provided at the customer's service entrance, the shape of the voltage wave form (i.e., harmonics), the type and range of voltage fluctuation (e.g., flicker, surges), the appropriate level of neutral to earth voltages in rural areas, etc. It can also be thought of in terms of no service available at all through short term, momentary, or long term outages. These issues are primarily distribution wire service provider design and operation related issues. Operations at individual customer locations can contribute negatively and positively to several aspects of the distribution system service quality and have a potential to impact other customers as well.

There will be a need for continued development of distribution service standards. It is possible that retail competition would change the funds and/or the incentives driving distribution system maintenance practices and procedures. The need for standards and the way in which the existing standards are being enforced needs to be a part of any

discussion relating to retail access. This issue was discussed in the wholesale competition report and becomes even more central to a retail access debate.

The power generator, of course, would be required to meet certain standards of reliability and power quality by the regional bulk power system reliability council. The state would presumably have the authority to establish generator performance criteria for retail transactions as part of a siting and/or licensing process.

Local System Financial Issues

Cost Recovery Issues

As indicated previously, in accordance with the Commission's Principle No. 5, the distribution wire services delivery function would continue to be provided by distribution utilities who would operate in exclusively assigned service territories as natural monopolies, just as is the case today. If a distribution utility is granted an exclusive service territory for the distribution delivery function, it presumably would carry with it the obligation to provide wire services to any customer within the area. It reasonably should be given the opportunity to recover its legitimate and verifiable cost of providing such service. This is particularly true if existing rules such as the Customer Service Rules, Cold Weather Rules, or standards of Safety, Reliability and Service Quality are to be imposed by the state.

Furthermore, such appropriate cost recovery would need to be determined on a utility by utility basis, just as it is today. The process of unbundling these costs of service may show wide variations based on system age, type of geographical location, and system design.

The FERC Uniform System of Accounts (USOA) provides an orderly means for recording such cost; changes in the USOA may be made to accommodate the restructuring of the industry, such changes are better addressed on a Federal level than on a state level. To the extent that the Uniform System of Accounts is open to interpretation, there may be inconsistencies in the way different utilities record distribution operation and maintenance (O&M) costs. If the distribution utility were also to be involved in marketing power and other services on a competitive basis, there would need to be a separation of accounts in order to ensure the segregation of expenses associated with the monopoly and competitive market sides of the business. For this reason, it might be helpful to further develop guidelines and instructions on a statewide basis to foster consistency. This would facilitate the comparison of utility operating results and help to ensure that costs would not be shifted from the competitive part of the business to the regulated part by a self serving interpretation of the accounting instructions. The traditional rate base mechanism for determining which costs are appropriately passed on to the rate payer would still be reasonable for this continued monopolistic utility function.

Performance Based Ratemaking

In recent years, many jurisdictions have experimented with a rate regulatory approach known as performance based ratemaking (PBR). PBR may have a role to play in regulating distribution providers. Establishing performance standards in the areas of safety, reliability and service quality would provide incentives for distribution utilities to maintain and even improve performance in these areas. The essence of this form of ratemaking is to tie increases in profit the utility is allowed to earn to the utility's exceeding performance criteria in such areas such as reliability, service quality, complaints, environment, conservation efforts, etc. Many proponents of this form of ratemaking argue that not only does PBR offer a means of providing clear financial incentives for utilities to perform well in areas deemed to be in the public interest, it also could offer the possibility of reducing the cost of regulation by minimizing the need for frequent, contentious rate cases.

The PBR approach to ratemaking is, of course, only effective when applied to IOU's as they are for-profit entities. Cooperatives and/or municipals are not motivated in the same way by the possibility of profits. The motivation for a cooperative and/or municipal in improving reliability and service quality is satisfied members or citizens, not the possibility of increased profits.

Customer Cost Issues

When the costs of providing distribution wires service are unbundled from the cost of providing the wires services, there may be areas of the service territory that are found to actually cost more to serve than others. If the actual costs are fully allocated to those customers that cause the costs, some customers may find that there total costs of receiving electrical wire and energy service is increased compared to the previous fully bundled rate. This could be a problem for example in rural areas of service territories.

The marketplace will hopefully minimize the energy cost components in a retail competitive scenario. The distribution wire services have unique issues that will have to be addressed. In particular, it would be unreasonable to expect a distribution utility serving a rural area to have the same level of expenditures per customer, per kilowatt-hour, or per mile of line as would be the case in an urban area. Nor would it be reasonable to expect that all rural areas or all urban areas, for that matter, to have similar costs associated with providing distribution delivery service. Since the provision of these wire services will be through a monopoly provider, there will presumably be opportunity through rate design processes to fully assign on a cost causation basis, or allocate to customer classes to average out these variations.

One issue in particular will potentially cause extra costs for some customers. The losses on the distribution system are proportional to the distance from the substation. Customers on the end of the line will have higher loss factors than customers near

substations. If losses are accounted for through the wire services provider, these costs may be averaged in a rate design. If these losses are considered part of the energy services contract, and if losses are assigned on a cost causation basis, the end of line customers could experience higher energy costs than those near substations. Determination of these actual costs could be problematic as the losses attributable to each customer may depend on changing factors such as system configuration, seasonal loading, and design changes. Some continued bundling of costs may be beneficial in terms of fairness to some customers.

There are many who consider an increase in total power costs a decrease in service quality. Any move to retail competition should consider the changed cost impacts to customers as well as utilities.

System maintenance

A regulatory scheme that ensures that distribution utilities will have the opportunity to recover their full cost of providing service should remove any disincentive that might exist relative to the cost recovery of necessary maintenance. This does not remove the incentive to cut expenses to maximize profit margins. Even under traditional regulatory policies, cutting costs results in increased profits, at least until the next rate case.

Strategies for cutting costs in system maintenance areas can include cost transferal to other parties, reduced parts inventory levels, reduced maintenance staffing levels, reduced preventative maintenance activities, and extended operation beyond equipment life expectancies or electrical ratings. While these and other cost cutting strategies are not of themselves detrimental to system performance, they have the potential to create increased disruptions to service quality when carried too far or to extremes. Determining the optimal level of maintenance activities necessary at minimum cost to ensure reliable operations requires extensive review. The trade off between extreme cost cutting measures and service quality is, at the least, increased risk associated with the cost cutting activity.

The dilemma that society must address is: what level of risk will we accept in the provision of electric service? To what extent should the SRSQ performance of a utility be mandated? How should an acceptable standard level of service quality performance on the part of the service provider be determined? What outcomes or results are required? What are appropriate penalties if the standard is not met? Should training programs for workers be proscribed, or maintenance factors be mandated directly?

The incentive to reduce costs is always a carrot dangling in front of any profit driven operation. When short term cost cutting occurs in maintenance activities it can have long term results that cost more than the savings that were expected to be achieved in the short term. This is an issue even in the absence of retail competition.

Standards

One means of addressing the concerns and risks in the areas of safety, reliability, and service quality associated with the competitive pressures of a restructured industry would be to establish standards in each of the subject areas. In order to be effective, there would need to be a means of monitoring and enforcing compliance with the standards. This could be particularly difficult in some cases where there may be a delayed outcome associated with excessive changes in design or maintenance practices. Parts with a ten year life expectancy versus twenty year life expectancy will be cheaper, but they may not start impacting the system performance until ten years later. There are some efficient and prudent cost cutting measures. Determining the difference may require more than year to year data to show trends.

The starting point, however, in any such effort is the establishment of a reporting mechanism that is consistently adhered to by all of the utilities in the state. The monitoring system should be designed to provide the necessary information in a cost effective manner, without becoming an excessive economic burden. Most distribution utilities already develop the type of information needed, albeit it in various forms and under various criteria. A common recording system used by all utilities in the state would be necessary in any effort that would include comparing data between utilities in a meaningful fashion.

One means of determining whether increased competitive pressure has caused a reduction in SRSQ is to compare current data with data from prior years. For example, the comparison of outage records for 1995 and 1996 with the outage records for 1987 through 1992, after adjusting for non-recurring events such as major storms, should provide some indication as to whether or not the anticipation of a move to a more competitive industry has already caused a reduction in this aspect of SRSQ. A statewide monitoring plan and implementation system should be developed as the initial steps to establishing additional standards.

Customers' needs should be a key component in determining what sort of standards may be required of sellers and wire service providers. In addition to the "hardware world" wire service factors such as outage frequencies, voltage fluctuations, construction standards, and response to trouble calls, there may need to be other standards for supplier performance in areas relating to cold weather shut off, non payment shut off, and access to customer service personnel. Should a provider of last resort have to handle continued service when the cold weather rules would apply? It is not possible at this time to definitively identify what specific efforts will be necessary. These issues should not be undervalued in the ongoing debate.

Other states' experience with pilot programs

The SRSQ subcommittee is unaware of any retail competition pilot programs that have specifically addressed SRSQ issues. Most pilot programs are very new, with minimal results currently available. Furthermore, major SRSQ issues are not likely to be encountered in pilot programs involving only a limited number of customers. If there has been any reduction in SRSQ over the past several years, it is due to the anticipation of full wholesale and/or retail competition.

Local System Hardware Issues

Physical Equipment

No matter what type of marketplace is discussed or what type of organizational structure for utilities is debated, the bottom line in the real world is that there needs to be physical equipment in term of poles, wires, generators, and meters to actually enable power to flow from a seller to a customer. This hardware backbone to the electric industry is fundamental. It has the inherent ability to limit and enhance the debates over marketplace and organization type. How the physical system has evolved, how it is to be maintained, and how it is to be configured in the future are all key components in the discussion of the electric industry structure.

The quality of hardware and construction, performance of utility workers and contractors, as well as the maintenance of distribution facilities once they are in service, are key factors in maintaining and possibly improving SRSQ. As long as the distribution utility is assured of a reasonable opportunity to recover its full cost of providing service, there is reason to believe that there would be no less incentive under a restructured industry than currently exists to install, operate and maintain the distribution system at high standards. Just what those high standards are, who sets them, and how is adherence to the standards measured and enforced, will be part of the outcome of the debate. Whether these issues are consciously addressed or fall through the cracks in the debate is still to be determined.

Definition of Local Delivery System

There has been mention already of the problems in the identification of the transfer point between the transmission system and the distribution system. These will not be discussed further here but they are part of the concern area about defining the local distribution system.

There are other issues which may need to be addressed about the boundaries of the monopoly wires service. Existing statutes define exclusive franchises based on geographic terms. In the more diverse world of retail competition there will be a need

for a more functional definition of this exclusive franchise. For example, will a generator be able to build facilities from one adjacent property to another to serve a customer on a non-intertie basis?

To what extent will a new customer be allowed to build and own facilities up to the existing distribution system? Does a large customer receiving primary metered service at transmission level voltage have some portion of the electrical facilities as a part of the exclusive distribution franchise, if the customer builds and owns the equipment?

These and other questions should be considered in a review of the Minnesota statutes that will have to be rewritten if retail competition is to take place.

Service Extension Policy

Most electric utilities currently require new customers to provide a monetary contribution in advance of construction when the cost or distance involved in extending service exceeds a specified amount. The specific details of such line extension policies vary from utility to utility and, in fact, often vary within a given utility between customer classes. Traditionally some utilities like Rural Electric Associations have had very liberal policies regarding the cost or distance partially as a means of attracting additional customers. The threshold level of extensions without cost to the customer can be a barrier or incentive to an increased customer count. There is evidence, even without direct retail competition, that utilities are inclined to use the charge for extending service as a bargaining chip to service agreements with larger customers.

Since the distribution wire service utilities will not be in direct wires service competition with one another, and would still be regulated providers, there is little or no incentive for any distribution utility to seek to gain a competitive advantage over another utility through the line extension policy pricing mechanism. There will be an incentive for a seller of energy services to offer to pick up the customer contribution portion of the extension costs as a means of enticing the buyer to take energy service from that provider. This could conceivably be a neighboring utility that has both an energy services arm and a distribution wire services function. There will be competitive pressures to have these customer extension charges as low as possible or even pressures to allow third party construction of the facilities. Whoever is left with eminent domain powers will have the advantage when it comes to extending facilities.

Finally, there will be a need to address the issue of submetering as part of the service extension question. Could a developer install electric services to a subdivision and ask for utility intertie at one location? The individual homes in this example would then be sold with electric services at the sites preconsigned to the homeowners association, or other designated energy purchase services group designated by the developer.

Unless the laws are changed, distribution utilities that continue to be regulated by the

state would continue to have their line extension policies approved by the Commission. Customer regulated utilities (cooperatives and municipals) would continue to have their line extension policies approved by their selected or appointed governing boards.

Metering

With the existing regulatory structure, the entity providing the wires services and the electrical energy are the same. Under retail access, there will likely be different entities providing these functions. The meter is the point where the wire service and the energy service converge. The meter is both an integral part of the hardware system that delivers the power to the customer and it is the principle focus of any power purchase agreement between a buyer and seller. Which entity controls the metering process (Who owns the meter? Who reads the meter? What meter type is required?) in a retail restructured environment should be addressed from both the hardware and the contractual perspective. Metering issues are a key factor in establishing the rules of the game in a retail market.

As is the case with billing and collection, the most logical entity to perform the metering function would be the distribution utility. The distribution utility already owns the existing meters and has the equipment and infrastructure in place to provide this function. While it is possible that the public interest might be served sometime in the future to transfer the metering function to a competitive market, to do so initially would simply add one more element of confusion to an already difficult and confusing process. The SRSQ subcommittee recommends that the Commission defer consideration of this option to a later date.

Assuming that the distribution utility continues to provide the metering function, it could assume the obligation to modify the metering package for an individual customer at the request of the power supplier and/or reseller. The cost of such modifications would conceivably be the responsibility of the power supplier and/or reseller. The power supplier and/or reseller could have the option of installing its own metering package and providing its own meter reading if satisfactory arrangements cannot be made with the distribution utility. What level of metering is supplied universally, versus at extra cost, is a subject for further discussion.

There is, however, a more difficult question related to the data developed from metering -- specifically how and to what extent should such data be shared with other potential power suppliers and/or resellers. Some mechanism or procedure would need to be developed that would balance the market value of free and open access to customer information with the desire of many customers to maintain confidentiality. Although residential and small commercial customers are likely to be concerned about confidentiality regarding electrical usage, large commercial and industrial customers are often very sensitive in this regard, not wishing this data to get in the hands of competitors.

The distribution company has a need to know the metering data for the adequate

provision of physical facilities, to bill distribution charges, and long range planning of system upgrades. To the extent that the distribution company also sells energy services, the meter data could provide them a marketing advantage over other competitors wishing to sell power to the customer. This could be similar to the situation that exists today with utilities that sell appliance sales and repair services as well as energy services.

Distributed Generation

Distribution utilities have been dealing with customer owned distributed generation (under PURPA Laws) for a number of years; and appropriate rules, regulations and procedures have been established to ensure safety and protection of power quality on the distribution system. Recent decreases in cost of owning and operating such units have made self generation a more viable option for some customers. The opportunity to sell power to another entity besides the distribution utility, at a price determined by the marketplace, may serve as an additional incentive to install customer owned generation. Recent studies have pointed out that distribution sited generation can have other benefits to the distribution system such as reducing system losses, and reducing system peak demand loading.

Were these the only factors, one might expect a significant increase in the number of customer owned generating units dispersed on the distribution system in the future. The proponents of customer choice have argued that full retail competition for power supply will drive retail prices down. If this were to occur it could work to stem the increase in self generation. Regulatory policies on this issue will have a large impact, through incentives or barriers to entry, on the growth of these types of facilities.

The distribution utility company will continue to need to know what type(s) of generation are connected to its system and when and how they operate. This information is necessary for the safety of its workers and the proper operation of distribution equipment. The entity responsible for the bulk power system operation (ISO?) Will need to know what equipment is connected and when it operates as well as for the planning and delivery function that must take place on the system. Appropriate price signals and penalties for non-compliance with reliability related operations will have to be developed for these distribution sited types of facilities.

In any event, the SRSQ subcommittee sees a reason to consider the development of additional rules, regulations and procedures regarding the connection of customer owned generation as part of any retail industry restructuring discussion. The regulations should not be overly burdensome for customers, and should meet the basic knowledge and performance needs of the distribution system.

IV. CONCLUSIONS & RECOMMENDATIONS

In the subcommittee's wholesale competition report, the following Wholesale Competition recommendations were developed by the subcommittee:

Legislative Changes

The State should mandate an approval process for generation that recognizes the need for safe, reliable, and quality service. An approval process that includes certification by an organization such as MAPP would help achieve this intent.

Generation facilities proposed to be constructed in the future may have social and environmental impacts that should be addressed in an approval process.

Regulatory policies should encourage or mandate participation of new energy industry participants in a reliability region or require that they be contractually obligated to follow reliability requirements.

Commission Actions

The Commission should initiate the development of standardized definitions and performance measures such as outages and interruptions.

The Commission should initiate a process to develop performance measurements and establish minimum safety, reliability and service quality performance standards.

Policies should be developed that cover distribution-sited generation in order to ensure system safety and reliability.

(These initiatives could be accomplished through either a work group or a rulemaking proceeding.)

After reviewing the retail competition issues the subcommittee developed the following additional conclusions and recommendations:

I. **Conclusion:** The infrastucture necessary to analyze and operate the *electric bulk power system,* in terms of transaction review and energy sales accounting, in a retail access manner does not exist today.

Recommendation: Any plan to implement retail access should first require an analysis of the scope, cost, and timing of developing such an infrastructure.

II. **Conclusion:** The infrastucture necessary to analyze and operate the *electric distribution system,* transaction review and energy sales accounting, in a retail access manner does not exist today.

Recommendation: Any attempt to implement retail access should first obtain information from experts about the scope, cost, and timing of developing such an infrastructure.

III. **Conclusion:** Quantifiable performance measurements are necessary to determine, on an ongoing basis, if a changed industry structure is resulting in changed levels of reliability, safety, and service quality.

Recommendation: Steps should be taken to develop quantifiable standard measurement tools that can be used on a cross utility statewide basis.

IV. **Conclusion:** Distribution wires services should remain as a monopoly electrical service.

Recommendation: Any plan to implement retail access should include a review of the definition and the scope of the monopoly services, and a review of the existing and additional customer focused rules and regulations that may be impacted by the changed circumstances.

V. **Conclusion:** The electric bulk power system reliability and service quality in Minnesota depends upon the maintenance of, and adherence to, MAPP's reliability standards in a competitive marketplace.

Recommendation: The state should participate in MAPP activities, as MAPP evolves in a competitive environment, to encourage the maintenance of existing reliability standards and the development of additional standards to ensure reliability in retail competition.

Recommendation: The state should require a "reliability impact analysis and certification" process for new generators in its siting and/or Certificate of Need process.

VI. **Conclusion:** Managing the customer metering, billing, and collections process in a restructured environment will require development of significant new practices and procedures.

Recommendation: It is possible that the public interest might be served

sometime in the future to transfer these functions to a competitive market, to do so initially would simply add one more element of confusion to an already difficult and confusing process. The Commission should defer consideration of this option to a later date.

VII. **Conclusion:** The development of retail competition is expected to produce many new players in the provision of electric service, and many new types, and modifications of, contractual arrangements.

Recommendation: To preserve the existing level of safety, operation of the distribution system including metering, should remain under the control of the distribution services provider.

Appendix E
Summary of Work Group Activities

Meeting summaries from work group meetings #1 through #15 are attached to the Wholesale Competition Report as Appendix H. The wholesale report was issued on October 18, 1996. In addition to the meeting summaries, minutes were taken at each of the work group meetings and are available upon request.

Meeting #16 (October 9, 1996)

Bob Reilly, with ENRON Capital & Trade Resources, gave a presentation on retail competition. He described the need for electric customer choice, and provided a description of how ENRON might meet this need. Following his presentation, respondents from the Department of Public Service, Otter Tail Power Company, the Izaak Walton League, Cooperative Power Association, the Energy CENTS Coalition, and the Office of the Attorney General made comments. Questions and discussion followed. Next, there was a discussion of the work plan for the months of December and January. The work group decided to cover the following issues related to retail competition: universal service, customer protection, fair competition and economic efficiency, resource acquisition, portfolio diversity and environmental protection, public benefits, and transition issues.

Meeting #17 (October 25, 1996)

MNPUC staff presented the work group's report on wholesale competition to the Commission. Following the presentation, work group members commented both on the report and on the process. Next Commissioners asked questions, and expressed gratitude for the work of the group. Chairman Jacobs noted that the report would guide the Commission's thinking on these issues. After a break, the work group heard presentations on the issue of universal service from representatives of Minnesota Power, the Minnesota Rural Electric Association, the Minnesota Energy Consumers, and the Energy CENTS Coalition. The presenters spoke from a discussion outline that included models for providing universal service under retail competition. Questions and discussion followed. The group talked about three types of customer groups that may need to utilize universal service: (1) customers that choose not to choose; (2) payment troubled customers; and, (3) customers isolated from benefits of the markets.

Meeting #18 (November 8, 1996)

The work group continued its discussion of universal service. Staff briefly summarized the way in which other states have dealt with the issue of universal service. Staff reported that, for the most part, the host utility is the provider of last resort. The group agreed that there are, at least, two important issues: (1) who will be the provider of last resort; and (2) what level of service will be offered. Much discussion centered around what the role of the distribution utility will be in providing universal service. The group also discussed the use of a non-bypassable mechanism

to fund universal service.

Meeting #19 (November 22, 1996)

Jerry Larson with NSP made a presentation on consumer protection issues. He talked specifically about metering and energy accounting. He suggested that metering, and standards for metering, should reside with the distribution company. He proposed statewide standards. The group discussed the information monopoly of distribution companies made possible through computer metering. It also agreed that setting standards for metering is important. Brief comments on consumer protection were provided by representatives of: the Office of the Attorney General; the Energy CENTS Coalition; the Department of Public Service; and the International Brotherhood of Electrical Workers (IBEW). Questions and discussion followed.

Meeting #20 (December 6, 1996)

Nancy Radar, an independent consultant specializing in utility regulatory and policy matters related to renewable energy and electric restructuring, made a presentation on the renewable portfolio standard (RPS) as a mechanism to promote renewables. Questions raised by the work group included:

- how do you manage credits under varying production scenarios?
- will sellers carry a margin to account for uncertainties in production?
- should all renewables compete? who pays for the backup required?
- why shouldn't past commitments to hydro receive credit?
- what about customer-owned generation?
- do RPS's create problems if neighboring states do not have them?
- does uncertainty in production levels create considerable risk for investors?
- are RPS's addressed best state by state, or nationally?

Next, Audrey Zibelman with NSP gave a short presentation on renewables. She indicated that as a supplier NSP does not want to have requirements applied to them be different from those applied to other suppliers. For this reason, requirements for renewables should be placed on the sellers. Questions and discussion followed.

Bill Grant with the Izaak Walton League gave a presentation on energy efficiency. He noted that DSM has not raised utility rates or costs in the long term. Yet, there have been significant cutbacks in this area. He believes DSM may not survive in a competitive market with lower energy prices. He also described and commented on six different approaches to maintain investments in energy efficiency. Questions and discussion followed.

Meeting #21 (December 20, 1996)

The Subcommittee on Flexible and Innovative ratemaking presented its recommendations to the work group. There were three proposals: (1) an expedited review process for utility contracts

and service agreements; (2) an expedited review process for non-controversial filings; and (3) a voluntary discretionary rate to allow utilities to flex rates downward, under certain conditions. There was agreement that utilities should not use the discretionary rate to compete for customers outside their assigned service territory. Following the discussion, the work group agreed to accept the report, and to send it on to the Commission after an assigned subgroup of the full work group had worked out solutions to two issues: (1) whether a discretionary rate reduction could be used to compete with a regulated gas utility; and (2) whether a discretionary rate reduction could be used in the case of a Minn. Stat. § 216B.42 service extension.

Frank Whitney with SMMPA made a brief presentation on resource planning and acquisition. He suggested that retail competition may destroy the ability to forecast in the state, affecting the adequacy of supply. Members asked whether wires companies might do some of the forecasting, or whether forecasting might be done at a regional level. The group discussed the issue of whether individual decisions will add up to an optimal overall decision for the state. It was agreed that the state would continue to maintain an interest in the adequacy of supply, and the provision of low cost, environmentally sound energy.

John Dunlop with the American Wind Energy Association made a brief presentation on the economic impact of windpower in Southwest Minnesota. He noted that manufacturing is what creates jobs; therefore, the goal is to create robust manufacturing. He suggested that the types of projects stimulated by regulation will increase or decrease jobs in the region. Members asked about the relationship of jobs and high priced energy. Another discussion centered around whether "economic development" leads to more consumer satisfaction, and whether retail wheeling might have a negative impact on a "genuine progress indicator," designed to measure customer satisfaction.

Meeting #22 (January 10, 1997)

The work group continued its discussion of energy efficiency. It discussed whether DSM is the best way to promote energy efficiency, or whether the reevaluation of DSM programs, and mechanisms to encourage efficiency, is necessary. It noted that DSM may be provided as a competitive service. Also, federal efficiency standards should be adopted by the state, and be better enforced. The group agreed that an important issue is: will the market provide for energy efficiency, or will it fail? A bridge may be needed to help efficiency in a transition from a regulated to a competitive market.

John Hynes with the EQB made a short presentation on environmental regulations. He indicated that changes in environmental review have already been made to address wholesale competition, and not much more change is needed for retail. He indicated environmental review of generation facilities should not be left up to the local level. He suggested federal direction is needed on environmental quality.

Jim Boler, the energy manager for Target and Dayton stores, made a short presentation on stranded costs and the Target/Dayton position on restructuring. He indicated that deregulation is

an opportunity to reduce costs. Energy is their company's second highest cost item. He presented his vision of restructuring in six points. Questions and discussion followed. Mr. Boler indicated he did not like poolco's because they limit Target's ability to negotiate its own power arrangements. The work group closed by discussing future plans for drafting the report on retail competition.

Meeting #23 (January 24, 1997)

MNPUC staff summarized the report of the Subcommittee on Safety, Reliability, and Service Quality. Problems and concerns were raised by the work group. Staff agreed to make changes to the draft, and to accept additional comments. MNPUC Chairman Edward Garvey introduced himself to the work group. David Sparby with NSP made a short presentation on stranded costs. He defined these costs as costs incurred by a utility that will not be recoverable in a competitive market. He believes that these costs should be recoverable. Questions and discussion followed. MNPUC staff asked: (1) how should stranded costs be measured, and (2) who should pay for them?

Steve Corneli with the Attorney General's Office made a presentation on stranded costs. He discussed the proper definition, measurement, and thinking on stranded costs. He noted several problems with sharing the recovery of stranded costs with customers. He suggested that the proper valuation of assets and risks will prevent windfall gains to shareholders. Questions and discussion followed.

Lee Sundberg with the Minnesota Rural Electric Association made a presentation on the level playing field issue. He reviewed the differences between IOUs and cooperatives in terms of size, market share, financial resources, growth, vertical integration, pricing etc. Jack Kegel with the Minnesota Municipal Utility Association continued describing the differences in taxation between IOUs and cooperatives. Questions and discussion followed.

Penny Tvrdik with UtiliCorp gave a brief presentation on the timing of federal, regional, and state changes related to restructuring. She categorized the restructuring activities going on around the nation, indicating that change is occurring rapidly. She noted that as more time goes by there will be less time to prepare. There was a discussion on the usefulness of pilot programs.

The work group discussed its future, agreeing that it would not adjourn but instead break until it receives further direction from the legislature or the Commission. The work group decided that during the legislative session, it may reconvene to look at specific issues like market power.