KEY ASPECTS OF

ELECTRIC RESTRUCTURING AND

THEIR RELEVANCE FOR FLORIDA'S

ELECTRICITY MARKET

Brenda Buchan
Jim Dean
Chris Groom
Barbara Johnston
Kathy Lewis
James McRoy
Ralph VonFossen

DIVISION OF POLICY AND INTERGOVERNMENTAL LIAISON
FLORIDA PUBLIC SERVICE COMMISSION
SEPTEMBER, 2000

TABLE OF CONTENTS

KEY ASPECTS OF ELECTRIC RESTRUCTURING AND THEIR RELEVANCE FOR FLORIDA'S ELECTRICITY MARKET

I. INTRODUCTION

This report analyzes the activities of those states that have begun to restructure their vertically integrated[1] electric utilities and considers how their experiences may relate to Florida's electricity market. The report was prepared by staff of the Florida Public Service Commission (FPSC) and is largely based on information obtained from original source documents such as state statutes, rules, commission orders and, to a lesser extent, trade journals and subscription services. The report is organized according to seven key issue topics and associated policy questions that most states have addressed as they restructure the electric industry. The seven topic areas are:

- market structure
- stranded costs
- electric sales and revenues
- customer issues
- reliability and quality of service
- public purpose programs
- role and follow up of the state public service commission

A supplement to this report is available and it contains a state by state analysis of how each state handled these policy areas. Where the states are in the restructuring process varies greatly. Some states have just begun to restructure while others have had full retail choice for two and half years. Therefore, the manner and level of detail in which these areas have been addressed vary substantially. Moreover, any review of electric restructuring activities must be viewed as a snap shot in time because states are already modifying some of their early decisions on how to proceed and other states are adopting rules and decisions for the first time.

Electric restructuring generally describes the movement along a range of methods to structure the electricity market. At one end of the range is fully regulated monopoly electric services and at the other end are fully competitive generation, metering and billing services. When moving along the range from regulated to competitive, the first step away from regulated is wholesale generation competition. Wholesale generation competition is generally a prerequisite to the subsequent steps in the movement towards retail competition. The electricity market must have a fully competitive wholesale generation market before it can sustain a competitive retail generation market.

---

[1] A vertically integrated utility is one that combines different stages of the production process into one business unit. For example in the electric industry, utilities that own the coal mines, the electric generators, the transmission lines and the distribution system would be vertically integrated.

This paper primarily focuses on the policy implications of moving towards retail competition, however, since Florida does not have a fully competitive wholesale market, it also includes a discussion on policy steps needed to create a more competitive wholesale generation market.

Phrases such as restructuring, deregulation, competition, retail wheeling, retail access, and customer choice have all been used to describe electric restructuring. Regardless of the name attached, what is generally being discussed is the breaking out of generation services into a separate, more competitive segment of the industry while the transmission and distribution parts of the service remain largely regulated monopoly services. In addition, in some states municipal and cooperative utilities are exempted from retail access requirements and continue to offer regulated services within defined franchise areas.

In most states, not all electric utilities generate all the electricity they sell to their own retail customers. Many smaller municipal and cooperative utilities and some investor owned utilities purchase all or part of their customers' electric energy requirements from other utilities at wholesale and resell it to the end use customer. Nearly all utilities purchase power from each other on an opportunity basis when it is cheaper to purchase than to self generate. These kinds of inter company transactions are part of the wholesale power market which is largely regulated by the Federal Energy Regulatory Commission (FERC). This report only peripherally discusses the operations of the wholesale market and the Federal efforts to enhance competition in this market segment. Instead, this report largely focuses on the complexities of bringing competition to the retail electric market.

What is Happening in Other States

As of September, 2000 some 24 states[2] have transitioned or are in the process of transitioning to permit retail choice. Many of these states were initially motivated to restructure as a means of achieving lower rates and enhancing economic growth. Higher than average electric rates appear to be the primary driver in these states. However, more recently several lower cost states such as Virginia, Montana, and Oklahoma have passed restructuring legislation. Most states experimenting with retail restructuring are using a phase-in system to allow some percentage of retail customers to select from alternative electric generation providers over a window of several years. In a few states, such as California, Rhode Island and Massachusetts, all customers were allowed to choose their generation supplier at once on a date certain. Transmission and distribution services (poles, lines, substations, meters, and monthly billing) will continue to be provided by a regulated utility. Only the generation portion of electric service will be subject to customer choice. However, for the

[2] The 24 states are: Arizona, Arkansas, California, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, West Virginia.

most part, each of these three elements of service -- generation, transmission, and distribution -- will be unbundled and priced separately on a customer's bill. A few states are exploring the possibility of making metering and billing services an unbundled and a competitive part of electric service.

While it is too early to do a full assessment of the beneficiaries of electric restructuring, because only two and a half years have passed since the first state initiated retail competition, the evidence now available indicates that large industrial and commercial customers are the ones most likely to change generation providers if given retail choice. These customers appear to have the most to gain from restructuring, since their size and business experience give them the ability to negotiate for lower rates or to install self-service generation. They also appear to represent the primary market segment to which merchant plants, brokers, and other alternative generation suppliers would most likely target. Small-use residential and commercial customers are less likely to have meaningful alternative generation supply choices in a competitive market and may be left paying higher costs. In fact, recent experience with deregulated markets in California, the Midwest, and New York indicate that electric prices may not have declined with electric restructuring and are certainly more volatile than under a regulated model.

Florida's Situation

Florida is rather unique in many aspects of its electric industry. Its utilities largely serve residential customers. Based on 1998 data, approximately 87 percent of all electric energy is sold to residential and commercial customers, with another 3 percent sold to other businesses such as farms. Industrial customers account for slightly more than 10 percent of sales. Eighty-eight percent of all accounts on record as of 1999 are residential accounts. In addition, Florida is a rapidly growing state with its total electric summer demand growing at 3.2 percent per year during the 1990s. This represents a need for over 1000 megawatts of new generation each year.

Florida's geography also makes it unique, because being a peninsula limits Florida's ability to import power from surrounding states. Florida's only electrical interconnection is with the Southern Company and that interface will permit approximately 3600 megawatts of imported electricity, if the power is available, and if the transmission system is operating at is optimal level. For the summer of 2000 only about 6.4 percent of the peak demand is firm, contracted from imports outside the state. This geographic feature dictates that Florida must rely on generation resources within the state to ensure the reliability of service to its citizens. Toward this end, the FPSC has recently approved a stipulation with the investor owned utilities (IOUs) that they will build and maintain at least a 20 percent mandatory reserve margin.

Despite this rapid growth and limited import capability, Florida's electric utility industry has provided reliable service at competitive prices. Florida's rates have been stable for more than a

decade.[3] Adjusting for inflation, the price of electricity in Florida has actual declined by 22 percent since 1984. Compared to prices around the nation, at 7.1 per KWH, Florida's electric rates are slightly above the national average of 6.7 cents per KWH. This is remarkable given Florida has little low-cost hydropower, and all generating fuels must be transported very long distances by rail, pipeline, or water.

Restructuring Developments in Florida

Over the last few years the Florida Public Service Commission has been monitoring what is happening in other states with respect to restructuring. This instant report is a continuation of this effort. Florida has not initiated retail choice, it would take formal legislative authority for retail choice to be made available here. During the 2000 legislative session, a bill was considered to set up a study commission to examine the energy situation. While the bill did not pass, on May 3, 2000, Governor Jeb Bush established by executive order the Energy 2020 Study Commission. This seventeen person commission was charged with studying all aspects -- including retail access and wholesale competition -- of Florida's future energy needs and making recommendations by December, 2001.

With respect to Federal activities, the Florida utilities, industry stakeholders, and FPSC staff have been working to develop a formal filing in response to the Federal Energy Regulatory Commission's (FERC) Order 2000. This order requires all FERC jurisdictional utilities to either file a plan by October 15, 2000 to establish a Regional Transmission Organization (RTO) whose function is to independently operate the transmission systems; or, if a filing is not made, then each utility must explain why they are not making such a filing. At this time, the Florida utility share holders are moving towards developing a for profit transmission company into which some utilities will sell their assets and others will lease transmission assets to be operated by the independent transmission manager.

Florida has long encouraged a robust, active wholesale market. As early as 1978, the utilities established a broker system to make short term power sales to each other when it was cheaper than generating their own energy. During the 1990s the utilities contracted for over 2500 MWs of firm capacity from cogenerators to supply power directly to the purchasing utilities.

Then in 1999 the FPSC issued a need determination certificate to permit Duke Energy LLP to construct the first merchant power plant to file under the Florida Power Plant Siting Act. The investor owned utilities challenged this decision and the Florida Supreme Court determined that Duke Power was not an applicant as defined under the Siting Act and therefore could not be issued a need certificate. The several parties in this case, including the FPSC, have asked the Supreme

[3] Florida's electric rates have been stable primarily due to stable fuel prices, however, with the recent volatile prices of fuel oil that may soon be changing.

Court to reconsider its decision. Despite the obstacles imposed by the Duke decision, a number of other merchant power plants that are not subject to the Power Plant Siting Act are either operational or under construction in Florida.

Future Activities

As Florida studies electric restructuring, the 24 pioneer states that have already embraced electric restructuring provide a valuable laboratory to examine what works and what pitfalls to avoid. For example, it is clear based on the experiences around the country thus far that policy makers should lower expectations about competition substantially reducing retail rates in the short term. Moreover, few states have undertaken vigorous evaluations to see if the benefits of competition are being realized. All of this monitoring, evaluating and updating of information requires that reports such as this one be capable of incorporating the most recent information into them. A hard copy report such as this provides a valuable snapshot in time of the process and is a quick reference to what has already been done. However, it is recognized that the electric industry is changing rapidly and the restructuring process is dynamic, thus these states will need to be revisited over time to see how electric restructuring is evolving.

II. KEY ASPECTS OF ELECTRIC RESTRUCTURING

For each state that had already embraced electric restructuring, staff sifted through available information to see what major issues emerged and what actions might be applicable to Florida, should Florida follow the path of electric restructuring. The major issues were identified and are discussed here. These issues are:

1. Market Structure and Power
2. Stranded Costs
3. Electric sales and revenues
4. Customer Issues
5. Public Purpose Programs
6. Reliability and Quality of Service
7. State Public Utility Commission Role and Follow-up Programs

1. MARKET STRUCTURE AND POWER

Market structure is a broad term referring to the role and responsibilities of participants in the electricity industry and the rules that govern their behavior. Historically, the electricity market has been characterized by a vertically integrated monopoly market structure, where the utilities were granted franchise areas with the exclusive right to provide electric service. In exchange for this monopoly right, almost every aspect of their business was regulated. The state public utility commissions (PUCS) set the operating standards for electricity service, authorized the utilities to invest in new facilities such as power plants, transmission lines or other equipment needed to meet their customer service obligations, and set the rates that customers paid for electricity service. Today, the historical market structure for electricity service is changing.

Driving electric restructuring nationwide is new technology, which makes it economical for competitors to provide electrical generation services, and the legal authority given to large industrial users of electricity to bypass (leave) the local utility. Large industrial users of electricity account for a significant portion of each public utility's revenue base, thus if industrial customers leave the network it can be financially devastating to the local utility and cause significant increases in rates to remaining customers. Further, if the industrial customer is large enough, its departure may even result in idle generating capacity for the local utility. In many states the rates the industrial class pays for electricity subsidizes the rates the residential class pays. In other words, the industrial businesses pay higher electric rates than are required in order for the utilities to charge residential customers less.

Due to technology and regulatory changes, states are taking a close look at their electricity market structure and implementing changes. For instance, electric service has been offered

traditionally as a single packaged service; however, with the prospect of industrial customers purchasing power from other sources, or installing self-generation, some state PUCS are requiring utilities to unbundle their service package. Electric service is historically offered on a bundled basis, meaning that generation, transmission, and distribution services are provided as a single electric service package. By unbundling electric service, the various services that make up traditional utility service are separated into discreet, separately-priced components. Unbundling allows the customer to select a different supplier or source for generation services. Due to the economies of scale inherent in the transmission and distribution networks, as well as potential market power issues, these services will most likely remain under some form of regulation for the foreseeable future.

Under electric restructuring the electric utilities will be treated as though they have three distinct services:

1. Distribution of electricity and other services to end users
2. Transmission of electricity along high voltage transmission lines
3. Generation of electricity

In the past, each of these services has been provided by a single utility company in a given service territory, subject to regulatory oversight by the state PUC and wholesale transmission oversight by the Federal Energy Regulatory Commission (FERC). In the future, these services could be provided partly by the existing utility company and partly through new competitive businesses. **Only one of these services, the generation of electricity, is being opened up to retail competition.** Customers will be able to shop for power from competing suppliers, but electricity will continue to be delivered to their homes and businesses by traditional utility companies over the same distribution lines.

Of the states that have adopted electric restructuring, nearly all are proposing the following electric industry structure; customers will be able to select an electric generation supplier who will deliver electricity over the transmission system, usually through some form of regional transmission organization (RTO) or independent system operator (ISO), and onto the incumbent distribution company. Separated into parts the services are:

DISTRIBUTION SERVICES: For distribution services, there will be no delivery change and service will be provided by a regulated electric company subject to the jurisdiction of the state utility commission. The distribution/customer service function, which presently encompasses moving electricity through a geographic service area to customers, maintaining electrical lines, and providing metering and billing services, is expected to remain a monopoly activity at this time. However, some services now performed by the distribution company, such as metering and billing, may be "unbundled" and provided by other private businesses.

TRANSMISSION SERVICES: The concept of opening the nation's electrical transmission network enables all participants in the generation market equal access to transmission service, as long as capacity is available. The Energy Policy Act of 1992 gave FERC authority to order utilities to provide transmission access to third parties in the wholesale electricity market. Order 888 was

issued by the FERC in April of 1996 mandating open access to the transmission network. Thus under electric restructuring, transmission services will remain under the Federal jurisdiction of the FERC. However, some portion of transmission dedicated to retail customers may remain under state jurisdiction. For the most part, the FERC sets the transmission rate for wholesale transactions. However, there are a number of outstanding issues dealing with what portion of transmission facilities dedicated to retail customers should be classified as jurisdictional to the FERC and what portion is jurisdictional to states. The FERC established a seven-part test in Order 888 to set standards for making such determinations. Orders 888 and 889 were challenged by representatives of almost every segment of the energy market: state utility commissions, incumbent energy providers, investor-owned utilities, municipals and co-ops, as well as consumer groups. After the FERC issued three rehearing orders, it denied further rehearing. Numerous parties, including state commissions, then filed challenges of the FERC orders in various courts. Those challenges were consolidated and transferred to the U.S. Court of Appeals for the District of Columbia Circuit Court (Court). The decision issued by the Court on June 30, 2000 upheld Orders 888 and 889 in all major respects. The state commissions and other parties filed a Petition for Rehearing on July 24, 2000, which the Court denied.

In addition to asserting federal jurisdiction over all transmission, FERC Order 888 states that transmission-owning utilities must charge competing utilities the same amount to use/traverse their transmission system as they charge/impute to themselves. Order 888 does not require utilities to place their transmission holdings into a separate company, but it does require them to maintain separate accounting books. This is called **functional unbundling**.

To ensure fair and reasonable access to the transmission network nationwide, FERC and many states are encouraging the development of some form of **regional transmission organization (RTO)**. A regional transmission organization is any of several forms of an entity that manages, operates, or owns all or part of an electric supply system. In general, a **RTO** is a voluntarily-formed entity that ensures comparable and non-discriminatory access by electric generators to regional electric transmission systems. RTOs are governed in a manner that renders them "independent" of the commercial interests of power suppliers who also may be owners of transmission facilities in the region. The RTO assumes operational control of the use of transmission facilities, administers a system-wide transmission tariff applicable to all market participants, and maintains short-term system reliability. Some RTOs may also be responsible for long-range planning.

The RTO may be different or have separate management from the owners of transmission and/or generation. RTOs may take the form of several types of configurations which include Independent System Operators (ISOs), Independent Transmission Companies (ITCs) , Independent System Administrators (ISAs) and Transmission Companies (Transcos). The major difference between the first three RTO forms mentioned (ISO, ITC, and ISA) and the fourth form (Transco) is that a Transco is generally driven by a profit motive incentive and a pricing regime that can accommodate investment risks. Transcos are accountable to shareholders rather than to the energy market as a whole. As of this date, the FERC has yet to grant full approval to an RTO Transco proposal.

In general, non-transmission owning municipal and rural cooperative electric utilities have expressed concerns about the transmission routes available to them and the lack of coordination in regard to transmission interconnection and planning. One particular complaint with the current transmission operation is the "pancaking" of rates for the purchase of generation from remote facilities. **Rate pancaking** occurs when a municipal or rural cooperative distribution company contracts with a generating facility some distance away and must rely on several different transmission-owning utilities to carry that power to them. Each utility could charge a different price for transporting that power across their transmission lines and those charges are additive, or stacked on one another like pancakes. The sum of the charges makes transactions more expensive.

GENERATION SERVICES: Initially, only the generation portion of electric service will be competitive. Power plant owners will have the opportunity to sell electricity to customers with whom they have negotiated sales contracts, to sell electricity into the open market, or to sell to "aggregators," which are entities that combine many small customers to form a "buying pool."

Historically, there has been a ***wholesale*** market for electrical generation. The wholesale market consisted of ***other utilities*** that needed additional power and some cooperatives or municipalities that did not generate their own power supplies. With electric restructuring, retail competition can be introduced in generation and the ***retail*** customer, the end-user, will be able to select from where they purchase their generation service. Restructuring will allow end-use customers to select generation service from either the generating utility or from an aggregator.

Fourteen states that have embraced electric restructuring are requiring utilities to functionally separate their generation facilities from their transmission facilities in order to assure an adequate level of competition. The electric utilities must implement this separation through either divesting the generation facilities outright, or by placing them into a separate subsidiary. Another four states (California, New Hampshire, New York, and Rhode Island) are requiring full divestiture, and two other states (Maine and Texas) are requiring their utilities with more than 30% or 20% market share respectively to divest down to 30 or 20 percent. Divestiture can occur voluntarily as a business decision driven by the market or by a government mandate that forces a utility to sell certain assets to diminish real or perceived market power.

The concern with leaving the generation and transmission facilities owned in a vertical fashion by one company is that the utility could confer a market advantage to their generation facilities if they controlled both the energy source and the facilities to move that energy. For example, a utility could block a competitor from using its transmission network to deliver lower-cost energy to a customer in order to sell its higher priced power. In addition, many states are allowing electric generating facilities to be constructed by companies that are not utilities. Competition among rival generators of electricity will set the price for the generation component of a customer's electricity bill. The role of regulators will be to make sure that competition is allowed to succeed and that no firms can dominate the market and control prices. Since Florida has one utility with a greater than 30% market share, policy makers should consider whether that utility should be ordered

to divest completely, to divest down to below some designated percentage, or just to functionally unbundle.

In order to further reduce the potential of one utility controlling the generation market, a number of states are exploring the notion of incorporating a mandatory **power exchange (PX)** as part of the market structure. A power exchange is a competitive market mechanism for the purchase and sale of electricity where supplies are offered and solicited on a very short-term basis, such as hourly. This results in an hourly market price of power regardless of whether the transactions are commitments for a short or long duration. A PX is where the financial transactions and settlements take place for energy. The PX handles the financial part of energy while the RTO handles the operational side of the transaction. Power exchanges are required to be governed by a body that is independent from, but representative of, all market participants and are usually subject to federal regulation.

California is the only singular state in which rate payers incurred the cost of setting up a power exchange, while multi-state power exchanges do occur around the nation. California's law establishing the power exchange required utilities to purchase all of its power through it. While that exchange offers forward markets, where contracts for blocks of power can be negotiated well in advance of expected need, it is still a commodities market. Much of the power bought and sold is in its spot market, which is extremely volatile. The spot market in California, which should account for only about 2 percent of power bought and sold, accounts for approximately 25 percent. Given the volatility of spot markets and the associated costs, setting up a state run power exchange does not appear to be the best or even a necessary option. However, if an independent power exchange were to develop, Florida should not mandate its use.

While moving from no competition to wholesale competition to retail competition each state may have a slight variation on how they handle divesting generating facilities. Most states view the generation portion of electrical service as becoming completely unregulated except for issues involving customer protection and information requirements.

UTILITY SPECIFIC SETTLEMENT AGREEMENTS

A few states, but not many, are requiring all the utilities to be consistent regarding rate reductions, selling off assets, stranded costs, etc. It appears that more states have established a basic framework for electric restructuring yet are taking into consideration the unique characteristics of each utility. A significant number of state PUCS are ordering utilities to provide them, by a date certain, a proposal on how the utilities wish to restructure their operations. The PUC, in turn, will give careful consideration to a utility's proposal before imposing specific criteria, on a case-by-case basis, within **settlement agreements**. For example, the controversial issues of rate reductions, divestiture of assets, and stranded investments are frequently determined on a utility-by-utility basis. It would appear that using settlement agreements in Florida would be an attractive option, as it will take into consideration each utility's customer base, and it might avoid a lengthy Commission proceeding.

UNBUNDLING CUSTOMER BILLS

In order for customers to understand the change from purchasing electric energy as a package and paying a single bill to moving towards unbundled electric services, customers' bills need to be unbundled and clearly marked. Nearly all states, whether they have adopted electric restructuring or not, are requiring the components of electric service to be unbundled and priced separately. A customer will have a power charge, a transmission charge, a distribution charge, and perhaps a meter reading and billing charge all listed individually on the bill. Other potential charges include public purpose program surcharges (energy efficiency, renewables, low income), taxes, and competitive transition charges. The **competitive transition charge** (CTC) is a fee charged to recover commission approved stranded costs.

RATE REDUCTIONS

Many states included a rate reduction provision with their restructuring requirements. In an effort to force competition to occur, some states legislated the amount of the reduction: California set a goal of around 10%, others around 5%, and others were silent, yet required some form of rate adjustment within their settlement agreements. These reductions are from the base rates, not fuel charges, and other expenses that fluctuate and are recovered separately. It appears that there is little economic justification for these reductions, with the exception of a few utilities that were overearning. Instead, the reductions were motivated either by a desire of policy makers to allow residential customers to see a reduction in base rates up-front, or to mitigate the new Competition Transition Charge that some states imposed to cover the cost of electric restructuring and stranded cost recovery. Imposing a rate reduction to accompany electric restructuring with little or no justification does not appear reasonable. Further, customers need to be educated that rate reductions may not accompany retail choice.

PHASE IN OF ELECTRIC RESTRUCTURING

Most states are allowing retail access using a phase-in plan that gradually allows customers access to competitive power providers over a two to five-year window. There are many different ways to phase-in electric restructuring. These range from allowing the industrial users to have the first choice in selecting an alternative energy provider to allowing residential customers to have the first choice. In contrast, instead of selecting who gets to choose first based on customer class, the phase-in can be accomplished by setting aside 25% of all customers at random to convert, then follow-up every six months with another 25% until all customers have chosen. A variation on that method is to allow anyone who wants to select a new generation provider to submit their name and a lottery is held to select the first 25% to convert. A few states have set a date certain for all customers to choose at once. Different states have chosen different methods.

Given the confusion that accompanies the change to retail generation competition, there is some wisdom in phasing it in so that the utilities will be able to handle the increase in consumer services calls and inquiries. Allowing the industrial and business customers to have the first choice seems reasonable since they are the most sophisticated users and that phase will go the smoothest. The utilities can learn from that experience and will be more prepared to deal with the problems associated with the residential customers during the second phase.

DEFINING MARKET POWER

Due to its importance in determining how fully competitive markets should operate, market power should be carefully analyzed. Market power is defined as the ability of a supplier to profitably raise prices above competitive levels and maintain those prices for a significant time period. Market power exists when a single seller can influence prices. However, to profit from the ability to raise prices, the firm must be able to prevent competitors from entering or reentering the market once the price has been raised.

The economics and antitrust literature identifies two types of market power, horizontal and vertical. **Horizontal market power** is exercised when a firm profitably drives up prices through its control of a single activity, such as electricity generation, where it controls a significant share of the total capacity available to the market. These assets give the utility an advantage in a deregulated market to establish monopolistic pricing.

Vertical market power is exercised when a firm involved in two or more related activities, such as electricity generation and transmission, uses its dominance in one area to raise prices and increase profits for the overall enterprise. Electric utilities that are vertically integrated and provide all aspects of electrical service (generation, transmission, and distribution) under a long-standing monopoly environment, could easily exercise market power. The incumbent utilities' ownership of generation and transmission facilities in a franchised service area increases that probability.

Several federal organizations, such as the United States Department of Justice (DOJ) and the Department of Energy (DOE), pay close attention to market power and have developed several measures of market power. The Herfindahl-Hirschman Index is a well-accepted measure of market power used by the DOJ and DOE. When an industry contains only one firm (a monopoly), the index attains its maximum value: 10,000. The index's value decreases with increases in the number of firms in the market and increases with rising market share inequality among any given number of firms. A consensus has not been reached with respect to when a market is or is not competitive. Any choice of threshold is likely to be arbitrary. While no consensus has been reached, the DOJ uses the Herfindahl index to characterize markets and to specify treatment of proposed mergers occurring within certain index boundaries. The DOJ does not challenge mergers with post-merger indices below 1,000 points since in this index range, the market can be considered competitive. The DOJ characterizes firms as a dominant firm when they have more than 35% of the market share.

Incumbent generation utilities that possess market power have a number of ways they can wield that power. In markets where concentration is high and transmission constraints impede imports of power from distant generators, incumbent generation utilities can employ a simple market power bidding strategy to cut output and increase net revenues from generation by driving up the market's price of electricity. The exploitation of market power can have a significant impact on wholesale power prices, which in most regions is the largest component of electricity prices paid by consumers. Another example of how an incumbent can control prices in an area by controlling the amount of capacity available was observed in the United Kingdom after they restructured their electric market. In the UK, the two largest utilities retired significant amounts of their generating

capacity as new firms entered the market; thus, the incumbents limited the net increase in capacity within the power pool.

Oddly enough, the exercise of market power by the dominant supplier may be welcomed rather than opposed by its existing competitors. In some instances, competitors can profit from the higher prices resulting from the withholding of capacity by the firm that exercises market power without having to idle their own capacity to achieve those prices. The competitors may increase their output in response to the dominant firm withholding capacity. Regulators should not rely on competitors to identify or address the existing market power.

It comes as no surprise that state regulators are looking at a number of different approaches to ensure that an incumbent does not exercise market dominance. At a minimum, most states are requiring functional unbundling of generation, transmission, and distribution services. Several states are requiring full divestiture of generation assets for those companies who want to make direct retail sales, and several utilities have voluntarily agreed to divest some portion of their generating assets.

An additional approach to mitigating market dominance is the requirement that transmission control and system reliability functions be performed by a regional transmission organization (RTO). As discussed previously in the transmission section, the RTO is essentially the electric grid controller and is responsible for ensuring operational reliability of the grid. Further, the RTO controls which transmission paths are available to carry the power. These functions have been traditionally performed by regulated utilities. Whoever manages system operations or dispatch has inordinate power to affect prices by limiting transmission access or restricting generation. To prevent such undue market influence, the FERC in Order 2000 suggested, but did not require, that utilities form or join existing RTOs or make a filing as to why they had not. RTOs will not be affiliated with utilities and are supposed to provide fair and nondiscriminatory access to the transmission system for all market participants.

Stimulating the entry of new competitors into the market is yet a third important approach to limit market power and also limit the ability of dominant utilities to sustain prices above a competitive level. The possibility of rapid entry by new competitors can deter the exercise of market power by an incumbent firm that dominates its market. Entry attracted by the above-normal profits associated with high prices can lead to overcapacity and low-level profits following entry. The threat of entry encourages competitive behavior, and the actual entry of competitors reduces market concentration.

In March of 2000, the Department of Energy's Office of Policy released a paper titled *Horizontal Market Power in Restructured Electricity Markets* which identified multiple ways to address market power. It states that, while the preference for regulatory bodies is to require structural separation, a variety of regulatory options are available that fall between direct regulation of prices and divestiture. These options include:

Market monitoring Absent the exercise of market power, competitors have an incentive to minimize outages during periods of peak demand and prices, in order to maximize profits. Competitors could profit from the higher prices resulting from the withholding of capacity through plant outages by the firm that exercises market power. The outage experiences and bid strategies of generators with market power could be monitored, with appropriate penalties applied if evidence of market abuse is uncovered.

Creation of a bidding trust for certain assets Generators can agree to place some or all assets in a "bidding trust" to mitigate market power.

Contracts for differences and call options Generators with market power could provide an RTO or other designated recipient with call options that are "in the money" if prices rise above a preset threshold. This can reduce those generators' incentive to withhold capacity.

Requirements for transmission upgrades Generators could be required to upgrade transmission under their control to mitigate their market power in load pockets where they operate.

Interconnection requirements Generators could be required to streamline access to transmission lines or plant sites under their control to reduce barriers to entry.

Requirements to offer real-time curtailment prices to end-use customers A generation owner with market power could be required to offer its end-use customers real-time market prices for load curtailment. This would mitigate the price effect of any effort to withhold capacity.

Limitations on variance of bid prices Under competition, bids for running individual units should not vary with market conditions (although market prices will). To mitigate market power, a generator with market power should agree to limited bands for bidding each unit.

Denial of market-based rates Where allowed by law, regulators could revert to cost-based rates in instances where they have reason to believe that incumbent generators are exercising market power. However, denial of market-based pricing for electricity generation risks jeopardizing the benefits in terms of new products and services and greater incentives for efficiency that competition can bring to electricity customers.

ELECTRIC RESTRUCTURING IN FLORIDA

As mentioned earlier, electric restructuring is being driven by new technology, which creates new generation providers, and the threat of large industrial users bypassing the local electrical utility. In many states throughout the nation, large industrial users of electricity account for a significant portion of each public utility's revenue base. Thus, if industrial customers leave the network, it could be financially devastating to the utility and its ratepayers. In many states, industrial electric rates are above cost in order to subsidize the rates the residential class pays. This is not the case in Florida, it has been Florida's policy to set rates to achieve parity.

In Florida, the industrial class provides less than 7% of the total revenues generated from electricity use, and the industrial and commercial classes, combined, represent less than 40% of the total revenues generated by electricity based on 1998 data. Because Florida wants to encourage development of a strong commercial and industrial base within the state, commercial and industrial electric users are offered rate concessions to keep them on the grid. Thus, Florida is not receiving inordinate pressure internally from its industrial customers to restructure.

Another characteristic of Florida that makes it different from other states is that it is a peninsula and somewhat isolated from most national electric grids. There is limited power flows between Florida and other states. The total transmission interface with the Southern Company to Florida's north, is 3600 MWs under optimal conditions. A portion of this capacity is committed to firm imports into Florida. Thus, there is little excess capacity for bulk power transactions into and outside of the state.

Given Florida is a peninsula, virtually all the power needed is produced within its boundaries and a small but important amount of power is imported from outside the state. The primary Florida network is connected to the Southeastern Reliability Council (SERC) in two locations. There are two 500 KV lines located at the northern portion of Florida and several 230 and 69 KV lines located in the northwest portion of the state. The portion of Florida west of the Chattahoochee River is part of the SERC grid covering all or parts of 13 states in the Southeastern United States (Georgia, Alabama, Mississippi, Louisiana, Arkansas, South Carolina, North Carolina, Tennessee, Virginia, Florida, Kansas, Oklahoma, and Missouri) and is predominantly owned by the Southern Company.

GENERATION MARKET POWER

As mentioned earlier in the section on market power, Florida should be concerned with horizontal and vertical market power. Horizontal market power is a concern in restructuring the electric generation market. There are over 22 separate utilities that own electric generating facilities in Florida. Of those, only one, Florida Power & Light, is a dominant firm based on the Department of Justice's standards. Florida Power & Light (FP&L) has a 39% market share which is 4% points higher than the 35% market share the DOJ characterizes as a dominant firm. In addition, FP&L has a Herfindahl-Hirschman Index of 1,549. The next largest utility is Florida Power Corporation, and it has less than 18% of the generation market.

Several states that have adopted electric restructuring have dominant firms with up to 90% of the market share. In those instances, the state required the utilities to fully divest themselves of their generating facilities. Other states that do not have a generation market characterized by one or two highly dominant firms are more flexible with their treatment of generation facilities. Like those states, Florida may wish to consider if FP&L should be required to take some action to remove its market power. Several options are available to policy makers, for example FP&L could be required to fully divest itself of its generating facilities, or it could divest enough of its facilities to take it below the DOJ's standards of what constitutes a market power, or finally FP&L could be required to make a proposal to the FPSC on how it will reduce its market share, either through separate subsidiaries or the sale of some or all of its generation facilities in Florida.

PROPOSED TRANSCO

The second type of market power that Florida should be concerned with is vertical market power. In order to specifically address this concern, the FERC was given authority to order utilities to provide transmission access to third parties in the wholesale electricity market. The FERC has not ordered the utilities to form Regional Transmission Organizations (RTO), yet they strongly encourage their voluntary formation. Some states have ordered the formation of RTOs or Independent System Operators (ISOs), while others, like the FERC, have encouraged their states to pursue an RTO and retain authority to force a government- run ISO if they do not. Even though the FERC retains primary jurisdiction over transmission facilities, some portion of transmission dedicated to retail customers may remain under state jurisdiction.

In response to the FERC's orders, the utilities in Florida have been holding discussions on the formation of a transmission company (Transco). On March 9, 2000 Florida Power & Light proposed divesting (selling off) their transmission facilities with the intent of creating a for-profit Transco. The second largest utility, Florida Power Corporation, has committed to join an RTO as part of their pending application for approval to merge with Carolina Power & Light. The development of this Transco will purportedly eliminate the pancaking of rates charged to small utilities who purchase power from remote facilities.

The Florida Reliability Coordinating Council (FRCC), on of the regions of the North American Electric Reliability Council (NERC), will set the reliability standards for the Transco. The transmission siting responsibility has historically been within the state's jurisdiction. According to the proposal, a Transco has the incentive to be:

(a) cost efficient, as it will own or control, through leases, all transmission facilities;
(b) service focused, thereby improving network customer service;
(c) customer focused, by expanding network facilities for customer and market needs; and
(d) effective in insuring reliable service through one owner/operator.

In addition, because a Transco is a for-profit entity, it has the ability to raise capital for construction of new transmission assets to improve system access and system reliability. The Transco, as proposed, will be an investor-owned transmission company that is independent of market participants. Additionally, all the Transco's board members and employees will be independent of market participants. The Transco will act as the Security Coordinator and have authority for maintaining short-term reliability. Control area operators will continue to be responsible for real time operations under the direction of the Security Coordinator.

The Florida Transco proposal states that it will administer an open access transmission tariff to:

(a) eliminate the pancaking of transmission access charges;
(b) minimize transmission cost shifting; and
(c) recover the revenue requirements of transmission owners.

One proposal would have the rates based on the zone where the power is delivered or exits the Transco and will be based on the revenue requirements of the transmission owner providing service in that zone. The Florida Transco will operate a single Open Access Same-Time Information System (OASIS) for all transmission facilities under its control. A further discussion on OASIS follows.

Not all the details of the proposed Florida Transco have been worked out as yet. Regulators are especially concerned with reliability. With a privately-owned for-profit Transco, will there be a market incentive to cut back on maintenance and operation budgets in order to keep stockholder profits high? How can the state be assured that the Transco Board of Directors will maintain a sufficient amount of operation and maintenance budget to ensure no interruptions in power? What will be the RTO's measures of reliability, and who will be monitoring those measures? What are the costs and expected benefits to consumers?

FL-OASIS

FERC Order No. 889 established a code of conduct intended to functionally segregate the transmission operations and merchant functions of utilities and mandated that transmission access information for energy transactions be displayed on electronic bulletin board systems called Open Access Same-time Information Systems (OASIS). The Florida Transco proposal states that a single OASIS for all transmission facilities will be under the Transco's control. The OASIS is an electronic information system that allows users to instantly receive data on the current operating status and transmission capacity of a transmission provider. Examples of the type of information that might be available on an OASIS include: availability of transmission services; hourly transfer capacities between control areas; hourly amounts of firm and non-firm power scheduled at various points; load flow data; current requests for transmission service; and secondary market information regarding capacity rights that customers wish to resell.

Currently, in peninsular Florida, FL-OASIS is used, which is affiliated with the Florida Reliability Coordinating Council. The FL-OASIS is an Internet site with an automated program that schedules transmission delivery on the Florida grid. A utility will contact the FL-OASIS and provide the amount of power it wants to deliver, the length of time it will deliver it, the starting time, and the distance it must travel. The FL-OASIS responds to the utility regarding the price it costs to send the power and whether the time is acceptable. All the utilities in Florida have a stake in FL-OASIS, and all market participants have access to it. The FL-OASIS is different than an energy broker in that power is purchased by utilities 24 hours in advance, based on expected needs and the weather. However, if they need to change that forecast and buy additional power, they can schedule the purchase of power through the energy broker system one hour ahead of the time they need it.

CONCLUSION

Florida has not rushed into electric restructuring for several reasons. First, in comparison to the national average Florida's electric rates are reasonable, and second, rates across customer classes are fairly allocated, based on the actual cost to serve each customer class. To Florida's

benefit it has been able to watch other states restructure and learn from their good decisions and from their mistakes.

Before any electric restructuring is undertaken in Florida, policy makers should first look at the **wholesale generation market**. A form of wholesale generation already occurs in Florida, but it could not be characterized as competitive. To be considered a competitive market it would have the presence of the following three characteristics:

(1) A large number of independently acting sellers;

(2) Each firm would produce such a small amount of the total output that increasing or decreasing its output would have no perceptible influence upon total supply or product price; and

(3) No significant obstacles -legal or technical- exist to prohibit new firms from coming into the market.

Currently, there are 22 generating utilities in peninsular Florida and out of the 22, two produce 57% of the electricity generated. One utility, Florida Power & Light (FP&L) based on the Department of Justice's standards, has a 39% market share which is 4% points higher than the 35% market share the DOJ characterizes as a dominant firm. The next largest utility is Florida Power Corporation, and it has less than 18% of the generation market. **Market power** in the wholesale generation market remains a major concern in Florida, due to the requirement of native generation, limited transmission import, and two incumbent utilities that serve over half the load in the state.

Further, Florida could not shift its reliance from domestically produced power to power produced in another state. Florida has **limited import capabilities**. This is due to the physical limitations of the grid and because Florida, while it has two states that border it to the north, only has significant transmission links to one state- Georgia. Thus, Florida is heavily dependent on the energy that is produced within the state.

Several states that have adopted electric restructuring required their investor owned utilities to fully divest themselves of their generating facilities. Other states that do not have a generation market characterized by one or two highly dominant firms were more flexible. Policy makers in Florida may wish to consider if FP&L should be required to take some action to remove its market power. Several options are available to policy makers, for example FP&L could be required to fully divest itself of its generating facilities, or it could divest enough of its facilities to take it below the DOJ's standards of what constitutes a market power, or finally FP&L could be required to make a proposal to the FPSC on how it will reduce its market share, either through separate subsidiaries or the sale of some or all of its generation facilities in Florida.

In addition to market power, the other constraint to Florida having a robust competitive wholesale market is that entrants wishing to come into Florida have difficulty doing so. This barrier

to entry is caused by the problems associated with new siting and constructing generation and transmission facilities in an environmentally sensitive area.

The **Florida Power Plant Siting Act (PPSA)** presents two legislative barriers in Florida that inadvertently impede the development of a vigorous generation market. The first barrier is the limited definition of an eligible applicant contained within the PPSA. As interpreted by the Florida Supreme Court in the power plant need determination joint request of the Utilities Commission of New Smyrna Beach and Duke Energy New Smyrna Beach Power Company (Duke Decision), the PPSA only applies to utilities serving retail customers and the siting of any new steam or solar plant with capacity over 75 MWs. This decision gives retail-serving utilities a de facto monopoly over construction on any plant over 75 MWs. If Florida is going to gain any benefit from electric restructuring it must remove this obstacle to permitting and siting new generation to assure an adequate supply of energy for a robust generation market. Given the Duke Decision, the Florida Power Plant Siting Act and Transmission Line Siting Act will need to be modified to permit "merchant plants" and new transmission lines to be permitted and constructed here.

The second barrier requires that new generation capacity must be built to exactly match load growth plus reserve. This requirement was to ensure that customers of regulated utilities only paid for capacity that was needed to meet immediate and identifiable future generation needs. While this concept provided cost protections for customers of monopoly retail serving utilities, it is unnecessary when applied to independent energy suppliers which have no captive customers. These suppliers would build new facilities at their stockholders' risk. This barrier should also be removed to stimulate the construction of generation facilities in Florida.

An impediment to the development of a vigorous generation market identified by independent energy suppliers is the requirement that Florida utilities must maintain a **15 to 20% reserve margin**. The utilities are mandated to build and have available this amount of excess reserve to accommodate extreme changes in demand. With this requirement, the need and ability for merchant plants to enter the generation market and provide that capacity is reduced. However, the elimination of the requirement would jeopardize the reliability of the energy supply.

Before Florida undertakes a major effort to restructure the electric industry in order to embrace retail competition, policy makers should first give serious consideration to restructuring the electric market to stimulate a robust wholesale generation market. Then, afterwards, implement those steps to pursue a retail generation market.

Over the next year, Florida should give careful consideration and look closely at the costs associated with any regulatory action. Due to its unique characteristics and previous favorable policy decisions, Florida may be in a better position than some states when faced with issues such as:

(a) Independent Service Organizations,
(b) divestiture,
(c) stranded cost recovery, and

(d) Power Exchanges.

Premature regulatory actions could be costly to the state and in turn, to electric ratepayers. Instead of seeing a reduction in electric rates, customers may end up paying more due to electric restructuring expenses. Florida's goal should be to create a regulatory environment that will allow the market to keep downward pressure on electric prices and to ensure that customers will not be made worse off due to electric restructuring. To that end, tools used in other states to address market structure and power that have merit and are worth consideration in Florida include:

- Requiring utilities to file detailed proposals to restructure their operations by a date certain;
- Require unbundled customer bills now in advance of introducing retail competition;
- Phase-in electric restructuring, establishing wholesale competition then retail, and allowing industrial then residential;
- Establish appropriate monitoring of market power based upon market structure; and
- Require a plan to eliminate market dominance.

2. STRANDED COSTS

One of the most contentious issues to be addressed during the transition to a competitive market is finding a fair and equitable solution to the stranded investment question. Stranded costs resulting from the transition to a competitive market may take many forms. In the electric industry, stranded costs generally include uneconomic generation facilities, above market purchased power contracts, and unrecovered regulatory assets. Other expenses often included in the definition of stranded costs could include operating costs of uneconomic units, unfunded nuclear decommissioning costs, high-priced purchases from qualifying facilities, and certain deferred tax assets and liabilities. Additionally, stranded costs may also include ancillary expenses the utility will incur transitioning to a competitive market, such as employee retraining and costs associated with establishing a regional transmission organization as discussed in the Market Structure section of this report.

The difference between costs expected to be recovered under rate regulation and those recoverable in a competitive market is termed "stranded costs." The single largest category of stranded costs in the electric industry is generation related, including wholly or jointly-owned generation assets, leased generation assets and long-term purchased power contracts at above-current-market prices. Also included are common plant associated with generation-related activities, and the physical removal of those assets. These costs represent potential stranded investment. Conversely, it is possible that the market value of regulated assets could be higher than the unrecovered book balances. In this case, these values could be netted against other stranded costs or otherwise credited to the ratepayer.

The methodology used to calculate stranded costs and the recovery mechanisms used vary from state to state. One reason for this is each state's policy makers are responding to unique political, economic, and fuel resource circumstances. Moody's Investors Service asserts that without substantial recovery of stranded costs, a utility could end up in bankruptcy. Opponents to this school of thought assert that bankruptcy is a cost of competition.

The value of the uneconomic or stranded assets will vary going forward based on future market prices. Therefore, a number of states have proposed periodically re-estimating the stranded investment. Others are making an initial estimate that will remain in effect for a fixed period to be revisited at a later date. Many states have not addressed or have postponed addressing the details of how to estimate stranded investment.

DEFINING STRANDED INVESTMENT

Stranded investment is generally defined as assets reduced in value due to competition and is calculated as the difference between the net book value of the assets and their market value. Assets reduced in value for reasons not related to competition are not potential stranded investment. Costs already recovered from rate payers, such as the depreciated portion of the original cost of assets and deferred taxes, should not be recovered a second time. Many states allow recovery of costs associated with restructuring such as transition costs, retraining costs, and nuclear decommissioning costs. While strictly speaking, these are not ''stranded" costs, many states treat them as such for purposes of estimating stranded costs.

MEASUREMENT METHODOLOGIES

There are varying measurement methodologies for determining the amount of potential stranded investment. Most agree, however, that the precise dollar amount is difficult to estimate. The amount of stranded investment is dependent upon what happens in a competitive market, thus contributing to the variability and the riskiness of estimates. Estimating stranded investment today requires assumptions and judgments about future market conditions and can vary widely depending on the methodology, thus estimates of stranded investment are imprecise. Estimating future market prices is particularly difficult in the changing utility market. In addition to the unpredictable dynamics of an evolving market, estimating future market prices will also be impacted by government decisions about wholesale competition, retail competition, mergers, future rate designs, and municipalization.

Potential stranded investment associated with generating facilities includes not only the current capital cost of the facilities, but also the cost of the physical removal and dismantlement at the end of the respective lives. Such amounts for the decommissioning of nuclear plants and disposing of nuclear waste are very significant. Although not nearly as great, the costs of removing and dismantling fossil fuel burning plants may also be substantial.

Stranded investment amounts may be adjusted for related accumulated deferred income taxes, unamortized investment tax credits or other related balance sheet reserves. Consideration should be given to reflecting all generating units and other sources of power supply, whether above or below market, in the calculation of stranded investment. Fairness and equity dictate that the benefits from assets that may have a value higher than market value be used to offset the stranded investment of other assets.

Two general measurement methodologies to consider when estimating stranded investment are administrative determination and market based determination. Administrative methods attempt to measure stranded investment by analytic techniques involving the forecasting and modeling of future revenue requirements under current regulatory principles, and comparing the results against projected revenue streams in a competitive market. Market valuation approaches measure stranded investment by determining the market value of assets through sale, auction, or divestiture of the assets and comparing the resulting market price to the embedded cost of the assets. If the market value is less than book value, then the difference represents stranded investment. If the market value is greater than the net book value, then the difference represents stranded benefits. In both cases, the market value (administratively determined or actual) is compared with regulated net book value to determine the level of stranded investment. Thus far, it is clear that no one broadly accepted and recognized methodology has emerged in the industry.

The timing of the valuations is one important decision criteria. The valuation can be based on the estimated market value of the assets (administrative valuation method), or based on the sale of those assets (market valuation method). The valuation can be determined before the transition to the competitive market (ex ante) by estimating future market conditions, or after the transition

(ex post) using the known market conditions in a competitive market at that point. Stranded investment cannot be estimated currently using the ex post method as the transition to a competitive market has not yet occurred.

Generation divestiture is an example of a market-based valuation. Using this approach, the utility's asset is sold, with the difference between book value and the sale price representing the stranded investment amount. With spin-off and stock valuation, generating units are spun-down into a new corporation and part of the common stock is publicly traded. The market would automatically value the common stock, which, together with the value of the debt and the preferred stock, would establish the market value of the generating assets. Another example is long-term power sales contracts, in which market prices associated with firm long-term power contracts would be used to determine generating asset values.

MEASUREMENT PERIOD

There are two time periods warranting consideration in connection with stranded investment. First is the period over which stranded investment is computed when using administrative approaches. The second is the period over which stranded investment may be recovered. The former will be addressed here, while the latter is considered later in the Methodologies for Recovery section.

The time period over which stranded investment is computed will affect its overall quantification. A principal consideration is the fact that, under the traditional obligation to serve, utilities incurred obligations on behalf of their customers. Using very long planning horizons, utilities undertook construction programs to assure there was sufficient and reliable capacity over the long term. These investments were incurred by the utilities to fulfill their exclusive obligation to serve customers and be provided the opportunity to recover prudent investments. Under traditional ratemaking, the cost of long-term investment is spread over the estimated useful service life of that investment, with the intent of matching cost recovery with ratepayer benefit. There is a reasonable expectation that utilities are given a fair opportunity to recover such investment over the periods the assets are used in connection with the provision of service. The quantification of stranded investment should consider the expected remaining cost recovery periods associated with such assets as were in the traditional ratemaking process. Imposing a time period for quantifying stranded investment could deny the utilities a reasonable opportunity for full cost recovery. The full expected cost recovery period should reflect the remaining estimated service lives implicit in currently approved book depreciation rates for assets.

MARKET PRICE

A critical variable in attempting to quantify stranded investment is the expected market price over the calculation horizon. Estimates of the market price are necessary for projecting future annual revenues under any lost revenue approach. Moreover, if one assumes that a prudent investor

factors future revenue streams into the process of deciding upon the extent to which funds are to be committed, then estimates of the market price may reasonably be assumed as implicit in the bids offered in connection with the auction and divestiture approaches.

There are significant risks in estimating the market price because, if the estimates are too high, the quantification of stranded investment will be understated. Conversely, if the estimates are too low, then the quantification will be overstated. The risk of such estimates will largely be dependent upon the calculation method selected and whether there will be opportunities for subsequent revisions to the estimates. This topic is addressed further in the Methodologies for Recovery section.

Theoretically, in a highly competitive deregulated industry, the market price will approach long-run marginal cost. Attempting to forecast such prices is a difficult undertaking. Among the factors affecting the market price are: customer demand, assumed market structure, capacity constraints, input prices, business decisions made by competitors, interest rates and inflation, developments in technology, and new laws and regulations. Moreover, a clear understanding of what constitutes the relevant market is an unknown. Any current estimate will be speculative at best, nevertheless, the ex ante method requires a forecast of market price.

METHODOLOGIES FOR RECOVERY

BACKGROUND

This section discusses standards and methodologies for the recovery of utility costs where jurisdictions decide stranded investment cost exists and is recoverable, in whole or part, from ratepayers. Public policy considerations warrant development of standards for review of stranded cost recovery mechanisms. Such mechanisms should promote a proper allocation of risks and rewards between utilities and ratepayers and ensure that the utilities have a reasonable opportunity to recover the net, non-mitigated stranded costs.

MITIGATION MEASURES

Standards of review should include a demonstration by the utilities that the net non-mitigated stranded costs will occur with reasonable certainty before any consideration is given to recovery of the costs. Mitigation of stranded investment, as discussed herein, simply means reducing the potential amount to be recovered. Mitigation requires active efforts by utilities to minimize the amount of potential stranded investment caused by retail competition. From the utility perspective, stranded investment recovery will have some detrimental impact upon the workings of a free and unfettered competitive market for utility products. The impacts of stranded investment on new competitive markets should be minimized, and minimizing or eliminating stranded investment will result in lower customer bills sooner.

Mitigation from the customers' perspective means the utility is taking all possible steps to reduce its stranded investment, so potentially customers are the last possible source of recovery of these costs. Mitigation, from the utility's perspective, usually means that its potentially stranded

costs are minimized by the time competition is introduced. One way of mitigating stranded costs, under the utility definition, is collecting additional amounts from customers in rates prior to the initiation of competition. This method is not consistent with the customer's perspective of mitigation.

The importance of mitigation in stranded cost policies can be measured by the fact that some regulatory agencies have allowed only recovery of stranded costs, net of mitigation. These decisions affirm that active plans by utilities to reduce their potential stranded cost exposure are expected before responsibility for stranded investment recovery is passed on to ratepayers. Generally, mitigation is a recommended strategy for any state addressing stranded cost issues.

Market Action

Market actions affect the market structure for utility services or rely on market mechanisms, such as auctions or sales, to allow for the efficient distribution of stranded investment. In the electric industry, one such strategy calls for the rapid opening at the earliest possible date of retail electricity markets by eliminating monopoly franchises for retail electricity sales. Consumers, with a choice of electricity suppliers, will maximize competitive pressures on generators by maximizing their consumer benefits.

An alternate strategy is to delay the onset of competition by a more deliberate opening of retail utility markets. Here retail access would proceed in a staged fashion, with selected customer segments initially receiving access to alternate suppliers. All customers would be granted retail access but on a planned basis. A variant on this strategy is to grant all consumers access at the same time, but to delay the onset of access by a period of time. This strategy, while sacrificing some consumer benefits, allows utilities the opportunity to recover a larger share of their sunk costs.
This is the strategy that most states have adopted.

Divestiture by sale provides a readily identifiable market value for the asset(s), which is useful in determining stranded investment. It then allows an unregulated business to be separate from the regulated utility business.

Marketing excess capacity of assets, caused by departing customers, is a clear strategy to increase revenues or offset lost revenue, thereby reducing stranded investment. For electric utilities, improving system load factors, by reducing peak demand or by increasing off-peak energy sales, provide opportunities to lower utility costs. These marketing strategies have the potential to reduce amounts of stranded investment.

Depreciation Options

Depreciation expense contributes directly to fixed costs. Accelerating depreciation shortens the time over which these capital costs are recovered. Increasing depreciation expense to more closely approximate net book value of the plant assets with their market value is a method to mitigate potential stranded investment. For states that are ordering retail access or have a future date for retail access, accelerated depreciation is one strategy that would help mitigate the magnitude of the cost.

A modification of this method is to accelerate depreciation on certain assets while decelerating depreciation on other assets. Where this method is used, there is some consensus that the net book value of accelerated assets exceed their market value, while the decelerated assets have market values less than their net book value.

Some have proposed a revaluation of the net book value of selected classes of customers by transferring depreciation reserves from one customer class to another. A criticism to this proposal is that it shifts costs between classes of customers.

TRUE-UP MECHANISMS

Public policy may require some type of periodic true-up to ensure that restructuring is carried out in a manner that protects the public interest. True-up mechanisms are procedures that address, on a timely basis, corrections to unanticipated variances to stranded investment and provide a continuous review of stranded investment charges paid by consumers.

Stranded investment determinations involve a comparison of the net book value of assets with an estimation of their market value. The result of this comparison is largely equal to a utility's sunk cost minus a calculation of the future operating earnings. This valuation places its reliance on forecasts of expected utility revenues, costs, and future market prices. The difference between the forecasts and the net book value of the related assets is the true-up amount for use in future cost recovery proceedings.

Since there is considerable uncertainty in attempting to quantify stranded investment, the calculation of stranded investment is subject to a wide range of outcomes. Because of this uncertainty, proponents of periodic true-ups argue that one solution is to use some type of periodic revisiting of the stranded investment calculations. This ongoing approach reduces the risks of estimation, resulting in a more fair and accurate recovery of stranded investment. They assert that true-ups are appropriate to ensure that customers do not overpay stranded investment, or utilities under-collect.

Opponents of true-ups hold that once market participants value the future liability for stranded investment, it becomes fixed and certain. They assert that no additional risk should be injected into the process for future changes or true-ups to the stranded investment estimates. They also argue that dollar-for-dollar true-ups take away any incentive for utilities to improve and are not the best recommended alternative. If initial estimates of the size of stranded costs are relatively accurate and the recovery mechanism is relatively predictable (ie. kWh), then true-up mechanisms should not experience exceptional volatility or uncertainty in their results.

Regulatory commissions ultimately must determine whether a true-up mechanism is necessary to protect the interests of the involved parties. If they decide yes, then the following must also be decided: how often a true-up procedure should be used, what specific elements of the stranded investment calculation need to be updated, should corrections be made for past over- or under-collections, or should stranded investment charges be restated on an ongoing basis only.

Additional factors to consider include changes in the market price, depreciation lives or amortization periods, and the effect of changes in maintenance practices.

COST ALLOCATIONS

Once stranded investment has been properly computed, the next step before developing a recovery mechanism is to establish the manner by which such costs are to be allocated between jurisdictions and between customer classes. The jurisdictional allocation is necessary to properly segregate stranded investment between the various customer classes, such as residential, commercial, and industrial.

Consideration should be given to allocation of stranded investment to jurisdictions and classes in a manner consistent with the recovery of similar costs from customers or customer classes under current rates. However, most states appear to be collecting stranded costs on a kWh basis and do not use traditional cost allocation models. Good regulatory practices would indicate that cost should be allocated in an equitable and consistent manner. These costs should be assigned either by the customer class or rate class based on some notion of cost causation. This is parallel to traditional cost assignment methodologies used for newly acquired assets.

RECOVERY MECHANISMS

Stranded investment recovery mechanisms can be defined as either implicit or explicit. A mechanism that recovers stranded investment through regulated rates, without specifically increasing rates, is one example of an implicit charge. In such cases the stranded investment charge is simply a part of bundled rates. Common examples of explicit charges include customer exit fees, a surcharge usually on a kWh basis (often called a competitive transition charge), or access fees paid for access to new providers.

The effectiveness of implicit recovery methods is difficult to assess. For example, if a simple rate-freeze is implemented as a recovery mechanism, it is impossible to assess whether a utility is over or under recovering stranded investment. In order to safeguard the public interest, a commission proceeding could be opened to determine whether rates are just and reasonable prior to the implementation of a rate freeze. In this manner the benefits to ratepayers are measured, cost shifting between rate classes can be minimized, and the financial integrity of the utility is specifically addressed.

In addition, many states are performing a periodic reconciliation or true-up between projected stranded costs recovery and actuals. There are major issues of both inter-class and inter-generational equity issues that can be mitigated with periodic evaluations of recovered amounts. Thus, in most cases, periodic true-ups are an important tool to ensure timely recovery of stranded costs and to achieve an equitable assignment of cost to the appropriate customer or rate class.

SECURITIZATION OF STRANDED COSTS

Securitization of stranded investment is one means for managing the financial effects of stranded investment recovery. It is a method used to refinance investment in utility plant deemed

uneconomic through the process of restructuring regulation of the utility industry. Through securitization, bonds are issued by a trust or similar entity in the amount of the stranded investment the utility is authorized to recover, with the utility receiving the proceeds for the amount of its stranded investment. State statutes are passed to allow a stream of future revenues to be considered property for purposes of securing the bonds. Utility customers pay a fixed recovery charge to generate sufficient revenues to cover the payments to retire the bonds.

Advocates of securitization of stranded investment view it as providing benefits to all parties affected. Stockholders receive a guaranteed recovery of their authorized stranded investment. With securitization, a revenue stream of principal and interest payments is mandated by law, minimizing risk for the securities, and making them very attractive investments. Investors in these bonds usually accept interest rates lower than the utility cost of capital. This interest savings to the utility reduces the stranded investment recovery charge below what it would have been if financed by the utility's total capital structure. Separation of the stranded investment recovery from recovery of the remaining utility assets allows the capital cost on utility investments to be no higher than it would have been absent a stranded investment risk. This reduces the cost of capital for on-going utility operations and benefits ratepayers.

Opponents of securitization state that the reason for the reduced interest rate is the fact that securitization, in effect, represents a significant transfer of risk of collecting stranded costs from shareholders to customers. Another disadvantage is that once securitized bonds are sold, state regulators might not have the authority to modify the recovery charge paid by ratepayers, unless legislation provides for a true-up mechanism. They also contend that guaranteed utility recovery of stranded investment through securitization does not provide an incentive to the utility to reduce or mitigate stranded investment and may in fact set the stage that stranded investment may be over-recorded causing detrimental market impacts.

CONCLUSION

In conclusion, the goals and principles set forth in the beginning of this section should be considered in order to achieve equitable resolution of stranded investment recovery in the new competitive environment if necessary. These principles include:

- Policy makers determine what costs are eligible as potentially strandable
- All reasonable mitigation efforts are required by the utility
- Estimate stranded costs (after netting above market assets)
- Require periodic recovery adjustments to ensure timely recovery over the desired period
- Fairly allocate recovery cost to the appropriate rate or customer class
- Consider securitization as one recovery technique

While there is no ideal way to address stranded costs a few consensus ideas have emerged First, if Florida uses an administrative method of estimating stranded costs, then the projected market price of energy should be periodically re-estimated and compared to the actual, above market production costs of the generation assets. It would be much riskier to use a single band forecast

going forward and netting actual production costs against a forecast without a periodic readjustment to market prices.

Alternatively, a much more accurate estimate of stranded costs is obtained, if Florida requires divestiture of generation assets. Divesture would permit the market to determine the value of generation and this market set value would be offset against the undepreciated book value. This approach also may have the benefit of mitigating market power concerns.

Regardless of the method used, the FPSC should require all reasonable mitigation efforts be employed prior to either an administrative or market based evaluation method. Second, periodic true-ups are approach mechanisms to ensure that whatever time period is determined for stranded cost recovery, that appropriate progress is being made in meeting the timeline. Cost recovery mechanisms tend to add uncertainty to market determined energy prices and thus recovery should be accomplished as expeditiously as possible.

It is not anticipated that Florida utilities will have substantial assets that will be above market in value. The one exception is purchased power contracts entered into with cogenerators as required by Federal Law. Both FPL and FPC have such long-term contacts that are clearly above current market prices. FPL was permitted in its last rate stipulation to book $100 million in accelerated depreciation for generation plants. In addition, the FPSC has permitted over earnings to be booked against under recovered regulatory assets and reserve accounts. It is possible given the rapid energy growth in Florida and the limited import capabilities, that Florida utilities could have above market assets. In this case, traditional FPSC regulatory philosophy would suggest, if any gain on sale occurs by divesting these assets, that such gains be shared with the ratepayers.

3. ELECTRIC SALES AND REVENUE INFORMATION

Understanding two concepts will help explain how electric rates are determined now and in the future. The first traditional concept is called cost-of-service ratemaking. Under cost-of-service ratemaking, which has historically been the norm under state regulation, state regulators seek to match the rates charged to consumers with the costs incurred in providing those consumers with electricity. There is, in other words, some element of causation. If a customer class causes the utility to incur certain costs, that class pays those costs.

The second concept is called value-of-service ratemaking. This approach is applied when a state's electric generation becomes open to competition. With this approach prices are set equal to what the market will bear rather than being based on cost causation. Value of service ratemaking takes into explicit consideration the alternatives available to customers.

Under value-of-service ratemaking, and adequate generation competition, rates will potentially be lowered for all types of customers. However, if an adequate supply of generation facilities is not available, prices will be higher and customers will spend more to obtain service. This exact dilemma is being faced by California, a restructured state. As soon as the phase-in period was over in San Diego, California, the rate freeze was lifted and customers experienced a doubling in the average electricity bill. Customers demanded answers. Power generators countered that their prices only reflected the dynamics of supply and demand, and that Californians are now paying for years of neglect when it came to constructing new facilities.

Obviously, electric regulators are facing a new challenge, that of deregulation. Not only must they grapple with the environmental and social questions that the process raises, they must think harder about the basic economics of electricity. Do regulators completely rely on competitive markets to price the product or do they attempt to maintain some type of price caps? How do regulatory authorities ensure that adequate supplies of new generation are available? What are the consequences of price volatility for customers? These are all important issues that are ultimately reflected in the rates.

The staff of Florida Public Service Commission analyzed the average revenue per kWh for every state from 1995 to 1999 and separated the states that have adopted restructuring from those that have not. The tables[4] follow. Each state was further broken down by customer class (residential, commercial, and industrial) and surprisingly the greatest amount of savings on average from 1995 to 1999 was found in the residential class. These tables illustrate that there is a greater rate decrease in states that have either deregulated or are in the process of deregulation, however, it must be pointed out that rates for nearly every state have gone down since 1995. A review of the tables fail to show persuasive trends on a regional basis. However, trends may be more recognizable in the

[4]The following rate information is from the Energy Information Administration (EIA, Form EIA-826, Monthly Electric Utility Sales & Revenue Report with State Distributions). The EIA is the principal and authoritative source of comprehensive energy data for the Congress, the Federal Government, the States, and the public.

future. This information may also be misleading since many states listed on the restructuring tables are currently going through a regulatory or legislatively mandated rate freeze and/or rate phase-in period. These states are not yet experiencing true market competition, so the effect of electric restructuring on rates cannot be fully determined.

1. Total Industry, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	5.47	5.00	(0.47)	(8.59)
Alaska	10.17	9.60	(0.57)	(5.60)
Arizona	7.62	6.50	(1.12)	(14.70)
Arkansas	6.27	5.30	(0.97)	(15.47)
California	9.91	8.30	(1.61)	(16.25)
Colorado	6.12	5.90	(0.22)	(3.59)
Connecticut	10.50	10.00	(0.50)	(4.76)
Delaware	6.91	6.60	(0.31)	(4.49)
District of Col.	7.12	6.20	(0.92)	(12.92)
Florida	7.01	7.10	0.09	1.28
Georgia	6.62	5.60	(1.02)	(15.41)
Hawaii	11.29	11.10	(0.19)	(1.68)
Idaho	4.09	4.20	0.11	2.69
Illinois	7.69	6.40	(1.29)	(16.78)
Indiana	5.24	5.30	0.06	1.15
Iowa	6.03	5.50	(0.53)	(8.79)
Kansas	6.56	5.90	(0.66)	(10.06)
Kentucky	4.07	4.00	(0.07)	(1.72)
Louisiana	5.75	5.20	(0.55)	(9.57)
Maine	9.49	11.00	1.51	15.91
Maryland	7.06	6.20	(0.86)	(12.18)
Massachusetts	10.12	9.00	(1.12)	(11.07)
Michigan	7.05	7.20	0.15	2.13
Minnesota	5.58	5.60	0.02	0.36
Mississippi	5.98	5.40	(0.58)	(9.70)
Missouri	6.25	5.10	(1.15)	(18.40)

1.	Total Industry, Average Revenue per kWh			
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Montana	4.65	5.40	0.75	16.13
Nebraska	5.40	4.80	(0.60)	(11.11)
Nevada	6.10	5.70	(0.40)	(6.56)
New Hampshire	11.72	11.90	0.18	1.54
New Jersey	10.44	9.90	(0.54)	(5.17)
New Mexico	6.77	6.60	(0.17)	(2.51)
New York	11.06	10.20	(0.86)	(7.78)
North Carolina	6.58	6.40	(0.18)	(2.74)
North Dakota	5.71	5.40	(0.31)	(5.43)
Ohio	6.24	6.20	(0.04)	(0.64)
Oklahoma	5.57	4.70	(0.87)	(15.62)
Oregon	4.67	4.80	0.13	2.78
Pennsylvania	7.93	7.00	(0.93)	(11.73)
Rhode Island	10.38	8.60	(1.78)	(17.15)
South Carolina	5.69	5.50	(0.19)	(3.34)
South Dakota	6.20	6.10	(0.10)	(1.61)
Tennessee	5.21	5.50	0.29	5.57
Texas	6.10	5.80	(0.30)	(4.92)
Utah	5.30	5.00	(0.30)	(5.66)
Vermont	9.46	11.60	2.14	22.62
Virginia	6.26	5.80	(0.46)	(7.35)
Washington	4.10	4.50	0.40	9.76
West Virginia	5.34	5.10	(0.24)	(4.49)
Wisconsin	5.36	5.50	0.14	2.61
Wyoming	4.32	4.30	(0.02)	(0.46)
U.S. Average	6.91	6.58	(0.33)	(4.54)

2. Residential Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	6.71	6.40	(0.31)	(4.62)
Alaska	11.24	10.70	(0.54)	(4.80)
Arizona	9.09	7.50	(1.59)	(17.49)
Arkansas	7.98	6.70	(1.28)	(16.04)
California	11.61	10.40	(1.21)	(10.42)
Colorado	7.42	7.20	(0.22)	(2.96)
Connecticut	11.95	11.30	(0.65)	(5.44)
Delaware	9.09	8.20	(0.89)	(9.79)
District of Col.	7.62	6.80	(0.82)	(10.76)
Florida	7.82	8.00	0.18	2.30
Georgia	7.85	6.70	(1.15)	(14.65)
Hawaii	13.32	12.90	(0.42)	(3.15)
Idaho	5.33	5.20	(0.13)	(2.44)
Illinois	10.37	7.70	(2.67)	(25.75)
Indiana	6.74	6.50	(0.24)	(3.56)
Iowa	8.24	7.40	(0.84)	(10.19)
Kansas	7.92	7.00	(0.92)	(11.62)
Kentucky	5.62	5.20	(0.42)	(7.47)
Louisiana	7.23	6.30	(0.93)	(12.86)
Maine	12.51	13.20	0.69	5.52
Maryland	8.43	7.40	(1.03)	(12.22)
Massachusetts	11.26	10.10	(1.16)	(10.30)
Michigan	8.34	8.60	0.26	3.12
Minnesota	7.17	6.90	(0.27)	(3.77)
Mississippi	6.99	6.20	(0.79)	(11.30)
Missouri	7.25	5.80	(1.45)	(20.00)

2. Residential Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Montana	6.09	6.70	0.61	10.02
Nebraska	6.37	5.40	(0.97)	(15.23)
Nevada	7.11	7.20	0.09	1.27
New Hampshire	13.50	13.80	0.30	2.22
New Jersey	11.98	11.00	(0.98)	(8.18)
New Mexico	8.93	8.50	(0.43)	(4.82)
New York	13.90	12.90	(1.00)	(7.19)
North Carolina	8.12	7.70	(0.42)	(5.17)
North Dakota	6.23	5.90	(0.33)	(5.30)
Ohio	8.60	7.80	(0.80)	(9.30)
Oklahoma	6.82	5.60	(1.22)	(17.89)
Oregon	5.49	5.50	0.01	0.18
Pennsylvania	9.72	8.50	(1.22)	(12.55)
Rhode Island	11.47	9.80	(1.67)	(14.56)
South Carolina	7.53	7.20	(0.33)	(4.38)
South Dakota	7.08	6.80	(0.28)	(3.95)
Tennessee	5.91	6.30	0.39	6.60
Texas	7.71	6.90	(0.81)	(10.51)
Utah	6.94	6.80	(0.14)	(2.02)
Vermont	10.52	13.10	2.58	24.52
Virginia	7.84	7.00	(0.84)	(10.71)
Washington	4.97	5.20	0.23	4.63
West Virginia	6.50	6.10	(0.40)	(6.15)
Wisconsin	6.97	7.20	0.23	3.30
Wyoming	6.09	6.00	(0.40)	(1.48)
U.S. Average	8.38	7.87	(0.52)	(6.03)

3. Residential Sector (Restructuring States), Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Arizona	9.09	7.50	(1.59)	(17.49)
Arkansas	7.98	6.70	(1.28)	(16.04)
California	11.61	10.40	(1.21)	(10.42)
Connecticut	11.95	11.30	(0.65)	(5.44)
Delaware	9.09	8.20	(0.89)	(9.79)
District of Col.	7.62	6.80	(0.82)	(10.76)
Illinois	10.37	7.70	(2.67)	(25.75)
Maine	12.51	13.20	0.69	5.52
Maryland	8.43	7.40	(1.03)	(12.22)
Massachusetts	11.26	10.10	(1.16)	(10.30)
Michigan	8.34	8.60	0.26	3.12
Montana	6.09	6.70	0.61	10.02
Nevada	7.11	7.20	0.09	1.27
New Hampshire	13.50	13.80	0.30	2.22
New Jersey	11.98	11.00	(0.98)	(8.18)
New Mexico	8.93	8.50	(0.43)	(4.82)
New York	13.90	12.90	(1.00)	(7.19)
Ohio	8.60	7.80	(0.80)	(9.30)
Oklahoma	6.82	5.60	(1.22)	(17.89)
Oregon	5.49	5.50	0.01	0.18
Pennsylvania	9.72	8.50	(1.22)	(12.55)
Rhode Island	11.47	9.80	(1.67)	(14.56)
Texas	7.71	6.90	(0.81)	(10.51)
Virginia	7.84	7.00	(0.84)	(10.71)
West Virginia	6.50	6.10	(0.40)	(6.15)
U.S. Average	9.36	8.61	(0.75)	(7.91)

4. Residential Sector(States that have not adopted restructuring), Avg. Revenue per				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	6.71	6.40	(0.31)	(4.62)
Alaska	11.24	10.70	(0.54)	(4.80)
Colorado	7.42	7.20	(0.22)	(2.96)
Florida	7.82	8.00	0.18	2.30
Georgia	7.85	6.70	(1.15)	(14.65)
Hawaii	13.32	12.90	(0.42)	(3.15)
Idaho	5.33	5.20	(0.13)	(2.44)
Indiana	6.74	6.50	(0.24)	(3.56)
Iowa	8.24	7.40	(0.84)	(10.19)
Kansas	7.92	7.00	(0.92)	(11.62)
Kentucky	5.62	5.20	(0.42)	(7.47)
Louisiana	7.23	6.30	(0.93)	(12.86)
Minnesota	7.17	6.90	(0.27)	(3.77)
Mississippi	6.99	6.20	(0.79)	(11.30)
Missouri	7.25	5.80	(1.45)	(20.00)
Nebraska	6.37	5.40	(0.97)	(15.23)
North Carolina	8.12	7.70	(0.42)	(5.17)
North Dakota	6.23	5.90	(0.33)	(5.30)
South Carolina	7.53	7.20	(0.33)	(4.38)
South Dakota	7.08	6.80	(0.28)	(3.95)
Tennessee	5.91	6.30	0.39	6.60
Utah	6.94	6.80	(0.14)	(2.02)
Vermont	10.52	13.10	2.58	24.52
Washington	4.97	5.20	0.23	4.63
Wisconsin	6.97	7.20	0.23	3.30
Wyoming	6.09	6.00	(0.40)	(1.48)
U.S. Average	7.45	7.15	(0.29)	(4.21)

5. Commercial Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	6.73	6.30	(0.43)	(6.39)
Alaska	9.54	9.00	(0.54)	(5.66)
Arizona	8.06	6.70	(1.36)	(16.87)
Arkansas	6.83	5.50	(1.33)	(19.47)
California	10.49	8.20	(2.29)	(21.83)
Colorado	6.07	5.40	(0.67)	(11.04)
Connecticut	10.33	9.70	(0.63)	(6.10)
Delaware	7.08	6.80	(0.28)	(3.95)
District of Col.	7.15	6.20	(0.95)	(13.29)
Florida	6.39	6.50	0.11	1.72
Georgia	7.32	6.50	(0.82)	(11.20)
Hawaii	12.16	12.10	(0.06)	(0.49)
Idaho	4.48	4.50	0.02	0.45
Illinois	7.88	6.80	(1.08)	(13.71)
Indiana	5.92	6.10	0.18	3.04
Iowa	6.44	5.90	(0.54)	(8.39)
Kansas	6.68	6.10	(0.58)	(8.68)
Kentucky	5.25	5.20	(0.05)	(0.95)
Louisiana	6.77	6.20	(0.57)	(8.42)
Maine	10.28	12.10	1.82	17.70
Maryland	6.91	5.90	(1.01)	(14.62)
Massachusetts	9.93	8.60	(1.33)	(13.39)
Michigan	7.86	7.80	(0.06)	(0.76)
Minnesota	6.19	5.90	(0.29)	(4.68)
Mississippi	7.01	6.20	(0.81)	(11.55)
Missouri	6.18	5.10	(1.08)	(17.48)
Montana	5.31	6.10	0.79	14.88
Nebraska	5.56	5.10	(0.46)	(8.27)

5. Commercial Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Nevada	6.75	6.70	(0.05)	(0.74)
New Hampshire	11.38	11.40	0.02	0.18
New Jersey	10.23	9.70	(0.53)	(5.18)
New Mexico	7.91	7.70	(0.21)	(2.65)
New York	11.92	10.70	(1.22)	(10.23)
North Carolina	6.47	6.30	(0.17)	(2.63)
North Dakota	6.20	5.90	(0.30)	(4.84)
Ohio	7.68	7.60	(0.08)	(1.04)
Oklahoma	5.78	4.70	(1.08)	(18.69)
Oregon	5.06	4.90	(0.16)	(3.16)
Pennsylvania	8.33	7.10	(1.23)	(14.77)
Rhode Island	10.08	8.20	(1.88)	(18.65)
South Carolina	6.35	6.20	(0.15)	(2.36)
South Dakota	6.55	6.30	(0.25)	(3.82)
Tennessee	6.65	6.40	(0.25)	(3.76)
Texas	6.64	6.80	0.16	2.41
Utah	5.92	5.60	(0.32)	(5.41)
Vermont	9.80	12.20	2.40	24.49
Virginia	6.07	5.50	(0.57)	(9.39)
Washington	4.82	5.10	0.28	5.81
West Virginia	5.86	5.60	(0.26)	(4.44)
Wisconsin	5.78	5.90	0.12	2.08
Wyoming	5.11	5.10	(0.01)	(0.20)
U.S. Average	7.34	6.94	(0.39)	(5.22)

6. Commercial Sector (Restructured States), Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Arizona	8.06	6.70	(1.36)	(16.87)
Arkansas	6.83	5.50	(1.33)	(19.47)
California	10.49	8.20	(2.29)	(21.83)
Connecticut	10.33	9.70	(0.63)	(6.10)
Delaware	7.08	6.80	(0.28)	(3.95)
District of Col.	7.15	6.20	(0.95)	(13.29)
Illinois	7.88	6.80	(1.08)	(13.71)
Maine	10.28	12.10	1.82	17.70
Maryland	6.91	5.90	(1.01)	(14.62)
Massachusetts	9.93	8.60	(1.33)	(13.39)
Michigan	7.86	7.80	(0.06)	(0.76)
Montana	5.31	6.10	0.79	14.88
Nevada	6.75	6.70	(0.05)	(0.74)
New Hampshire	11.38	11.40	0.02	0.18
New Jersey	10.23	9.70	(0.53)	(5.18)
New Mexico	7.91	7.70	(0.21)	(2.65)
New York	11.92	10.70	(1.22)	(10.23)
Ohio	7.68	7.60	(0.08)	(1.04)
Oklahoma	5.78	4.70	(1.08)	(18.69)
Oregon	5.06	4.90	(0.16)	(3.16)
Pennsylvania	8.33	7.10	(1.23)	(14.77)
Rhode Island	10.08	8.20	(1.88)	(18.65)
Texas	6.64	6.80	0.16	2.41
Virginia	6.07	5.50	(0.57)	(9.39)
West Virginia	5.86	5.60	(0.26)	(4.44)
U.S. Average	8.07	7.48	(0.59)	(7.11)

7. Commercial Sector (States that have not adopted restructuring),Avg. Rev. per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	6.73	6.30	(0.43)	(6.39)
Alaska	9.54	9.00	(0.54)	(5.66)
Colorado	6.07	5.40	(0.67)	(11.04)
Florida	6.39	6.50	0.11	1.72
Georgia	7.32	6.50	(0.82)	(11.20)
Hawaii	12.16	12.10	(0.06)	(0.49)
Idaho	4.48	4.50	0.02	0.45
Indiana	5.92	6.10	0.18	3.04
Iowa	6.44	5.90	(0.54)	(8.39)
Kansas	6.68	6.10	(0.58)	(8.68)
Kentucky	5.25	5.20	(0.05)	(0.95)
Louisiana	6.77	6.20	(0.57)	(8.42)
Minnesota	6.19	5.90	(0.29)	(4.68)
Mississippi	7.01	6.20	(0.81)	(11.55)
Missouri	6.18	5.10	(1.08)	(17.48)
Nebraska	5.56	5.10	(0.46)	(8.27)
North Carolina	6.47	6.30	(0.17)	(2.63)
North Dakota	6.20	5.90	(0.30)	(4.84)
South Carolina	6.35	6.20	(0.15)	(2.36)
South Dakota	6.55	6.30	(0.25)	(3.82)
Tennessee	6.65	6.40	(0.25)	(3.76)
Utah	5.92	5.60	(0.32)	(5.41)
Vermont	9.80	12.20	2.40	24.49
Washington	4.82	5.10	0.28	5.81
Wisconsin	5.78	5.90	0.12	2.08
Wyoming	5.11	5.10	(0.01)	(0.20)
U.S. Average	6.63	6.43	(0.20)	(3.41)

8. Industrial Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	4.05	3.50	(0.55)	(13.58)
Alaska	8.38	7.10	(1.20)	(15.27)
Arizona	5.26	5.00	(0.26)	(4.94)
Arkansas	4.51	3.90	(0.61)	(13.53)
California	7.37	5.60	(1.77)	(24.02)
Colorado	4.52	4.20	(0.32)	(7.08)
Connecticut	7.94	7.30	(0.64)	(8.06)
Delaware	4.72	4.50	(0.22)	(4.66)
District of Col.	4.36	3.90	(0.46)	(10.55)
Florida	5.16	4.80	(0.36)	(6.98)
Georgia	4.52	3.60	(0.92)	(20.35)
Hawaii	9.27	9.10	(0.17)	(1.83)
Idaho	2.81	2.70	(0.11)	(3.91)
Illinois	5.27	4.70	(0.57)	(10.82)
Indiana	3.94	3.90	(0.04)	(1.02)
Iowa	3.94	3.60	(0.34)	(8.63)
Kansas	4.82	4.50	(0.32)	(6.64)
Kentucky	2.93	2.90	(0.03)	(1.02)
Louisiana	3.97	3.80	(0.17)	(4.28)
Maine	6.65	7.70	1.05	15.79
Maryland	4.23	3.90	(0.33)	(7.80)
Massachusetts	8.41	7.60	(0.81)	(9.63)
Michigan	5.13	5.00	(0.13)	(2.53)
Minnesota	4.30	4.40	0.10	2.33
Mississippi	4.44	3.90	(0.54)	(12.16)
Missouri	4.53	3.80	(0.73)	(16.11)
Montana	3.44	3.60	0.16	4.65
Nebraska	3.84	3.50	(0.34)	(8.85)

8. Industrial Sector, Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Nevada	5.05	4.10	(0.95)	(18.81)
New Hampshire	9.56	9.20	(0.36)	(3.77)
New Jersey	8.15	7.60	(0.55)	(6.75)
New Mexico	4.40	4.10	(0.30)	(6.82)
New York	5.79	4.70	(1.09)	(18.83)
North Carolina	4.85	4.40	(0.45)	(9.28)
North Dakota	4.50	4.20	(0.30)	(6.67)
Ohio	4.17	4.20	0.03	0.72
Oklahoma	3.75	3.40	(0.35)	(9.33)
Oregon	3.47	3.30	(0.17)	(4.90)
Pennsylvania	5.92	4.90	(1.02)	(17.23)
Rhode Island	8.87	6.80	(2.07)	(23.34)
South Carolina	4.00	3.60	(0.40)	(10.00)
South Dakota	4.43	4.40	(0.03)	(0.68)
Tennessee	4.50	4.50	0.00	0.00
Texas	3.98	4.00	0.02	0.50
Utah	3.72	3.30	(0.42)	(11.29)
Vermont	7.56	8.60	1.04	13.76
Virginia	4.16	3.90	(0.26)	(6.25)
Washington	2.96	3.10	0.14	4.73
West Virginia	4.03	3.80	(0.23)	(5.71)
Wisconsin	3.78	3.90	0.12	3.17
Wyoming	3.50	3.40	(0.10)	(2.86)
U.S. Average	5.06	4.69	(0.36)	(6.69)

9. Industrial Sector (Restructuring States), Average Revenue per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Arizona	5.26	5.00	(0.26)	(4.94)
Arkansas	4.51	3.90	(0.61)	(13.53)
California	7.37	5.60	(1.77)	(24.02)
Connecticut	7.94	7.30	(0.64)	(8.06)
Delaware	4.72	4.50	(0.22)	(4.66)
District of Col.	4.36	3.90	(0.46)	(10.55)
Illinois	5.27	4.70	(0.57)	(10.82)
Maine	6.65	7.70	1.05	15.79
Maryland	4.23	3.90	(0.33)	(7.80)
Massachusetts	8.41	7.60	(0.81)	(9.63)
Michigan	5.13	5.00	(0.13)	(2.53)
Montana	3.44	3.60	0.16	4.65
Nevada	5.05	4.10	(0.95)	(18.81)
New Hampshire	9.56	9.20	(0.36)	(3.77)
New Jersey	8.15	7.60	(0.55)	(6.75)
New Mexico	4.40	4.10	(0.30)	(6.82)
New York	5.79	4.70	(1.09)	(18.83)
Ohio	4.17	4.20	0.03	0.72
Oklahoma	3.75	3.40	(0.35)	(9.33)
Oregon	3.47	3.30	(0.17)	(4.90)
Pennsylvania	5.92	4.90	(1.02)	(17.23)
Rhode Island	8.87	6.80	(2.07)	(23.34)
Texas	3.98	4.00	0.02	0.50
Virginia	4.16	3.90	(0.26)	(6.25)
West Virginia	4.03	3.80	(0.23)	(5.71)
U.S. Average	5.54	5.07	(0.48)	(7.86)

10. Industrial Sector (States that have not adopted restructuring), Avg. Rev. per kWh				
State	1995 - ¢/kWh	1999 - ¢/kWh	Change - ¢/kWh	% - ¢/kWh
Alabama	4.05	3.50	(0.55)	(13.58)
Alaska	8.38	7.10	(1.20)	(15.27)
Colorado	4.52	4.20	(0.32)	(7.08)
Florida	5.16	4.80	(0.36)	(6.98)
Georgia	4.52	3.60	(0.92)	(20.35)
Hawaii	9.27	9.10	(0.17)	(1.83)
Idaho	2.81	2.70	(0.11)	(3.91)
Indiana	3.94	3.90	(0.04)	(1.02)
Iowa	3.94	3.60	(0.34)	(8.63)
Kansas	4.82	4.50	(0.32)	(6.64)
Kentucky	2.93	2.90	(0.03)	(1.02)
Louisiana	3.97	3.80	(0.17)	(4.28)
Minnesota	4.30	4.40	0.10	2.33
Mississippi	4.44	3.90	(0.54)	(12.16)
Missouri	4.53	3.80	(0.73)	(16.11)
Nebraska	3.84	3.50	(0.34)	(8.85)
North Carolina	4.85	4.40	(0.45)	(9.28)
North Dakota	4.50	4.20	(0.30)	(6.67)
South Carolina	4.00	3.60	(0.40)	(10.00)
South Dakota	4.43	4.40	(0.03)	(0.68)
Tennessee	4.50	4.50	0.00	0.00
Utah	3.72	3.30	(0.42)	(11.29)
Vermont	7.56	8.60	1.04	13.76
Washington	2.96	3.10	0.14	4.73
Wisconsin	3.78	3.90	0.12	3.17
Wyoming	3.50	3.40	(0.10)	(2.86)
U.S. Average	4.59	4.33	(0.25)	(5.56)

4. CUSTOMER SERVICE ISSUES

For purposes of this discussion, the term ”customer service” refers to how a company relates to its customers (marketing, complaint resolution) as well as the services it provides to them (reliability, billing, metering). The quality of service a customer receives and the variety of service offerings available to a customer are likely to be highly dependent on customer class in a deregulated environment.

In a regulated monopoly market, retail customers are classified as residential, commercial or industrial. Small business customers are included in the commercial class. As a class, residential customer payments make up the greatest single percentage of total electric revenues in most states, typically about 40%. Commercial and industrial customer classes are generally evenly divided, each making up about 30% of total electric revenues in most states. Florida is atypical, in that residential revenues accounted for 58% of all electric revenues in 1998, the greatest percentage of any state.

Just as competitive telephone companies first sought large high-use business customers, retail electric providers are also likely to target large business and industrial customers. Because of their high energy consumption, these customers will have bargaining power in a competitive market and will be able to negotiate lower rates through contract pricing. Therefore, most electric restructuring legislation includes protective measures for residential and small business customers related to cost, as well as service and reliability.

The guiding principal most states seem to be following in regard to customer service is “No class of customers should be made worse-off by retail competition than they were under a regulated monopoly system.” Or, in even simpler terms, “First, do no harm.” Will such pragmatic principals be sufficient to ensure customers are protected as the electric industry is restructured? The following is an analysis of customer service issues as they have been addressed by states undergoing a restructuring of their energy markets.

Standard Service Provisions and Policies

Most states have required incumbent electric providers to offer a standard service package, usually at a lower rate which is prescribed by the legislature or the utility commission. The authority responsibility to enact rules that will ensure adequate service standards and policies remain in place across the electric industry is held by the public utility commission in most states.

Default Service Provisions and Policies

Customers who do not select a competitive provider are served by a default service provider. The default service provider is also known as the “provider of last resort” since it must serve customers who have no competitive choices available, whose competitive choice defaulted, or who cannot obtain service from a competitor due to poor credit. The default provider is almost always the utility which provided service to the customer prior to restructuring (the distribution company). At least four states (Maryland, Massachusetts, Nevada and New Jersey) have plans to auction small default customers by holding a competitive bidding process to determine what company will win

the right to provide service to those customers who are either unwilling or unable to choose a retail generation provider.

It is important for states to decide what should happen to customers who do not exercise their choice of generation providers. One alternative is to assign a generation supplier to those customers who do not exercise their own choice. The supplier could be assigned randomly or distributed according to the frequency each generation supplier was selected by the rest of the customer base. Florida and several other states used a similar method when customers were first given a choice of long distance providers in the 1980s. One reason a state might favor this method is that it results in a greater distribution of customers among new suppliers of generation which in turn bolsters the competitive generation market.

Load Aggregation Policies

An aggregator is an entity which groups customers together for retail sale purposes. The aggregator can obtain a lower rate for generation services for residential and small business customers who might not be able to obtain lower rates on their own. The aggregator company receives revenues by charging the aggregated customers a slightly higher rate than the rate it pays the energy producer. Almost all states allow residential and small business customers to voluntarily aggregate. Most states require aggregators to be licensed by the utility commission.

Aggregator companies can stimulate competition by encouraging customers to exercise their competitive choice. Aggregators provide additional choices and customers who otherwise would not change generation providers, might do so if an aggregator company markets its services directly to the customer. In most cases, aggregator companies target customers who have something in common, such as being associated with a large businesses, hospital, university, church or charity group. Because an aggregator markets to a certain type of customer, it often develops specific services designed to appeal to that customer group's needs. This is an example of how competition can stimulate product innovation.

Resellers of telecommunications services who aggregate telephone traffic to obtain bulk discounts are required to obtain a certificate to operate in Florida. Some reasons for this practice are market monitoring, customer protection and enforcement. Requiring companies who negotiate purchases of electricity for customer groups to apply for certification from the Florida Public Service Commission prior to offering service would be prudent as the provision of safe and reliable electric service is vital to customers.

Shopping Credit Computation

A shopping credit is a pricing mechanism a few states have developed to encourage retail generation competition. In New Jersey, the utility commission sets an arbitrary rate that becomes the benchmark price. In Pennsylvania, it is called a "shopping credit." In Texas, it is called the "Price-to-Beat." By January 1, 2002, all retail providers in Texas will be required to offer residential and small business customers rates that are 6% lower than its bundled rates as of January 1, 1999. This reduced rate becomes the price-to-beat. Retail electric providers may not charge a different

rate until either 36 months have passed since customer choice was introduced, or the Texas Public Utility Commission determines that at least 40% of electric power consumed by the same class of customers within the utility's certificated service area is committed to be served by competitors.

When states set a benchmark price or "price to beat", it introduces stability to the market. The benchmark price should be set for a defined period of time so that competitors know they must offer rates lower than the benchmark rate in order to compete. The trick is setting the benchmark price at just the right level, high enough so that incumbents are not being penalized but low enough to allow competitors to enter the market. Florida might consider the approach Texas took in this area. The Texas legislature chose not to reduce the price during the transition period. Instead, by freezing prices during the transition period, gains could go toward reducing stranded costs.

Customer Education Campaigns

Customers must be informed about competitive opportunities in order to take advantage of them. There is a strong correlation between customer education and customer participation in competitive choice. Some states have opened generic dockets where stakeholder groups work together to develop plans for educating consumers.

The method used to fund customer education campaigns varies among states. For example, in some states (Arizona, Texas, California, New Mexico) a non-bypassable[5] charge is added to each customer's bill to cover a variety of public benefit programs, including customer education. In Massachusetts, a state agency, the Department of Energy Resources, is responsible for developing a consumer education campaign. The agency then submits its plan along with a budget to both the utility commission and the state legislature for approval. The agency's plan must not replicate ad campaigns which can be done by the private market. Other states are currently in the process of addressing the allocation and recovery of costs for consumer education programs (Michigan, Nevada, and Virginia).

In Arizona, the Commission determines the amount of the charge and the recovery mechanism on a utility by utility basis through a formal hearing process. In California, customer education was heavily funded ($74 million) and furnished through a third party contractor with oversight by a stakeholder group. After this initial customer education campaign blitz, California authorized the three incumbent utilities to implement their own consumer education programs, with any materials developed being subject to the California Public Utility Commission's approval.

Failure to prepare customers for a deregulated electricity market means there will be less understanding and therefore lower participation in competitive choice. Customers who do participate may have false expectations and therefore be unsatisfied with their experience. There are likely to be more questions directed to utilities and state public service commissions. Educating

[5] A "non-bypassable charge" is a surcharge on the bill from which no customers are exempt.

consumers will empower them to demand quality service at a fair price. Isn't that what competition is supposed to achieve?

Competitive Metering and Billing

Staff has identified six states which have expressly permitted competitive metering and billing (Delaware, Illinois, Maryland, Montana, Ohio, Texas). Within these six states, the methods for implementing competitive metering and billing vary. For example, in some states competition in these areas is not expected to take place until several years after the transition to competition. In other states, certain conditions must be met prior to making these services competitive. And in still other states, metering and billing will not become competitive until requested by a utility company. This issue will be decided on a utility by utility basis in Pennsylvania, while Massachusetts, New Jersey and Virginia currently have competitive metering and billing under study.

Perhaps this is another area where a lesson can be learned from the deregulation experience of telecommunications industry. As the number of companies reselling long distance service proliferated during the 1980s, companies who strictly provided billing service were created to serve the needs of these resellers. Previously, incumbent local exchange companies had been the sole providers of this function. The Florida Commission decided to require these billing service companies to obtain a certificate, reasoning that they were involved in the provision of regulated utility services since they billed intrastate telephone calls. This requirement proved to be helpful when some billing service companies engaged in questionable business practices such as inserting unauthorized charges on bills (cramming). If the Florida commission had not maintained oversight over these companies, we would not have been able to effectively protect customers from unfair and deceptive billing practices. For these reasons, Florida should carefully consider the conditions under which such services are permitted to be offered competitively as well as the appropriate point in time such an offering would provide the most benefit to retail competition.

Load Profiling Requirements

Competitive providers of retail electric service want to know the usage habits and patterns of their potential customers to help them make informed business decisions and effectively market their services. Therefore, competitive providers seek this information from incumbent providers, in order to target the most profitable customers.

This issue does not appear to have been addressed in detail by the electric restructuring legislation in many states, though it is expected to be dealt with through rulemaking which addresses other customer protection issues. It is presently under study in Connecticut, Texas and Virginia. Where load data is allowed to be shared, it requires the customer's permission (Ohio, Illinois, Massachusetts). For example, Illinois expressly prohibits utility companies from sharing customer specific billing, usage or load shape data with alternative suppliers without the customer's authorization. Massachusetts decided that distribution companies may provide 36 months of demand and energy data for demand billed customers and 12 months of data for energy only customers to alternative suppliers with permission of the customer. Arkansas only allows customer usage data to be provided in the aggregate.

Companies could be permitted to provide customer load information in the aggregate, without providing names and addresses. In this way, competitors could receive some benefit from the information without risking an intrusion into an individual customer's privacy, which could alienate customers. Customers remain free to divulge as much information about their energy consumption habits as they wish and it is hard to imagine why they would not choose to do so. For example, most customers don't hesitate to share copies of their telephone bill with competitor companies in hopes of getting a lower rate for long distance calls. However, it remains to be seen whether retail customers are willing to trade their privacy for a few cents less on their electric bill.

Customer Protection

Virtually every state's restructuring legislation contains some sort of customer protection provisions. Generally, the subject areas are delineated in the legislation and the state utility commission is instructed to conduct rulemaking to flesh out specific provisions such as those enumerated below. States known to have passed customer protection rules are Arizona, California, and Connecticut. Proceedings are currently underway in many other states. Customer protection provisions are generally focused around the following topics:

Slamming and Cramming

Almost all states have either specifically prohibited slamming by rule, or are in the process of doing so (Arizona, California, Connecticut, Delaware, Illinois, Massachusetts, Maryland, Montana, Nevada, Ohio, Pennsylvania, Texas, Virginia). Several of these states also require electric utilities that slam a customer to refund unauthorized charges and/or pay a fine. Some states require written authorization from the customer in order to change suppliers (Arizona, Montana). Other states have also chosen to allow changes if they are verified by a third-party (Connecticut, Massachusetts).

During the years since long distance service became competitive, both the Florida Public Service Commission and the Federal Communications Commission have conducted several rounds of rulemaking in efforts to curb unauthorized switching of service. As Florida takes steps to open the electric market to competition, we must find ways to make the process of changing providers simple while maintaining enough structure in place to protect customers from the deceptive marketing practices that have plagued the telephone industry.

Privacy and Advertising

Most legislation and/or customer service rules contain provisions to protect customer privacy and prohibit deceptive advertising and/or marketing practices. For example, in Delaware, electric suppliers are prohibited from contacting consumers by telephone to solicit business (telemarketing). In Connecticut, unless a customer notifies the local distribution company to the contrary, the company may release the customer's name, address, phone number and rate class without discrimination. Release of any other customer information requires affirmative permission of the customer.

In Texas, commission rules prohibit utility affiliates from using their parent company's name or logo without a disclaimer. Parent companies are not allowed to solicit business for their affiliates and may not participate in "favorable" joint marketing campaigns.

Customer Complaint/Redress

Most states already have extensive customer complaint procedures in place through their public service commissions. Since the distribution company will be the company dealing directly with the customer and it remains regulated, customer complaints about incumbent or alternative electricity suppliers follow existing procedures.

However, some states have taken this opportunity to fine tune their complaint procedures. In Illinois, complaints may be filed with either the Illinois Commerce Commission or the Attorney General's Office. All utilities and alternate suppliers are required to establish customer service call centers where consumers can receive assistance and information.

Product Disclosure

Restructuring legislation generally specifies the information electric suppliers must provide to customers about their products, such as rates, terms and conditions of service, for comparison shopping purposes. Typically, bills are required to reflect separate charges for transmission, generation, and distribution, and often must include line items for research, environmental (emissions data), low-income funds, taxes, and a competition transition charge, if applicable. Other items of interest to customers required to be included in many states are the generation or fuel-mix and what portion comes from renewable energy sources. Massachusetts even requires the labor characteristics of each supplier's energy portfolio to be disclosed in a standardized format. Also, regulated and non-regulated charges are usually required to be identified separately. Some states have required companies to use a standard billing format to aid customers in comparing prices among alternative suppliers (Connecticut).

Companies want as much freedom as possible to design bills for specific markets and billing systems. It could be argued that allowing this freedom will result in benefits to customers whereas requiring a company to adhere to generic standards in every case will restrict its ability to innovate and offer desired services at lower costs. On the other hand, customers will certainly expect enough consistency in billing formats to be able to quickly discern important information and make comparisons across companies. Florida must carefully consider the level of regulation it will apply to billing format and product disclosure in order to strike a balance between the competitive interest of companies and that of consumers.

Universal Service

Universal service means ensuring all residential customers have access to electricity at an affordable rate and are protected from disconnection in severe weather conditions that might be life threatening. Often, restructuring legislation includes provisions for, or directs the utility commission to establish, a fund to provide financial assistance to low-income persons who are unable to pay for their energy needs. The funds may be paid by electric customers through a "systems benefit charge" or some other itemized charge on the customer's bill.

In Colorado, families enrolled in a state financial assistance program may purchase energy at the same bulk rates as state agencies. In Massachusetts, each distribution company must file a tariff on low-income customers which permits them to purchase energy at a fixed rate (rate in effect in March 1998). If the company experiences a shortfall due to participation in this program, it can be made up in a rate case. Distribution companies in Massachusetts must make generation suppliers "whole" if revenue is due a generation supplier by a customer on the Low Income Tariff, even if the customer refuses to pay.

In Maryland, the Department of Human Resources administers the universal service program, including fund disbursement, under the oversight of the utility commission. The Maryland legislation specified that over the next three years $34 million would be collected for the universal service fund. $24.4 million will be collected from the industrial and commercial classes, and $8.6 million will come from the residential class.

Disconnection Procedures

It is necessary that customers be protected from improper disconnection of service in a competitive environment, just as regulations have protected them from improper disconnection by the monopoly provider. Since the distribution company will remain regulated, disconnection procedures are unlikely to need extreme revision. Most states are simply clarifying that their existing provisions will apply to alternative providers as well as incumbent distribution companies. For example, most states protect customers from disconnection during extreme weather conditions, for medical reasons (such as life support equipment), and for nonpayment of unregulated services (such as appliances).

Conclusion

Successfully anticipating customer needs is critical to achieving a robust competitive energy market. This statement is as true for states as they restructure energy markets as it will be for the competitors in that market. Florida has a special challenge in that 88% of all electric accounts in the state are residential. Unlike business and industrial customers, residential customers are not as used to negotiating rates for essential services. Residential customers will need help and guidance to make the adjustment to retail competition in the electricity market. Based on Florida's characteristics, our experiences in telecommunications deregulation, and our review of methods adopted by other states, we believe the following customer issues should be addressed in Florida through rulemaking or legislation.

* Consumer protection
* Consumer education
* Minimum service standards
* Provider of last resort
* Standard service packages
* Aggregator companies
* Billing practices
* Universal service

5. PUBLIC PURPOSE PROGRAMS

This issue involves public purpose programs whereby the benefits of the programs accrue to society in general as opposed to individuals. Programs include, but are not limited to, low income assistance, universal service, conservation and energy efficiency measures, renewable resources (wind, solar etc.) and research and development. In a monopoly market, regulation or legislative mandate has been the driving force to achieve these programs at more than a minimal level. At issue in a competitive market is continuation of some level of these programs so that their benefits do not become stranded. A competitive market will not recognize the external costs associated with providing electric service.

States that have already opened their electric market to competition have funded continuing programs through either general tax revenues or some form of a system benefits charge. A systems benefit charge is a surcharge or rider placed upon the distribution portion of the customers bill. It is applied on either a per kilowatt hour or on a per bill basis. By being placed on the distribution bill, the charge is unavoidable or nonbypassable and charged to all electric customers regardless of generation source. A different variation is to fund some programs through the generation suppliers. Under this option, a program is identified and a set annual amount is determined to fund the program. Each generation company contributes a portion of the target budget based upon the percentage of its retail electric sales compared to total sales. These funding mechanisms can be applicable to all programs and place no individual utility at a competitive disadvantage.

LOW INCOME ASSISTANCE

A major concern in restructuring is that low income customers have little market power and are not an attractive market sector for competition. Additionally, for Florida utilities, either funding or collecting funds to assist low income customers is external to the cost of providing electric service. Presently, Florida's privately owned electric utilities have limited involvement in low income assistance. Some utilities have voluntarily implemented "Good Neighbor Programs" where customers can check a box on their bills to donate $1.00 or round up their bill with the funds going to social agencies. Some utilities contribute funds directly to social welfare agencies to assist low income customers to maintain electric service. However, these efforts are voluntary and not substantial. Federal funds are also available through the Low-Income Home Energy Assistance Program (LIHEAP) and other agencies for direct help in paying bills, weatherization and other measures to reduce bills.

States that have involved utilities through universal service have generally placed a surcharge on the distribution portion of electric bills, either on a per bill or per kwh basis, with the funds going to the agency which administers the program. For utilities to collect funds as part of the bill for assistance programs, it appears the legislature must explicitly state that universal service is a state goal and mandate utility involvement in funding the plans. Restructuring legislation could also provide an opportunity to consolidate low income energy assistance programs under one agency for administrative efficiency. However, it appears, as with the existing monopoly market structure,

that an adequate level of direct assistance for low income customers is available without mandated direct involvement by Florida's utilities.

CONSERVATION AND ENERGY EFFICIENCY MEASURES

Since 1980, Florida has collected over 2 billion dollars through its Conservation Cost Recovery Clause. These programs were legislatively mandated by the Florida Energy Efficiency and Conservation Act (FEECA) and are funded through a per kwh surcharge on all customer bills. Approximately 90% of the funds are used on load management with the remainder on energy audits, rebates and other conservation measures.

Under the present monopoly structure, electric utilities benefit from conservation and energy efficiency measures. Since electric utilities are required to have adequate load available to serve their given territories, it is sometimes more cost effective to fund efforts to reduce usage than construct additional plants. This avoided cost benefits both utilities and ratepayers.

At issue in a competitive generation market is the incentive for generation providers to participate in these programs when profit and market share are priorities. Transmission and distribution companies also have little incentive to implement programs which directly impact generating companies.

We believe that consideration should be given to continuing at least some level of conservation and energy efficiency measures. However, defining, implementing and funding these programs is complicated by jurisdictional and structural considerations. If the existing programs are to continue, in whole or in part, the legislature would need to consider their applicability to all energy providers, the magnitude of the funding, how costs are assigned, and whether there would be a periodic review and evaluation of the program results. Funding could continue as is, with the surcharge being placed on the distribution companies' bills.

RENEWABLE RESOURCES

Florida's investor owned utilities presently do not use wind, geothermal or hydro as electricity sources because they just do not exist. While demonstration projects can be found for solar, it is presently not cost effective for electric generation even in the "sunshine state." Some states have required a renewable portfolio standard which requires a specific percentage of the state's annual electric use or capacity to come from renewable energy. Under this proposal, Florida would basically be paying other states to provide renewables for us since we have none of our own. It is not clear what benefit this would be to Florida, since we would still have to generate to meet load. Some states have required generating companies to contribute to a fund offering loans, grants and other incentives to promote investment in renewable resources. Under this option, a program is identified and a set annual amount is determined to fund the program. Each generation company contributes a portion of the target budget based upon the percentage of its retail electric sales compared to total sales.

Due to the general unavailability of renewable resources in Florida, it appears allocating resources to these programs is not prudent at this time. However, continued research in more efficient and cost effective solar technology or in other areas deemed beneficial to the state could be achieved through research and development as discussed in the following section.

RESEARCH AND DEVELOPMENT

In a monopoly environment, research and development (R&D) of new technologies and ways to increase operating efficiency has been a cooperative effort among utilities. Through payment of dues to the Electric Power Research Institute, projects were selected and research conducted to benefit the entire industry. Absent competition, each utility shared the benefits of R&D to enhance service in their respective service territories. Restructuring has brought forth the competitive attitude of "every man for himself." Utilities are reluctant to contribute funds for research which will benefit a competitor. Additionally, utilities which provide only distribution, transmission or generation service have little incentive to fund projects relating to services they do not provide.

In a competitive market, each utility has a strong incentive to internalize R&D in an effort to find more cost effective means to provide service and stay ahead of competitors. For Florida, a competitive market should provide the incentive for utilities to conduct R&D in areas they deem beneficial to their operations. However, if the legislature believes it is beneficial to the state to conduct R&D in other areas such as solar or energy efficiency matters, a state agency could be given administrative oversight over an R&D program. This agency could screen and select appropriate projects with funding coming from a systems benefit charge as previously discussed.

CONCLUSION

If the legislature determines that Florida's retail electric market is to be open to retail competition, it must determine if existing programs are to be maintained at the same level, expanded, modified, discontinued or left to the market. For plans that will be continued, the legislature must determine the level of involvement for electric utilities and whether they will have a role in implementing or administrating certain programs or be solely involved in providing or collecting funding.

Regarding low income assistance, it appears, as with the existing monopoly market structure, that an adequate level of assistance for low income customers is available without mandated direct involvement by Florida's utilities. Additionally, regardless of market structure, we believe it is beneficial for Florida to continue some level of conservation and energy efficiency programs to decrease load requirements and conserve resources. Due to the general unavailability of renewable resources in Florida, it appears allocating resources to these programs is not prudent at this time. However, continued research in more efficient and cost effective solar technology or in other areas deemed beneficial to the state could be achieved through the legislature designating a state agency with administrative oversight over Research and Development programs. This agency could screen and select appropriate projects with funding coming from a systems benefit charge as previously discussed.

PUBLIC PURPOSE PROGRAMS

Existing conservation and energy efficiency programs were legislatively mandated by the Florida Energy Efficiency and Conservation Act. It would appear that the inclusion or continuation of public purpose programs in a competitive environment would require legislative action followed by commission rulemaking, as needed. If Florida implements retail competition and wishes to pursue public purpose programs, legislative action would be needed to accomplish the following:

- Mandate utility involvement in collecting funds or administering portions of low income assistance plans.
- Determine a funding mechanism and what, if any, conservation and energy efficiency programs will continue and at what level?
- Determine if it is beneficial to the state to pursue renewable resources and in what manner?
- Determine a funding mechanism and whether a state agency should be given authority to develop a research and development program for energy related matters.

6. RELIABILITY

Defining Reliability

Reliability cannot be easily or unambiguously defined. A reliable electric system is one that allows for few involuntary interruptions of service to customers. Outages can be described in terms of number, frequency, duration, amount of load and number of customers affected. Reliability can be further described in terms of adequacy and security.

Adequacy means providing sufficient generation, transmission and distribution capacity to supply the aggregate electric power and energy requirements of consumers, taking into account scheduled and unscheduled outages of system facilities. Adequacy issues tend to be long term in nature (days to year) and amenable to market incentives and interactions to address both the amount of electric power and energy service required by consumers and the number of suppliers in the market to provide service. Adequacy implies that there are sufficient generation and transmission resources installed and available to meet projected needs plus reserves for contingencies. Adequacy is another name for System Planning Reliability.

Security means designing, maintaining and operating an already built system so that it can handle emergencies safely while continuing to operate. Security issues tend to be short term in nature (seconds to hours) and require activation and operation of automatic protection devices. These issues generally involve intervention by a system operator. Security implies that the system will remain intact even after outages or other equipment failures occur. Security is another name for Operational Reliability.

While most states have given considerable thought to security or operational reliability concerns, much work remains to be done in respect to planning reliable adequacy. Most states are relying on the newly developed Regional Transmission Organizations (RTO) to assure day to day operational reliability. Since regional coordinating councils and the National Electric Reliability Council have established long accepted standards, the assumption of operational control should go relatively smoothly. Furthermore, a number of national organizations are working diligently to coordinate the standards and market rules that will be adopted all across the county. These organizations are addressed later in this section.

How Reliability is Handled Now

The North American electric system is comprised of an interconnected network of generating plants, transmission lines and distribution facilities. These transmission systems are divided into three regional grids: the Eastern Grid, the Western Grid, and ERCOT that operates in Texas. These networks provide electric utilities with alternative power paths in emergencies and allow them to buy and sell power from each other and from other power suppliers. Within these three large areas, many utilities operate separate reliability councils and, within councils, individual utilities operate control areas.

The structure of the grid makes reliability possible, but what makes it a reality is the coordination in operations of the electric companies that make up the network. At first, utilities interconnected to increase reliability. With transmission interconnections, utilities were able to rely

on emergency generating assistance from neighboring utilities during major generating unit outages. Because of the enhanced reliability gained by these mutual assistance agreements, the need to maintain surplus reserve generating capacity for each utility was reduced. This reduced each utility's costs of providing reliable service. From these early beginnings, competition in the wholesale supply of generation emerged.

For the electric power grid to work smoothly, a transmission operator must be aware not only of the power flowing over its own system created by its own generators and the electricity demand of its customers, but it must also be aware of the transfers of power between other systems and how those transfers might flow through its own system. To coordinate power flow, control areas have been formed. Control areas consisting of one or several transmission operators ensure that there is always a balance between electricity generation and the amount of electricity needed at any given moment to meet demand. Operators use computerized systems to exercise minute-by-minute control over the network and ensure that power transfers occur during specified times in prearranged amounts.

Key Reliability Institutions

Within the United States, three groups or institutions play key roles in the area of bulk-power reliability: System Operators, the North America Electric Reliability Council (NERC), and the Federal Energy Regulatory Commission (FERC).

1. System Operators and Security Coordinators, as mentioned before, rely on communication with each other, access to essential system information, and real time monitoring and control of certain facilities to maintain system reliability. When an emergency occurs on the system, the control area operator acts--both through communication and direct physical action--to ensure the integrity and security of the system.

2. The NERC was established in 1968 by electric utilities. This voluntary membership organization was created as an alternative to government regulation of reliability. The NERC develops standards, guidelines, and criteria for ensuring system security and evaluating system adequacy. The NERC is funded by Regional Reliability Councils, which adapt the rules to meet the needs of their regions. Through the work of its ten Regional Reliability Councils, the NERC has largely succeeded in maintaining a high degree of transmission grid reliability throughout the country.

The NERC is comprised of ten Regional Reliability Councils that account for virtually all the electricity supplied in the United States. Once a member of the Southeastern Electric Reliability Council (SERC), Florida formed its own Regional Reliability Council in 1996 called The Florida Reliability Coordinating Council (FRCC). The FRCC was established to ensure and enhance the reliability and adequacy of bulk electricity supply in Florida, now and into the future. FRCC members include investor-owned utilities, cooperative systems, municipals, independent power producers, federal systems, and power marketers. All FRCC members are full voting members. The activities of the FRCC are directed by its Executive Board. The Board is comprised of the top level executive from each member of the FRCC. The technical activities of the FRCC are carried out by

its Engineering and Operating Committees. These committees, and their subcommittees, are comprised of managerial and technical representatives from the members of the FRCC. These representatives provide the expertise necessary for the planning, engineering, setting of operational standards, capacity requirements, and operating aspects of electric system reliability. A permanent staff is located in Tampa, Florida, providing day-to-day coordination and support.

3. The FERC is the Federal agency having jurisdiction over the bulk power market, including interstate transmission systems. As part of these responsibilities, the FERC implements policies to ensure that the owners and operators of bulk power transmission facilities under the agency's jurisdiction provide nondiscriminatory service to all power suppliers in wholesale power markets. Historically, the FERC has not had to involve itself with regulation reliability functions. Increasingly, some parties are calling upon the FERC to exercise its current authority by addressing reliability issues that intersect with commercial needs of the industry.

Establishment of NAERO

The "Electricity Competition Act of 2000" (S. 2071 which passed the U.S. Senate in June, 2000) transfers all electric system reliability standard setting, enforcement and management to a private entity, the North American Electric Reliability Oversight System (NAERO) with backstop and oversight from the FERC. The users and operators of the coordinating councils, who used to cooperate voluntarily on reliability matters, are now competitors without the same incentives to cooperate with each other or comply with reliability rules. A common concern is that coordinating councils will not work after the electric industry becomes deregulated. Therefore, in August 1997, the NERC assembled the Electric Reliability Panel for a specific task: to recommend the best ways to set, oversee, and implement policies and standards that ensure the continued reliability of North America's interconnected bulk electric systems in a competitive and restructured industry. The result was a report, "Reliable Power: Renewing the North American Electric Reliability Oversight System," presented to the NERC on December 22, 1997. In the report, the panel stated its belief that the introduction of competition within the electric industry and open access to transmission systems require creating a new mandatory organization that has the technical competence, unquestioned impartiality, authority, and the respect of participants necessary to enforce reliability standards on the bulk electric systems. Thus, the concept of NAERO was born.

What is the States' Role in Reliability?

The States are in the best position to ensure that grid security is maintained due to special regional circumstances with which the individual states involved are more familiar. Florida, a peninsular state with limited transmission ties to the rest of the country, has somewhat unique circumstances due to its geography. The FPSC closely monitors the activities of the FRCC and provides input into the specific standards that the industry sets at the state level. In Florida, this system seems to be working quite well. Where agreement cannot be reached, the FPSC has ultimate authority to resolve disputes and establish standards through rulemaking on its own motion.

With respect to the distribution system, no new statutory and regulatory mechanisms are needed at the federal level. States are fully capable of regulating distribution systems to ensure safe

and reliable service. States can assure that distribution services continue to be reliable, provided that their authority to regulate local services and facilities is not preempted by congressional legislation. Likewise, the actions of individual States can assure the reliability of the interstate transmission system. The system has been reliably maintained through State regulation of the need for and siting of transmission facilities and voluntary adherence by industry to NERC standards.

It should be noted that although many states are not presently setting standards for grid security or enforcing such standards, they may have the authority to do so where necessary. This authority should not be stripped from the states and transferred to the federal government which is not as familiar with the individual state and regional characteristics that discourage a "one-size-fits-all" approach to ensuring electric system security.

FPSC's Specific Activities Regarding Grid Security:

- The FPSC works closely with the Florida Reliability Coordinating Council (FRCC) in an advisory role and has adopted in its rules some of the FRCC's plans for dealing with electrical emergencies in the state.
- The FPSC has authority over retail service priorities and curtailments.
- The FPSC requires utilities to file reports containing outage information annually.
- The FPSC has taken an active role in the resolution of customer complaints regarding the reliability of service from native utilities.

Florida's role in standard setting and enforcing grid security issues:

Due to the industry's voluntary adherence to the NERC reliability standards as well as to the more specific reliability standards set by the Florida Reliability Coordinating Council (FRCC), the FPSC's involvement in grid security issues has been somewhat limited. However, Florida Statutes grant the FPSC significant authority in this area so that as reliability problems arise, the FPSC may take action, as needed, to resolve them:

> **Florida Statutes, Chapter 366.04(2)(c):**
> In the exercise of its jurisdiction, the commission shall have power over electric utilities for the following purposes: . . . (c)To require electric power conservation and reliability within a coordinated grid, for operational as well as emergency purposes.
>
> **Florida Statutes, Chapter 366.04(5):**
> The commission shall further have jurisdiction over the planning, development, and maintenance of a coordinated electric power grid throughout Florida to assure an adequate and reliable source of energy for operational and emergency purposes in Florida and the avoidance of further uneconomic duplication of generation, transmission, and distribution facilities.

Florida Statutes, Chapter 366.05(7):
The commission shall have the power to require reports from all electric utilities to assure the development of adequate and reliable energy grids.

Florida Statutes, Chapter 366.055(1):
Energy reserves of all utilities in the Florida energy grid shall be available at all times to ensure that grid reliability and integrity are maintained. The commission is authorized to take such action as is necessary to assure compliance. However, prior commitments as to energy use under these three circumstances: (a) In interstate commerce, as approved by the Federal Energy Regulatory Commission; (b) Between one electric utility and another, which have been approved by the Federal Energy Regulatory Commission; or between an electric utility which is a part of the energy grid created herein and another energy grid, shall not be abridged or altered except during an energy emergency as declared by the Governor and Cabinet.

Florida Statutes, Chapter 366.055(3):
To assure efficient and reliable operation of a state energy grid, the commission shall have the power to require any electric utility to transmit electrical energy over its transmission lines from one utility to another or as a part of the total energy supply of the entire grid, subject to the provisions hereof.

Reliability at Each Level

The generation, transmission, and distribution sectors of the industry will each require a separate set of standards and, because of their nature, probably separate enforcement mechanisms. Likewise, each separate and distinct sector of the energy product will require its set of standards. Explicit standards for each segment may be critical as they are divested from each other to ensure accountability between Federal and State jurisdiction. Enforcement of these standards can and should include incentives, as well as disincentives, as they apply to each component of the energy product. While standards would need to be set by a technical committee representing the state or region, most of the required technical standards are already available within the industry and would not require significant reinvention.

Reliability at the Generation Level

Each State's traditional role has been an active one when siting new generation facilities. The other portion of the state's role has involved the consideration of need for additional facilities. Historically, utilities planned for and built powerplants to meet a predetermined reserve criterion, typically a 1-day-in-10-years loss-of-load probability or a minimum installed reserve margin. This is determined by load forecasts, location needs, economic analyses and reliability needs. This process has served to prevent the construction of unneeded generation to ensure low rates for consumers.

In Florida, the reliability of the generation system is measured using an evaluation of the capacity required to ensure that the probability of load exceeding capacity shall not be greater, on

average, than one day in ten years. The amount of installed generation capacity which exceeds the forecasted annual peak load is the generation reserve margin. Utilities currently maintain a minimum of 20% capacity reserve margin in order to ensure service to all firm customers during peak load conditions. This requires significant expenditure of economic resources to develop and maintain generating facilities that may operate only during peak conditions.

In the future, in a market based model for providing adequate generation resources, decisions on retirement or repowering of existing generators and the construction of new units are likely to be made by investors with much less regulatory involvement. State government will still oversee the siting and environmental consequences of these decisions. But in States with retail choice of generation suppliers, "the market," rather than economic regulation, will decide which supplies are needed and are economical. Generators will be built when projected market prices of electricity are high enough to yield a profit. When demand begins to exhaust the available supply, prices will rise, sometimes sharply, which in turn will suppress demand and induce investment in new supply. It is the level, frequency, and duration of these high prices that will signal markets to build more generating capacity and transmission lines, rather than the decisions of planners in vertically integrated utilities. However, most states are continuing to oversee the siting and environmental certification, as well as the capacity obligation on a planning basis, until both buyer and seller have a better understanding of how market-based reliability would be implemented and enforced.

Reliability at the Transmission Level

The transmission grid is a large machine that respects no state boundaries. It is difficult, if not impossible, for an individual state to control aspects of the machine outside its borders. Therefore, the primary assumption is that interstate transmission use would continue to be regulated primarily by the federal government and the State will take a secondary role in many instances. However, the State will continue to play an important role, at least in questions of siting and need, planning, and how the various transmission-related organizations will interact with each other.

In a restructured industry, wholesale transmission system operations will be regulated by the FERC and controlled by regional organizations, while state agencies will continue to regulate retail services. The question of how state regulatory agencies' interface with regional transmission operators and the FERC could influence transmission planning, efficiency, and reliability of service.

Reliability at the Distribution Level

The primary assumption underlying distribution reliability is that the provision of the distribution wire services will continue to be a monopoly regulated service much in the same way as it is now. That is, state-level regulation of rates, conditions of service, and other facets of distribution wire services from utilities would not change. As a regulated entity, regulators will have the opportunity to levy penalties or create incentives to ensure adequate investment. From a reliability perspective, the concern is that the distribution utilities must have incentives, either positive or negative, to make needed investments in a distribution infrastructure so that customers can receive energy as needed. In the future, incentives in the form of performance-based rate making including penalties for non-performance could be used.

Among opponents of restructuring, there is a serious concern that the reliability and integrity of a distribution system may decline over time if the electric industry were to enter an era in which price is the predominant factor guiding the choices of nearly all consumers. However, proponents of a restructured environment believe, if certificated service territories remain in place for the distribution function, the unbundled distribution cost of service can be accurately calculated with adequate provisions for maintaining reliability and integrity. Some believe that only by maintaining a certificated area for distribution service can all consumer classes have fair and equitable access to the generation and transmission marketplace. This is important since generation and transmission generally represent 70% of the consumers' cost. Furthermore, by maintaining the certificated area concept for the distribution function, all customer classes will have fair and equitable access to the market regardless of whether they reside in rural or urban areas.

Conclusion

The FPSC has an important role in ensuring the adequacy of the bulk power system. Under the Power Plant Siting and Transmission Line Siting Acts the FPSC must determine the need for additional generation and transmission facilities. Chapter 366, F.S., gives the FPSC specific authority to maintain, plan, and develop a coordinated electric power grid. Under a wholesale competitive system it is anticipated the FPSC would continue to have the role of setting and monitoring the reserve margin and generation reliability standards. However it is unclear what the FPSC role would be in a full retail access environment.

Several states are relying on the creation of RTOs or ISOs to ensure reliability of the transmission system. RTOs/ISOs currently operate in California, the mid-Atlantic region, New York, New England, and Texas, and are under development in the Midwest. Other utilities are likely to form RTOs in response to the FERC's December 1999 Order No. 2000. Because RTOs own no generation, they are suppose to assure market participants of unbiased treatment and nondiscriminatory access to the transmission grid. RTOs generally have a large regional scope, thus they can manage transmission congestion and other reliability problems with more ease than small, independent entities, each operating only a small part of the grid. These RTOs regulated by FERC need to ensure that a strong federal/state working relationship is developed. The FPSC should ensure fair and reasonable interconnection standards developed under the auspices of the RTO/ISO. Preferably these standards would be codified in an FPSC rule. With pending legislation in Congress to establish a mandatory reliability organization the boundaries between state authority for transmission reliability are unclear.

As the generation portion of electricity becomes open to competition in numerous states, most PUCs and other state permitting agencies still oversee generation siting as well as environmental decisions, while taking a "leap of faith" and allowing "the market" to decide when new generation suppliers are needed. Most states retain their jurisdiction over the transmission and distribution portion, for which reliability should continue to be judged by complying with NERC and regional reliability criteria. Under numerous states' regulations, the PUC monitors the performance and reliability of the distribution systems based on industry-accepted performance indicators and will require annual filings of utility performance results. These reliability indices

measure the performance of the transmission and distribution systems in terms of the frequency and duration of unplanned electric service outages to ensure that current levels of reliability do not deteriorate. Other than requiring annual filings of utility performance, the FPSC may need to formally set distribution system standards.

7. ROLE OF STATE UTILITY COMMISSIONS

The ultimate goals of electric restructuring, as previously stated, are lower rates to consumers and enhanced economic development. Determining whether these goals are achieved will be a complex task. Consideration of the time necessary for these benefits to develop will be required as well as monitoring the development of other necessary conditions for success. It is safe to assume that any positive effects of restructuring will be more long term in nature. Thus, it is necessary for states to develop measures to determine if restructuring is producing the desired effects or is, at least, fostering the development of conditions which will ultimately produce the desired effects.

Just as each state has approached electric restructuring slightly differently, so each state utility commission's role in implementing electric restructuring varies as to the degree of involvement in the process. Most state utility commissions have been charged with creating and enforcing rules necessary to advance a competitive electric market. State utility commissions also continue their role of protecting consumers from market power abuses and unfair business practices. A state commission's role in the regulation of rates is generally limited to transmission and distribution companies and treatment of stranded costs. With regard to reporting requirements, most commissions are responsible for providing reports on the status of competition to their state legislature, commonly on an annual basis.

Reporting Requirements

In reviewing the states which have proceeded with restructuring there were four entities that were given responsibility for follow-up requirements: utilities, state PUCs, state PUC staff, and independent task forces. Several states required follow-up by more than one of these entities. The following are the methods of reporting:

(1) **Utilities report to the state PUC** (Arizona, Delaware, Texas),
(2) **State PUC staff reports to state PUC commissioners** (California, Maryland, Michigan, New York),
(3) **State PUC commissioners report to their state legislature** (Arkansas, California, Connecticut, Illinois, Maine, Massachusetts, Michigan, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Pennsylvania, Rhode Island), and
(4) **An Independent Task Force reports to the state legislature** (Montana, Oklahoma, Oregon, Virginia).

The required elements for reporting by each entity vary widely from state to state. However, these elements fall generally into three broad categories: competitive market indicators, system reliability, and consumer protection.

Competitive market indicators includes several subcategories such as: the array of service options available; the number of providers available; market accessability by providers both in and out of state; demand measures; supply measures; status of cogeneration and self generation markets; transmission rates; rate levels; and market power assessments.

System reliability is not a competitive outcome so much as a serious concern as the industry transitions to a new structure. It is necessary to establish measures to quantify that the system reliability is not degrading as market participants attempt to streamline and become more competitive. These measures include safety and service standards such as frequency of inspections, levels of maintenance expenditures and emergency and back-up service standards.
Outage information is also required by most states.

Consumer education and protection information is necessary to ensure customer confidence and understanding in restructuring. Reporting on consumer education activities by utilities and state PUCs is a common requirement as well as standardizing of customer billing format and uniform bill disclosure information. Designation of a default service provider is standard practice. Other requirements focus on the price impacts to consumers by monitoring participation in low-income benefits programs. Finally, many states are monitoring consumer complaint activity.

Rule Development

Most state utility commissions were directed by their state legislature to promulgate rules to implement electric deregulation legislation. Rulemaking proceedings before state commissions generally involve a workshop or consensus approach in which all stakeholders have the opportunity to provide input as the rule is crafted. However, the state commission is responsible for the final version of a proposed rule (subject to judicial appeal). Electric restructuring also often necessitates the deletion or modification of rules which are no longer needed under a competitive system.

Consumer Protection

Utility commissions will continue to assist consumers with disputes against transmission and distribution companies. Regulators have learned from the telecommunications industry and expect to receive complaints about unauthorized switching of generation providers (slamming) and inappropriate billing of services (cramming). It is advisable that prohibitions and strong penalties against such practices be included in electric restructuring legislation or rulemaking. Financial penalties for rules violations are common in many states (New Mexico, Delaware, Maine, Michigan, Maryland, and Pennsylvania).

Consumer Education

Most states have also attempted to achieve a smooth transition from a regulated to a deregulated retail generation market by including provisions for educating consumers about electric restructuring. This role is usually fulfilled by the state utility commission (Maryland, Nevada, New Mexico, New York, Oregon, Texas, Virginia, and West Virginia). Though advertising as a result of natural competition in the marketplace can be expected to help educate consumers, it remains important for utility commissions to provide an unbiased source of information to consumers and be available to both anticipate and answer questions about the changing marketplace.

Universal Service

Low-income programs that existed prior to the deregulation of generation will continue to be funded under electric restructuring in such states as Montana, Texas, Maine and Ohio. Some

states have added a universal systems benefits charge to the distribution bill to fund such programs (Montana, Massachusetts, New Mexico and Connecticut).

Energy Conservation

Increasing energy conservation and providing service through renewables are important issues to many customers and several state commissions are addressing these issues as well (Montana, Texas and California).

Certification

Traditionally, states have required monopoly providers of electricity to hold a certificate prior to providing electricity for resale to end-user customers. Under deregulation, it appears almost all state utility commissions will continue to require and enforce some type of certification or registration system for retail providers of electricity. In fact, several state utility commissions will revoke or suspend a company's certificate to operate if the company is found to have violated the commission's electric restructuring rules.

Rate Design

Some states intend to impose a "competition transition charge" to offset the utilities' costs of converting to a restructured environment. The competition transition charge is typically adjusted annually. Restructuring legislation often requires state commissions to create and/or implement methods for dealing with stranded costs through rulemaking, case by case hearing, or both.

Restructuring legislation preserves the state utility commission's jurisdiction over distribution companies and the amount such companies can charge retail customers for transmission and distribution (Illinois, Maine, Maryland, Michigan, New Hampshire, New Jersey, Delaware, Montana, Pennsylvania, Texas, and Virginia).

Market Monitoring

Several states have unique practices in regard to monitoring the status of electric competition within their state. Some of these state “best practices” include: California in preparing monthly reports for their Commissioners and maintaining them on their website for the general public to access, Michigan whose PUC holds public hearings and receives written comments by the public regarding their perception of electric restructuring, and Maryland that organizes and chairs “Roundtable” discussion on unresolved issues in a structured settlements process.

Conclusion

If Florida pursues electric restructuring it would be appropriate to develop reporting requirements in all of the areas noted above: competitive market development, consumer education and protection, system reliability. Crafting rules to carry out legislative intent with regard to regulated industries and to fairly balance customer and company interests has historically been an integral part of the Florida commission’s role. The changing dynamics of Florida’s energy market will make that role even more critical in the future, to protect the state’s interests in the areas of service quality, safety and reliability.

The Florida Public Service Commission would be the logical entity to develop measures and conduct follow up analysis to report back to the legislature and the Governor as well as making this information available to the public. The Commission should recommend to the legislature what it believes are the appropriate measures but should have the latitude to collect additional information as the need arises.

The Florida Commission should begin now to develop specific measures to assess the success of electric restructuring in our state. The above stated goals of lower rates to consumers and enhanced economic development may take years to be achieved. It will be necessary to develop measures to assess, in the short run, whether conditions exist that will enhance the likelihood of achieving those goals without sacrificing quality of service and reliability. Those measures should focus on the following:

* Competitive market indicators
* Monitoring the status of retail competition
* Monitoring system reliability
* Developing reporting requirements
* Developing consumer protection rules
* Developing interconnection standards
* Developing service standards
* Developing measures of success
* Developing consumer education programs
* Enforcement activities
* Rate monitoring
* Universal service goals

Many of these measures are applicable to Florida and we should begin now to tailor these measures to the unique characteristics present in Florida.

III. CONCLUSION

Electric restructuring generally describes the movement along a range of methods to structure the electricity market. At one end of the range is fully regulated monopoly electric services and at the other end are fully competitive generation, metering and billing services. When moving along the range from regulated to competitive markets, a necessary condition is wholesale generation competition. Wholesale generation competition is generally a prerequisite to the subsequent steps in the movement towards retail competition. The electricity market must have a fully competitive wholesale generation market before it can sustain a competitive retail generation market.

This paper primarily focuses on the policy implications of moving towards retail competition, however, since Florida does not have a fully competitive wholesale market, it also discusses policy steps needed to create a more competitive wholesale generation market. The 24 pioneer states that have already adopted electric restructuring provide a valuable laboratory for Florida to examine what restructuring policies seem to be working and which to avoid. While it is much too soon to draw firm conclusions on whether electric restructuring will be good for consumers in the long run, some early observations can be noted. The longest any state has been restructured, up to this point, is two and a half years and that is not long enough to determine if the retail generation market will benefit all classes of customers. For example, proponents of retail access argued substantial reductions of rates would occur. However, the examination of energy rates nationwide from 1995 to 1999 indicate that rates for nearly all states are on a downward trend. This is equally true for states that have not adopted electric restructuring. Thus, electric restructuring can not take credit for the current rate declines. Further complicating any analysis involving the examination of energy rates is that many states adopting electric restructuring have also mandated a rate reduction or freeze.

One clear beneficiary of electric restructuring is industrial customers who may not have cost based rates initially. Of those states that have adopted electric restructuring, the customer class that has taken the greatest advantage of the opportunity to switch generation providers has been the large industrials. Few residential customers have switched to competitive providers. This result is not unlike those in the telecommunications or airline industries where larger users tend to benefit the most from deregulation.

While two and a half years may not be long enough to identify the benefits of electric restructuring, it certainly is long enough to identify some of the problems. Nationwide the types of problems that can be seen involve the cost to set up the program, customer confusion, and the volatility of the energy prices.

The infrastructure cost of electric restructuring is not trivial. There is a cost to set up a regional transmission organization and/or a power exchange. Whether these organizations are set up by the state or by a privately held companies, the customers will still pay for those expenses. The state of California estimates it spent $300,000,000 on electric restructuring by setting up an RTO

and a power exchange market. The Texas RTO estimates it will spend approximately $100,000,000 setting up an RTO in that state. These expenses are passed on to consumers through increases in the cost of transmission or through competitive transition charges. Restructured states are expecting that this increase in the cost of transmission will eventually be offset with declines in the price of energy resulting from retail competition in the generation market. It is not clear from our analysis that current retail competition is bringing energy prices down, however, it is clear that prices are more volatile.

An additional cost associated with establishing a competitive retail generation market includes allowing the utilities to recover stranded investment. For some utilities, the costs are in the millions of dollars and those expenses are passed onto all customers.

Another major expense is customer education. State PUCs must play a role in educating customers and providing them with an objective source of information. Whether the state assumes the entire role of customer educator or shares it will the utilities, those expenses are still passed onto customers. The need for customer education leads to another problem resulting from electric restructuring, confusion. Residential customers, particularly, tend to think of electricity as one commodity provided by one utility. They do not understand that the provision of electricity is comprised of generation, transmission, and distribution. Thus, when they hear about electric restructuring and an increase in competition, residential customers incorrectly think they will be selecting a new distribution company. The concept of selecting a new generation provider is foreign to them and for many not worth the bother of having to learn and understand what is involved in selecting a new generation provider. If residential customers are to participate in retail competition then a large effort must be made to help them understand the process and accept the intrusion associated with direct marketing, sifting through various plans, and other information search costs. Additionally, customers must be educated to prevent them from becoming potential victims of deceptive practices, such as slamming and cramming.

Thus far one problem associated with electric restructuring is greater volatility in energy prices. As the energy market evolves from one where it was fully government regulated to one where market forces will regulate the prices, the energy prices will fluctuate. In this situation all parties are learning how to adjust to market changes and mistakes and mid-stream corrections will need to be made. This has been most evident in San Diego, California where through a combination of extremely hot weather along with its dependence on other states for energy production has left them with very high energy prices.

In theory, adopting electric restructuring should bring about lower energy prices, more services and products, and better service in the future. However, there is a great distance between theory and reality in the energy market today. It appears that many states are adopting electric restructuring without clearly identifying what goals they wish to achieve and setting review standards to ensure that they reach those goals. Evidence indicates that few states have undertaken vigorous evaluations (measures of success) to see if the benefits of competition are being realized or what section of the market is realizing them. Policy makers need to design evaluation criteria

recognizing that not all customer classes will be affected equally by the transition to retail choice. Well developed evaluation criteria will assist in determining whether restructuring has been successful.

FLORIDA SPECIFIC

Restructuring the electric energy industry into the discrete components of generation, transmission and distribution with the goal of providing competitive retail choice to end users is a tremendously complex endeavor which will require consideration of and attention to a great many details. Among the more pressing of those details are the formation of an RTO and the facilitation of a more workable competitive generation market. Without an independent transmission network and a competitive generation market, retail competition will not evolve to the degree necessary to provide benefits to consumers.

Before Florida undertakes a major effort to restructure the electric industry in order to embrace retail competition, policy makers should first give serious consideration to restructuring the electric market to stimulate a robust wholesale generation market. As discussed in chapter two, if Florida is going to gain any benefit from electric restructuring it must remove obstacles to permitting and siting new generation to assure an adequate supply of energy for a robust generation market. Given the Duke Decision[6], the Florida Power Plant Siting Act and Transmission Line Siting Act presents several obstacle that will need to be modified to permit independent energy providers and new transmission lines to be permitted and constructed here. Only after Florida has a fully competitive generation market, should Florida take those steps necessary to pursue a retail generation market.

If the Florida Legislature considers adopting electric restructuring changes to stimulate a competitive retail market, there are a number of issues that it should consider given the unique characteristics of this state as compared to other states. The following are issues that become apparent when examining Florida in regard to retail competition.

Market Design

Tools used in other states to address market structure and power that have merit and are worth consideration in Florida include:

- Require utilities to file detailed proposals to restructure their operations by a date certain;

---

[6] The Florida Supreme Court in the power plant need determination joint request of the Utilities Commission of New Smyrna Beach and Duke Energy New Smyrna Beach Power Company decided that the PPSA only applies to utilities serving retail customers. This decision precluded Duke Power from building a new generation facility to serve part of New Smyrna Beach's load growth.

- Require unbundled customer bills now in advance of introducing retail competition;
- Phase-in electric restructuring, establishing wholesale competition then retail, and allowing industrial then residential;
- Establish appropriate monitoring of market power based upon market structure; and
- Require a plan to eliminate market dominance.

Stranded Costs

Any legislative initiative to move toward retail competition should address the issue of stranded costs and provide policy direction on how to handle this issue. A fair and balanced method to deal with stranded costs must be addressed on the front end. Every state thus far has made some provision to deal with those assets that were acquired by incumbent utilities in a regulated environment, but would not be usefully competitive in a deregulated environment. Statutory direction could prevent or minimize litigation by stakeholders that could delay the targeted implementation date for retail access.

While no detailed analysis has been performed on what generating and non-generating assets would be deemed to be unrecoverable by Florida utilities if retail choice was made available, cursory evidence would suggest that the stranded cost amount would not be extraordinarily large in Florida. The notable exceptions are purchased power contracts that the utilities were required to enter into by Federal law. Most of the nuclear units built in Florida were built on schedule and on budget and avoided the huge cost over-runs that plagued nuclear units in other states. In addition, regulatory practice in Florida has permitted the timely depreciation of these units along with the more expensive fossil steam units. Thus, these generating units should not have huge unrecovered plant balances on the books. Nonetheless, unrecovered book values are only half the equation. The final determination of stranded costs is based on what value the market assigns to these assets. Given different fuel projections and market conditions, the value of stranded assets could vary substantially. The impacts of stranded investment on new competitive markets should be mitigated, and minimizing or eliminating stranded investment will result in lower customer bills sooner. Additionally, periodic true-ups are an important tool to ensure timely recovery of appropriate stranded costs.

Principles to be considered by policy makers when considering the equitable resolution of stranded costs include:

- Policy makers determine what costs are eligible as potentially strandable;
- All reasonable mitigation efforts are required by the utility;
- Estimate stranded costs (after netting above market assets);
- Require periodic recovery adjustments to ensure timely recovery over the desired period;
- Fairly allocate recovery cost to the appropriate rate or customer class; and
- Consider securitization as one recovery technique.

Consumer Services

Consumer education will be expensive in Florida because 88% of all electric accounts in Florida are residential. This is very high in comparison to other states that have many more industrial/commercial accounts. Usually industrial/commercial accounts will have someone within the company that is knowledgeable about that company's energy needs and they will require less consumer education. However, with the majority of Florida's accounts being residential, a greater investment in consumer education will be required. Regardless of the method chosen to educate consumers, it will remain important for the Florida PSC to provide an unbiased source of information to consumers and be available to both anticipate and answer questions about the changing electric marketplace. Florida should begin now to develop strategies to educate consumers prior to the implementation of retail competition.

Florida's demographic composition, where it has a high percentage of senior citizens on fixed incomes, should be given serious consideration in regard to pricing volatility in the electric market. There is a substantial number of customers who live on fixed incomes and will not be able to adapt to a volatile energy market. Further, Florida's residential customers have high electric usage bills as compared to other states, because Florida has great extremes in its weather conditions that require air conditioning for most months of the year. Thus, when one combines a large residential class on fixed incomes with energy bills that comprise a large share of their expenses, it creates a situation where they will not be able to tolerate highly volatile energy prices.

The following customer issues should be addressed in Florida through rulemaking or legislation if electric restructuring is pursued:

- Consumer protection
- Consumer education
- Minimum service standards
- Provider of last resort
- Standard service packages
- Aggregator companies
- Billing practices
- Universal service

Public Purpose Programs

Existing conservation and energy efficiency programs were legislatively mandated by the Florida Energy Efficiency and Conservation Act. It would appear that the inclusion or continuation of these and other public purpose programs in a competitive environment would require legislative action followed by commission rulemaking, as needed. If Florida implements retail competition and wishes to pursue public purpose programs, legislative action would be needed to accomplish the following:

- Mandate utility involvement in collecting funds or administering portions of low income assistance plans.
- Determine a funding mechanism and what, if any, conservation and energy efficiency programs will continue and at what level?
- Determine if it is beneficial to the state to pursue renewable resources and in what manner?
- Determine a funding mechanism and whether a state agency should be given authority to develop a research and development program for energy related matters.

Reliability

Most states retain their jurisdiction over the transmission and distribution portion, for which reliability should continue to be judged by complying with NERC and regional reliability council criteria. Under numerous states' regulations, the PUC will monitor and set performance and reliability standards for the distribution systems based on industry-accepted performance indicators and will require annual filings of utility performance results.

The FPSC should have the authority to ensure that fair and reasonable interconnection standards are developed under the auspices of the RTO/ISO. Preferably these standards would be codified in an FPSC rule. With pending legislation in Congress to establish a mandatory authority reliability organization (NAERO) the boundaries between federal and state authority for transmission reliability are unclear.

Under a wholesale competitive system it is anticipated the FPSC would continue to have the role of setting and monitoring the reserve margin and generation reliability standards. However it is unclear what role the FPSC would perform in a full retail access environment.

The Florida PSC should continue to evaluate and monitor existing reliability standards relating to distribution. In addition, the Florida PSC should seek statutory authority (if necessary) to adopt new standards as appropriate to govern interconnection reliability issues between distribution companies and the RTO.

State Role and Follow-up

Developing measurement tools to gauge the success of competition in Florida is an important activity. The Florida Commission should begin now to develop measurement guidelines for the evolving wholesale market now. By developing measures of success for the wholesale market, the Commission will be in a better position to predict the type of policies that are most likely to be effective should Florida's retail electricity market become competitive. In order to effectively assess whether future competitive retail outcomes are successful, measures should be developed in the following areas:

- Competitive market indicators
- System reliability

- Reporting requirements
- Consumer protection rules
- Interconnection standards
- Service standards
- Consumer education programs
- Enforcement activities
- Rate monitoring
- Universal service

It is important to begin contemplating how the success of a competitive retail market could be measured as electric restructuring is being considered. By doing so, the Commission may be able to offer guidance as toow a competitive retail market should be designed in Florida.