

**PROCEEDINGS OF THE EIGHTH  
NARUC BIENNIAL REGULATORY INFORMATION  
CONFERENCE**

**Volume III: Multi-Utility**

**The National Regulatory Research Institute  
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Columbus, Ohio**



## FOREWORD

The objectives of the Eighth NARUC Biennial Regulatory Information Conference were to promote the sharing of knowledge and experience among the staff of NARUC member agencies and to introduce new concepts and techniques of regulatory analysis. With the participation of most NARUC staff subcommittees and the attendance of nearly 400 persons from 40 states and one foreign nation, the Conference, which was held in Columbus, Ohio, September 9-11, 1992, easily accomplished those objectives. The papers presented at the BRIC-VIII Conference are reproduced here in four volumes.

Volume I: Electric and Gas  
Volume II: Telecommunications  
Volume III: Multi-Utility  
Volume IV: Water

Within each volume, papers are arranged by Conference session. I believe that you will find these papers to be of high quality and of great use to the regulatory community.

The success of the Eighth NARUC Biennial Regulatory Information Conference was due in good measure to the work of the co-sponsors which are, in addition to the NRRI, NARUC, the NARUC Committee on Finance and Technology, the Ohio Public Utilities Commission, and the NARUC Staff Subcommittees. Special thanks should be extended to Chairman Lawrence Ingram of the New Mexico PSC (the representative of the NARUC Committee on Finance and Technology), Chairman Craig Glazer of the Ohio Public Utilities Commission (the host commission), the chairpersons of the NARUC staff subcommittees who suggested the topics for sessions, the session chairpersons who selected papers, organized sessions, and provided on-site session management.

We would like to express our appreciation to Joseph Swidler and Chairman Steven Fetter of the Michigan PSC, who provided luncheon remarks. Our thanks for a job well-done are extended to Wendy Windle, Debbie Daugherty, Mike Milush, Julie Nicolosi, Brett Bergefurd, and Joan Marino of the NRRI staff. Without the support of these dedicated individuals, the conference would not have been possible.

David W. Wirick  
The National Regulatory Research Institute





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**1. COMPETITION IN REGULATED MARKETS**

**Chairperson: Ed Rosenberg**

**National Regulatory Research Institute**



HALF-FISH AND HALF-FOUL: COMPETITION IN  
REGULATED MARKETS BY PREVIOUSLY  
MONOPOLY SERVICE PROVIDERS  
BY  
MARSHA ROCKEY SCHERMER  
ARTER & HADDEN<sup>1</sup>

As common lingo would have it, let me tell you first "where I'm coming from". In other words, what are the basic orientations which lead me to be standing here this morning saying the things I will be saying. I am by nature and training both a philosopher and a pragmatist, which some might think is a contradiction in terms. I think it means I am a public utilities attorney who values careful analysis of public policy and its impact on the utility businesses that are essential to our lives.

Another answer to the question is that by committing myself to present a paper at a conference such as BRIC, I require myself to examine and reexamine the important issues in the vital field of our shared concern. Increasingly, perhaps it is a sign of my advancing age, I drive myself mentally to hone the basic premises of my opinions. I want to shake off the stereotypes and prejudices that allow all of us to go through our daily lives sonambulant and comfortable. Hence, another answer is I want to share my discomfort with all of you.

There is a well known (woman) philosopher named G.E.M. Anscomb who prefaced one of her books by noting that she was first struck by the philosophically significant question "Do objects have behinds?" I will not make us all that uncomfortable. Furthermore, we do know that they do.

The philosophical and pragmatic inquiry in which I invite you to join is an inquiry into the underlying goals and values of society which permit competition among service providers or require their regulation.

I am sure many of you from Ohio follow the legislature and get some of your news from Gongwer or a similar publication in your neck of the wood. A recent Gongwer contained this report on healthcare legislation:

A centralized data collection center for health care will likely be in a comprehensive health care bill (HB 478), according to lawmakers, but what is unclear is just what type of information will be collected and from whom.

The data could help consumers make better health care choices and state health officials make better policy decisions, according to lawmakers and state officials. Providers and hospitals are concerned that the data required not impose any expensive and unnecessary burdens, while insurers would like for some information which they claim is proprietary to be protected. The data center provision like the bill itself is currently under negotiation.

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<sup>1</sup> The views expressed are my own and should not be attributed to Arter & Hadden, its clients or any of its other attorneys.

The Senate version of the bill creates the Center for Health Care Data and places it under the jurisdiction of a newly-created Ohio Health Care Board and its 16 gubernatorial appointees. State health and human services directors and the state insurance superintendent would be authorized to require any person or governmental entity to submit data or face fines for not doing so. However, the bill sets no parameters around what specific types of information would be collected and that worries some people.

\* \* \* \* \*

"What is wrong with writing in the bill within four years we will create a Public Health Commission," said [Senator Bob] Ney, who said such a commission would eventually serve a similar role in setting health care rates as the Public Utilities Commission of Ohio performs now in setting utility rates.

\* \* \* \* \*

[Representative Wayne] Jones said establishing a rate-setting commission is not one of his goals. Furthermore, he expressed doubt over whether such a commission would be effective in containing costs. "One of the problems with rate-setting is we have no control over Medicare, which is a big piece of the puzzle," he added.

\* \* \* \* \*

On the proposed regulatory concept, [Paul] Lee [of the Ohio Hospital Association] also said turning the board into a PUCO of health care won't work. "If the goal is cost containment, it may not work. If the goal is more government control of the system, that does work," he said, while noting that the same access and payment problems won't go away with the regulatory approach.

If health care providers have witnessed the cost and invasiveness of some regulatory oversight authority, they may be justified in their concern about the legislators' discussion. Just as women have come to believe that if they wait long enough a dress or accessory will come back into vogue, I now believe the pendulum between service offerings governed by the competitive marketplace and those governed by regulation swings inexorably from one reform to another. Witness the recent re-regulation of cable TV service and the grant of competition in electric service in two pieces of federal legislation enacted just this fall.

I invite you to ask yourself, as I have, what are the values and goals of a competitive or a regulated approach to the provision of any service.

### Competition

Consumer choice →  
no price control and much  
innovation. The motivation  
is profit and the fairness  
profit for risk.

### Regulated

Consumers have no choice →  
regulate price and if necessary, order  
innovation. Profit is a motivation rarely  
mentioned and the fairness is monopoly  
franchise in exchange for "guaranteed" profit.



What I am focussing on is economic regulation. There is safety and welfare protection effectuated by government regulation independent of economic regulation. Tort law, the FDA, and the FTA, EPA, etc. can all secure for us the safety of products and services. Even in the economic arena there are checks against unfair trade practices; patent/copyright law, consumer law, false advertising prohibitions, laws on fraud, antitrust actions and even non-compete clauses on employees or franchisees.

Economic regulation has been considered to be appropriate historically for monopoly or bottleneck facilities providers particularly of essential services. The purposes included universal availability, reliable service, "reasonable" prices and non-discrimination among customers. Guess what friends; there aren't that many services that look like that anymore.

The first wave of consideration of competition in the regulated markets was in the fuel on fuel competition issues in the middle of the 20th Century. That competition between fuel sources in the energy marketplace is renewing its vigor with the impact of high cost generating facilities and the so-called gas bubble.

Clean Air Act limitations on emissions further fuel the fuel-on-fuel competitive marketplace. Deregulation of gas supply altered the availability and cost considerations for the fuel source. For a long time, the regulators have stayed out of the competition between energy sources and have continued to do so in the recent renewal of this type of competition. Increasingly, there are policy reasons for revisiting the absence of public policy direction with respect to fuel-on-fuel competition and those can be expected to emerge within the next year to two years. Will energy service regulators retain neutrality in assessing least-cost compliance plans especially with the wild card of "externalities" in the deck of cards?

The second wave of competition in the regulated marketplace was in the telecommunications arena beginning innocently enough with competition for customer premises equipment (CPE). Next came competitive service offerings in the telecommunications area for long distance or inter-exchange service. Hot on the heels of the inter-exchange competition came competition for additional services beyond basic access. Most recently, microwave and fiber rings around metropolitan areas are permitting the competitive arena to be expanded in telecommunications to include alternative basic access. Microwave, cellular, and paging allow "bypass" and in most jurisdictions are virtually unregulated. Our collective fascination with technology lures us to new technologies (providers). They operate without any boundaries except what the technology imposes. PC to fax to cellular and vice versa allow for an office without walls.

At the same time as competition is developing even as to basic access, the previously monopoly providers are viewed to be held to a standard of still providing services in a monopoly service mode and with earnings levels restricted. Current examinations of alternative rate-making methodologies for competitive telecommunications offerings indicate that the area is not yet clear of underbrush and, as the saying goes, the forrest is not clear and even some trees are difficult to perceive. Regulating an entire industry -- face it -- is damn hard to do.

The shape of the offering of utility services in a competitive/regulated marketplace is additionally complicated by a lack of clarity with respect to appropriate regulatory oversight regarding tariffs and contracts and settlements. The public policy and the law are far

from settled on this topic and the customer as well as the utility is at this time without guidance and at considerable risk.

It has been a recognized basic principle of utility service that it be provided without discrimination -- or, at least, without undue discrimination among customers. Tarrified services offer service at specified rates to all comers. Contracted services are typically publicly reviewable arrangements between customers and utilities. Settlements can get close to horse trading where muscle and acumen determine who gets what. For some reason regulators seem to be inclined to encourage utilities and their customers to move toward the extremes of tariff or settlement. Perhaps that is reflective of an underlying sense that the service will of its own nature end up in either the fish or fowl category of regulated or competitive offering.

Whether the uncertainty in this necessary transitional phase is sufficient to deter the development and deployment of advanced technologies remains to be seen. The Reagan years of believing that competition would take the place of regulated monopoly service provision has not yet fully "filtered down" with respect to the outlook on previously regulated monopoly providers. Once a monopoly utility, always a monopoly utility for purposes of the perception of the regulators' concern about illegitimate cross subsidies.

What follows from regulating traditionally monopoly companies as to their non-competitive services is that profit regulation gets more and more complicated. Increasingly regulation is inclined to reach into the management of the utilities. Regulators may want to place rewards for specific types of conduct at specific levels in the internal organization of the utility. Thus, not only the overall level of profit becomes of interest, the use of the profits by the utilities in internal management becomes part of the direction by regulators. Incentive ratemaking grows out of these inclinations.

While regulation of monopolies substituted for customer switching as a price control mechanism, customer focus groups and collaboratives and stakeholder participation in ADR now provide structured customer input for previously monopoly providers for services which are now competitive.

We are all, most definitely, in the shake-out phase of competition in utility services. Opportunities and failures abound; thus, is the nature of change.

**Competition In Regulated Markets (Part 2)**  
**Feasibility of One Regional Spot Market Power Exchange Concept**

**By**

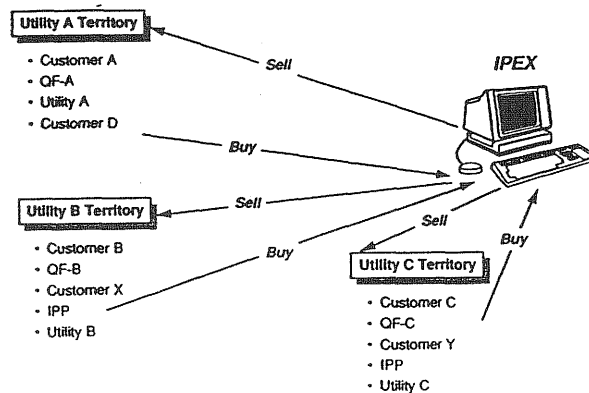
**Co-Authors: Pentti Aalto, Senior Engineer, Pequod Associates**  
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**I. Concept**

This paper will describe in detail a proposed regional spot market power exchange concept and review its potential benefits and problems. The membership to the exchange is open to all utility customers, qualifying facilities, independent power producers and utilities. The authors of this paper believe that a broader exchange than the presently existing pools and one operating closer to real time pricing is possible and may be necessary due to the institutional and technical changes in the electric utility industry.<sup>1</sup> These changes include (1) more effective interconnection between utility systems, which has created the opportunity for greater competition on the generation side; (2) the increasing efficiency of generation and transmission technologies; and (3) the growing acceptance of concepts such as real time pricing.

A broader exchange could meet the standby and sales needs of smaller generation sources, help independent power producers, "IPPs" sell smaller increments of power, and provide less expensive and new sources of power to utilities and their customers. The purpose of the establishment of this exchange would be to increase and make more efficient the use of electricity. We are calling this exchange the Independent Power Exchange (IPEX).

**Concept: Independent Power Exchange (IPEX) a regional spot market.**



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<sup>1</sup>Pentti Aalto is senior engineer at Pequod Associates, Boston, Massachusetts, and Bernice K. McIntyre is senior consultant at Arthur D. Little, Inc., Cambridge, Massachusetts. Ms. McIntyre previously served as Chairman of the Massachusetts Public Utilities Commission. The opinions expressed in this paper are solely those of the authors and do not necessarily reflect the views of either Pequod Associates or Arthur D. Little, Inc.

The existing industry structure has not allowed such a market-based concept to evolve. The existing planning process of utilities is geared to meeting long-term needs and designed to ensure that large increments of capacity and associated energy are available to meet these needs. It does not adequately use the short-term market capabilities available. Changes in technology and governmental policies such as PURPA permit the development of a broader market-based exchange which could meet both short- and long-term needs. The IPEX concept is only one proposed way to meet both these needs.

The basic principle behind IPEX is consistent with creating a dispersed electrical system that could eliminate the lumpy nature of the existing grid by providing opportunities for smaller self-generators and other electricity providers to contribute to the larger needs of the utility market by reducing system marginal costs and increasing the capacity and energy available to the utility market. This concept avoids building excess capacity by incorporating more immediate and responsive signals and providing for shorter lead time in meeting the need.

Of course, this concept raises many questions of feasibility and the implications to utility operation. Can the grid operate reliably with these new entrants? What impact will retail wheeling have on the existing utilities? Why approve a second power exchange on top of the existing power pools? How can regulatory policy deal with the problems of stranded investment and cream skimming that this type of concept may create? Should the exchange, IPEX, be regulated? If so, how and why.

This paper is not intended to provide the perfect model for an independent power exchange but rather to detail one approach and identify some of the issues that must be resolved before the benefits of such a system can be realized, if they can.

The independent power exchange would allow its membership, in coordination with but separate from the existing utility, to run power pools to buy and sell power. We propose that IPEX operate separately from the existing pools to test the concept. However, for IPEX to succeed, voluntary cooperation and participation by utilities and their operating pools will be necessary. This would allow utilities to adjust and expand their planning process to take advantage of the new entrants IPEX will promote without causing any significant impact on existing utility or pool operations.

These transactions would occur through the establishment of a centralized information exchange by IPEX. A centralized computer would monitor the production and use of power by each of the members. This would require metering capability at each member's location to communicate information related to power use and production. The centralized computer would have the capability to establish the system price based on inputs received from the exchange members. Based on this information, the centralized computer determines system price based strictly on the supply and demand of the members. The customer would receive information from the centralized computer on the system price and each customer's energy

management system would respond to that price by adjusting power use or generation production.

To reiterate, we expect the benefits of the concept to be increasing access to the electricity market by including smaller buyers and sellers of power, increasing efficient electricity usage, eliminating the lumpy nature of the existing grid and reducing system marginal costs.

The rationale behind this market-based concept is that the real time price of the commodity would control the behavior of the members. Since real time pricing could control the purchase and sale of power through IPEX, we foresee such a system encouraging high efficiency use of electricity (such as supplying electric cars or heat pumps) by encouraging producers of power whose supply meets the characteristics of this type of demand to supply that power through IPEX. The price charged to IPEX customers would consist of three components: the system price, a transmission adjustment to that price, and a price margin. In addition, a distribution access fee should be paid to the local utility. The functions of each is described briefly below.

### **Pricing System**

The price charged to IPEX members includes two components -- a fixed access fee and a variable price per kwh.

### **Access Fee**

An access fee is established to pay the local utility for the use of its distribution system and a portion of its transmission costs. While such a fee might be designed in a variety of ways, the following method, which is similar to portions of the Narragansett Electric Company's auxiliary tariff, seems to strike a balance between simplicity and pricing accuracy.

The utility determines the annual cost of its primary and secondary distribution systems including capital service, profit, maintenance, and management costs but no other power procurement costs. These costs are then divided by the connected transformer capacity, yielding a cost per KVA at primary and secondary service levels. The customer pays monthly for its actual installed transformer capacity or a mutually determined contract level of service.

In addition to the distribution costs, the access fee also would include the utility's fixed transmission costs, in this discussion we suggest 10%. (The formula for determining this is described later in the discussion related to the fixed transmission costs.) The intent is to provide for some revenue stability for the utility while

recovering the actual cost of transmission in a "transmission adder" to the spot "system price."

The access fee is developed as follows:

$AF_m$  = members access fee \$/KVA  
 $DC_u$  = utility distribution cost \$/month  
 $TDC_u$  = utility distribution capacity (KVA)  
 $C_m$  = member transformer capacity (KVA)  
 $FTC_m$  = fixed transmission cost to member

$$AF_m = \frac{DC_u}{TDC_u} \times C_m + FTC_m$$

The variable price is determined as follows:

TP = Total Price/KwH  
SP = System Price (market based)  
VTCm = Variable transmission adjustment to member  
(for capital and losses)  
M = Margin  $\pm$ % (for IPEX operation and incentive)  
TP = (SP + VTCm  $\times$  (1  $\pm$  M))  
where M is positive  $\rightarrow$  purchase from IPEX  
M is negative  $\rightarrow$  sell to IPEX

## System Price

The primary price component of IPEX is the "system price." It is derived directly from the supply and demand of the exchange members.

Each member's power flow is monitored centrally in a fashion that is as close to instantaneous as economically possible. The intent is to match supply with demand at all times. The up-to-date adjusted variable price per kwh will provide the information for members to control their use and production of power. If at any time the supply exceeds demand, the price is lowered. The lower price discourages marginal generators and encourages marginal users. The price continues to drop until the desired balance is achieved (the market "clears"). Likewise, if demand exceeds supply, the price goes up until the market clears. The price is likely to be set on a regional basis because of the technical constraints of existing transmission capacity and capabilities. The system price must be adjusted to reflect costs of transmission, distribution, losses, and other administrative costs.

## Transmission Adjustment

The system price is a regional price determined from the actions of exchange members that are dispersed throughout a wide area. This assumes the price of power is the same at all points in the area, which, of course, is not the case. Like all commodities, a transportation cost is required to move the product from producers to users; in this case it derives from the need for transmission.

In the independent power exchange the costs tied to transmission will be addressed by a transmission pricing system that has two components: a fixed transmission access charge, and a variable transmission adder. The fixed transmission access charge is added to the distribution access charge while the variable transmission adder is added to the system price.

Both of these components are derived from the total costs of transmission to utility, which normally includes capital costs, management and planning-related costs, and maintenance and operation costs. The fixed transmission cost to the member will equal 10 percent of the total cost of transmission to the member's utility divided by that utility's total distribution capacity. This fraction will be multiplied by the member's transformer capacity.

$FTC_m$  = Fixed transmission cost to member  
 $TTC_u$  = Total transmission cost to utility  
 $TDC_u$  = Total distribution capability of utility  
 $C_m$  = Member's transformer capacity

$$FTC_m = \frac{(TTC_u \times .1)}{TDC_u} \times C_m$$

Ninety percent of the total cost of transmission will be recovered through a variable transmission adder on a dollar-per-kwh basis. In addition, transmission losses are paid for as a percentage of the system price and vary with loading on the transmission system.

$VTC_m$  = Variable transmission cost to member  
 $TC_u$  = Total transmission capacity of utility in kW  
 $OPT$  = Optimum loading as a percentage of  $TC_u$   
 $TL$  = Transmission losses as a percent of total transmission multiplied by SP

$$VTC_m = \frac{TTC_u \times .9}{TC_u \times OPT \times 8760} + (TL \times SP)$$

The variable portion of the transmission adder is positive when power is flowing to the distribution system from transmission; negative when power is flowing from

distribution to the transmission system. If the transmission adder in a given system is large, generators in the distribution area will tend to increase output and users will tend to use less. In effect, this represents a payment by the utility when the member reduces the need for transmission by installing generation in the load center. If the member adds load in the load center, then the member must pay the utility for the transmission needed to meet that load. The intent of the adder is to recognize the actual effects of a change in load. The method for determining the adder would fully pay the transmission cost when the system operates at optimum load factor.

When the utility transmission system operates at capacity lower than the optimum load factor, the utility experiences a revenue shortfall. On the other hand, when the system operates at higher than optimum load factor, the utility's revenues increase, providing a revenue resource that could be used to reinforce the system. The fixed transmission cost affords some protection against the earning loss resulting from capacity lower than the optimum load factor. Transmission losses are a function of loading, the percentage loss increases as the loading increases.

### Price Margin

A third component of the price of the exchange is the price margin. This margin is used to cover operating costs, distribution losses, maintain a reserve for contingencies, and to pay for standby power contracts when necessary. It is calculated based on a percentage of the transmission adjusted system price. The concept is that a seller to the exchange will sell at the system price minus this margin and a buyer from the exchange will buy at the system price plus this margin. This percentage varies according to voltage class. Margin is recovered as a percentage to reflect the relationship between value of the losses and the system price.

For example, if margins is 10% and the adjusted system price equals 5¢/kwh then the buyer pays 5.5¢/kwh and the seller receives 4.5¢/kwh. The 1¢ differential would be used for operating costs which may include the costs of both utility and exchange management, metering, communication, and controls costs related to IPEX. Power losses would include those associated with distribution. The reserve would be needed to protect against control failures. IPEX would have standby power contracts to ensure greater diversity and reliability.

The price margin also could be used to help solve the problem of stranded investment for high cost utilities that cannot compete with such an exchange and to encourage voluntary utility participation by including an incentive. Some portion of the lost revenues to the host utility resulting from the existence of IPEX could be recovered from all IPEX members through this price margin.



## **System Price-Related Problems**

One problem we have identified with the pricing procedure is the complexity of the control mechanisms necessary to put the pricing system in place. The control algorithm will be rather complex because of time delays in the response of the members and in the monitoring delays that will be inherent to a cost-effective system. Control errors will occur during those times that the system is not in balance. This will result in a difference between payments by users and payments to generators. When supply exceeds demand, the exchange will operate at an income deficit; when demand exceeds supply, the system will operate at a surplus.

While we believe that the mechanism is self-correcting (that is the deficits will likely equal surpluses over time) we suggest that the system maintain a reserve to protect itself. This reserve, system losses, and other operating costs will be derived through the "price margin" tied to the transmission adjusted system price. Users of power will pay some percentage above the system price; generators will get the same percentage below the system price.

## **Transmission Adjustment-Related Problems**

Issues of access and tariffs for transmission are the subjects of hot debate across the country. To simplify matters, we assume the local utility is responsible for maintaining adequate transmission to its substations to serve its loads. We further assume the utility pays for that transmission capacity as needed. This is the situation for "distribution only utilities" that buy transmission capacity from neighboring utilities. We can attribute similar charges for transmission for those utilities that own their transmission systems. In the long run, if a distribution system load grows, its need for and cost of transmission expansion grows; likewise, reduced load implies reduced need and cost for expansion. Reducing load, however, does not reduce the current cost of those portions of the transmission system dedicated to a particular distribution area.

As described earlier, we have designed a transmission adjustment charge to address this concern. For example, if contracted transmission capacity to a distribution area is 100 MVA and the optimum annual load factor is determined to be 60%, the total annual cost would be divided by the total kwh that could be delivered at 60 MVA operating for one year. This charge could be further adjusted to cover transmission losses and provide a variable price signal as a function of transmission load; higher prices when the load is above optimum and lower when below. This charge would be added to the system price.

If a large generator were to turn a distribution load center into a source, the adder would be negative. Power in the distribution system would have a lower value than the system price. The difference goes to the transmission provider to aid in the building of new transmission.

## II. Questions Related to the Concept

There are myriad questions that arise related to a concept like IPEX. These questions revolve around the technical feasibility of the concept, how reliability of service and quality of service can be maintained with such a market-based concept, how IPEX and existing power pools will interact, what type of regulatory controls will be necessary and whether decentralized planning can work.

The question of technical feasibility revolves around whether or not there are sufficiently sophisticated computer systems and metering systems to avoid time delays in pricing information. Telecommunications and other computer-based technologies are moving closer and closer to having real time pricing capability. Certainly a concept like IPEX would encourage the development of more improved technologies, however, the authors believe that technologies presently exist to allow for the adoption of IPEX on a small scale basis. As to questions of feasibility related to transmission access and retail wheeling, this paper assumes that real transmission access exists and that at least on an experimental basis retail wheeling would be allowed to test the effectiveness of a concept like IPEX.

The fact that membership in the IPEX exchange is open to everyone - all utility customers, qualifying facilities, independent power producers, and utilities - raises feasibility questions. The ability of customers to by-pass the local utility raises important issues related to retail wheeling, stranded investment, planning, obligation to serve, and compensation for any distribution, transmission, and standby services provided. At the same time, the presence of both large and small entities in the market raises other issues of market power, anti-competitive behavior, and cross subsidies between competitive and non-competitive services. Freedom to access utilities other than the utility serving a customer's location has usually been limited to large customers with substantial ability to negotiate. Some states have adopted approaches that avoid some of the stranded investment and planning-related problems presented by retail wheeling, by limiting access to the benefits of competition to a few large customers and do not encourage self-generators and others to meet the power needs of utilities and other customers. Although clearly there are significant problems related to opening up the generation market to a greater number of players, it is not clear to the authors that it is equitable to limit any benefits such a system would bring to the largest customers.

The benefits of a market-based exchange are that it:

1. Drives utilities to greater efficiency by allowing customers who can self-generate at lower costs to buy and sell their power to the exchange regardless of the size of those customers.
2. Provides the utility with the ability to defer building new capacity by purchasing from the exchange on short-term basis available energy as needed.

3. Allows for immediate response to a variable price. Members of IPEX can, based on the price, defer load, fuel switch, store power or generate power. The ability of small customers to respond may be limited at first, but as the cost of controls in this new market decrease, the benefits should be widely available. The cost of control are likely to decline, since these technologies are tied to telecommunications and computer technologies that have decreasing cost curves. These customers may be able to provide for the needs of newly developing markets (such as electric cars) more efficiently than existing providers.

In creating these new benefits, however, the IPEX concept moves toward a dramatically different structure for power generation, transmission, and distribution. The IPEX model would drive the regulated utility structure to a distribution and transmission orientation, while pushing generation to a competitive market.

These structural changes immediately raise questions concerning stranded investment, market power and others. We suggest that a more productive way of dealing with these issues is to share the costs of stranded investment among all members and to establish new regulatory frameworks to meet the needs of the changed market rather than denying the customers the benefits of the concept.

The premise of this paper is that market, regulatory, and technological trends are driving the utility industry in this direction regardless of the complications that may arise. IPEX may be a way to gain experience handling these complicated issues without causing major economic dislocations.

Reliability of service and quality of service questions also rise to the forefront when discussing concepts like IPEX. Any market-based concept must account for these considerations by either imposing on the exchange itself some of the obligations presently vested only in the utilities or by placing increased obligations on the entire system, including customers that ensure that quality of service and reliability are maintained. After all the IPEX system would not guarantee the availability of a KW or kwh. Either each participant in IPEX must increase their planning responsibility or IPEX must be obligated to purchase standby power just as utilities are required to have a reserve margin. However, there are solutions to the problems that allow the IPEX concept to be tested.

To further ensure that reliability and quality of service are maintained, communications between IPEX and existing power pools must be good. IPEX at least initially is not intended to replace existing power pools but rather to bring to existing power pools new sources of power that have not been able to benefit the system due to the long-term orientation of existing power pools. If the concept works, it may be that power pools themselves will begin to look more and more like independent power exchanges with less and less control exercised by utilities.

The following regulatory questions must be addressed:

- Should the exchange be regulated as a utility or unregulated?
- What, if any, disruptive effects could the operation of such an exchange have on system reliability? Captive ratepayers?
- Can the utility company participate freely in the exchange or is continued regulation necessary to ensure the exchange's viability?
- We have assumed the existence of PUHCA reform and approval of retail wheeling to allow the exchange to exist, is this a valid hypothesis?

The first question from the regulatory perspective is how to treat the new entity. Should it be considered a utility and its activities regulated to the same extent as other utilities, or should it be exempt in some fashion from regulation?

The answer to this question flows in part from the type of association that IPEX creates and the degree of market power it exerts. Many states give public utility commissions regulatory authority over "electric companies" as defined in very broad terms. For example in Massachusetts, electric company is defined as "a corporation organized under the laws of the Commonwealth for the purpose of making by means of water power, steam power or otherwise selling, or distributing and selling, electricity within the Commonwealth<sup>2</sup>." These companies are subject to the supervisory and rate setting authority of the Massachusetts Public Utility Commission. IPEX under this definition might be regulated as an electric company.

Even if IPEX is a voluntary association of entities that sell and buy power solely among its members, IPEX might be regulated in many states that have similar statutory frameworks. If IPEX structures its dealings so that all members are qualifying facilities or independent power producers selling to existing utilities or power pools, it might be exempt from regulation as a electric company and meet the exemptions provided for qualifying facilities and independent power producers.

Since the concept behind IPEX is to provide for a real market for power where competition will determine whether any member will buy or sell, it would seem incongruous that the price IPEX charges would be regulated. The market itself should be the regulatory force related to price. Only those entities that can sell power cheaper than existing producers would dare enter the market, especially since the IPEX pricing system might require IPEX members themselves to subsidize utilities to some extent for their past investments. Members of IPEX would be guaranteed market entry but would not be guaranteed market success.

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<sup>2</sup>M.G.Lc. 164 § 1, 76, and 94.

The approval that the FERC in 1989 gave Citizens Power to formulate a power trading function between utilities provides some regulatory support for minimal price regulation where a free market concept is being used. We note however that FERC did maintain it had jurisdictional authority over Citizens Energy in these transactions, 35 FERC, §61, 198 (1986). It simply minimized the amount of regulation due to FERC's finding that Citizens Energy did not have market power and linking Citizens Power pricing to the avoided cost of utilities. The IPEX concept goes several steps further by removing the rate cap of the utility's avoided costs and relying totally on competitive forces to set the cap on the price of power an IPEX member is willing either to pay or to receive, as well as allowing full participation of utilities which do have market power.

Unlike PURPA, which forced the utilities to purchase power from QFs, there should not be a regulatory mandate that utilities buy any set portion of the IPEX produced power; however, the utilities should be mandated to provide the access to transmission necessary for the market to function.

We envision that if the IPEX concept is adopted, most regulation would focus on the issue of transmission access. The IPEX concept cannot thrive without transmission access and without provision for utilities to wheel power on behalf of one IPEX member to another.

Therefore, the complicating question is how to provide the necessary incentives to utilities to ensure that they provide that access and wheel the power as needed.

Some would argue that no incentive can secure utility support for a concept like IPEX, since IPEX naturally leads to a utility industry structure that separates generation from transmission and distribution. However, we believe that the IPEX model we designed benefits both those utilities that believe they can compete effectively against new generation entrants and those that are more skeptical. The IPEX model features compensation to high cost utilities for the loss of some of their customers as the result of the creation of IPEX. The price margin provides for this compensation, however, the amount each utility is paid for lost revenues tied to the creation of IPEX should be determined by regulators. Because IPEX may operate across state boundaries, there also may be need for cooperation between states or regional regulation to set the appropriate level of compensation. In other words, a utility should be partially compensated for lost revenues tied to the creation of IPEX as long as the initial investments made by the utility were prudent. Regulators should consider whether the utility can sell power elsewhere (including IPEX) and whether stranded investment really is a result of IPEX. Regulators also must consider whether they will limit the upside potential for high profits by utilities operating through IPEX.

Regulators may be able to use the concepts developed around demand-side management and conservation programs to assist them in designing appropriate lost revenue recovery and incentive mechanisms. The rationale for paying utilities to

provide greater access to their transmission system is the same as the rationale for allowing utilities to earn a return on conservation programs: allowing access to the transmission system will decrease the total costs to the system; it will create greater efficiencies for customers and drive the utility to greater efficiencies by providing new competition.

The IPEX concept assumes that the members of IPEX are willing to pay the costs of stranded investment and any incentive as a cost of initial market entry. However, as confidence grows in the market, the need for the incentive should decrease. We also assert that even by placing this added cost on the IPEX members, the IPEX concept can thrive. However, it is important that regulators determine what the costs of stranded investments are and also spread those costs among utilities and IPEX members. Incentives can encourage utilities to support IPEX but incentives should become unnecessary as the market develops. Regulators must also consider removing any disincentives and allow the generation side to be treated more like a competitive market.

The utilities should be allowed full participation in IPEX, since they should be able to sell excess capacity or energy to IPEX and purchase from IPEX as their needs dictate, and since their participation in IPEX should benefit their ratepayers. However, because IPEX would be a developing market and utilities would continue to own or operate the major portion of generation and transmission, it would be important that oversight exist to ensure that utilities' activities within IPEX did not undermine the concept. For instance, utilities should not be allowed to ensure that only their generation power had a market through manipulating transmission access.

A critical jurisdictional issue would be the role federal regulators play in regulating this market as compared to the role of state regulators. It would seem appropriate that state regulators have the authority to determine whether the ratepayers in their state would benefit from an IPEX concept and that state regulators determine the level of compensation or incentive that would be paid to utilities to ensure their participation and support of the concept. However, because IPEX would operate between states, federal involvement or multi-state cooperation would be needed to make it work. Concepts like the regional regulatory model developed by Arkansas and Entergy may be helpful here. The federal agencies, however, would have to provide much guidance related to retail wheeling.

Finally, the most critical question is whether the decentralized planning is necessary for the IPEX concept to work. During the experimental phase we assume that the IPEX concept would still require some centralized planning components either at IPEX or at the power pool level. However, if the theory behind the separation of generation from transmission and distribution function is correct, the centralized planning function will fall to either the distribution and transmission entities or entities that work on a very similar principle as that of IPEX.

We recognize that many of the questions have not been answered in this paper; our purpose is simply to present the new and different concept of IPEX. We hope that this paper stimulates further development and discussion of the concept of an independent power exchange.





**THE UTILITY BUILD-VS.-BUY DECISION: IS  
THERE A FINANCIAL EXTERNALITY?**

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**Introduction:** The build-vs.-buy decision is a standard application of the principles of corporate finance and is included in the typical undergraduate corporate finance course.<sup>1</sup> Non-standard issues appear, however, when electric utilities buy generating capacity through a long-term power purchase contract rather than build, own and operate that capacity themselves.

The capital structure and cost of capital issues relating to the utility build-vs.-buy decision have become controversial in recent years. The future development of a viable and competitive electric generating market could be affected by industry practitioner's analysis of these issues. Indeed, some academics and utility practitioners appear to have misinterpreted these issues largely as a result of an erroneous understanding of the related issues of market structure. Further research on this subject is therefore needed.

This paper is organized in the following manner. First, the changing electric utility business and operating environment is briefly surveyed. Second, the literature relevant to the "theory of the firm" is surveyed. Third, the electric utility industry's current and prospective market structure is analyzed within the context of the theory of the firm. Fourth, the cost of capital and capital structure impacts of long-term purchased power contracts are discussed.

**THE CHANGING ELECTRIC UTILITY INDUSTRY:** Substantial change has occurred in the electric utility industry in recent years. The focus of industry incumbents has shifted from finishing up the projects of the 1970s (i.e., the completion of construction of nuclear generating units) to competing in the energy marketplace.

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<sup>1</sup> Corporate finance textbooks, such as those noted below, discuss the build-vs.-buy decision in terms of the lease versus purchase decision, the primary alternative to a purchase contract. See Richard Brealey and Stewart Myers, Principles of Corporate Finance, 2nd ed. (New York: McGraw-Hill, 1984), pp. 541-565 and Thomas E. Copeland and J. Fred Weston, Financial Theory and Corporate Policy, 2nd ed. (Reading, Mass.: Addison-Wesley, 1983), pp. 536-555.

The very nature and structure of the industry is being rethought in many places around the world.<sup>2</sup> In the U.S., the recently enacted national energy legislation includes provisions that: 1) reform the Public Utility Holding Company Act of 1935 (PUHCA) by enacting provisions that reduce current restrictions that limit the ability of independent power producers (IPPs) to compete in the electric utility market; and 2) provide increased access to electric utility transmission. Enactment of national energy legislation would suggest that change in the industry will continue and perhaps accelerate.

Increased competition in the electric utility industry has been much discussed in recent years. The clear trend in the industry has been to accommodate and encourage competition and/or attempt to gain some of the benefits of competition by refining regulatory practices. Reflecting the increasingly competitive business and operating environment, concepts such as "competitive bidding," "transmission access" and "independent power" that were introduced into the electric utility industry during the 1980s have begun to mature into a second stage where these concepts will be further refined and adapted.

Electric utilities have begun, in recent years, to utilize integrated resource, least-cost planning (IRP) processes in order to select the most appropriate and cost-effective incremental generating capacity.<sup>3,4</sup> In many cases these planning processes have utilized "competitive bidding" plans in order to attempt to add the discipline of the competitive market to the "centralized planning" aspect of IRP processes. More recently, environmental externalities have begun to be considered in IRP processes.<sup>5</sup>

Electric utilities have responded to this new business and operating environment. Electric utilities have recognized the importance of being the "low-cost producer" and have therefore become much more proactive at controlling costs. Utilities have responded to competition by: 1) cutting costs by downsizing headcount, flattening organizational structures and renegotiating contracts; 2) redesigning and unbundling rates in order to reduce cross-subsidies between customer classes;<sup>6</sup> 3) focusing on the customer's needs and wants through marketing and product differentiation; and 4)

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<sup>2</sup> Philip R. O'Connor, Wayne P. Olson and Jay Taparia, "Global Challenges in Energy and the Environment: An American Opportunity Through PUHCA Reform, September 1, 1992. Copies of this report are available through Palmer Bellevue Corporation, 111 W. Washington, Suite 1247 Chicago, IL 60602.

<sup>3</sup> While it is difficult to reconcile "competition" with the "command-and-control," "centralized planning," and "government planning" features of IRP processes, these are the currently two of the most important trends in the industry.

<sup>4</sup> See Lonnie Foley and Allen Lee, "Scratching the Surface of the New Planning: A Selective Look," July 1990, pp. 48-55.

<sup>5</sup> See Lonnie Foley and Allen Lee, "Scratching the Surface of the New Planning: A Selective Look," July 1990, pp. 48-55.

<sup>6</sup> See Bernie Neenan, "Electricity Ala Carte," Electric Perspectives, May-June 1992, pp. 48-66 for a description of how Niagara Mohawk has experimented with unbundling some of its services.

using "competitive bidding" programs to select new capacity (both demand- and supply-side). In addition, electric utilities have become better at "focusing on the customer" and marketing "energy services."

In the U.S., the most dramatic change in electric utility industry corporate structure has been with respect to the addition, at the margin, of new generating capacity. The Public Utility Regulatory Policies Act of 1978 (PURPA) has performed an important function by providing a "gateway to entry" to the previously impregnable vertically-integrated electric utility industry.<sup>7</sup> While most embedded generating capacity continues to utility-owned, a substantial portion of incremental generating capacity additions in recent years has been owned by non-utility generators (NUGs). Given the likely enactment of PUHCA reform this trend is likely to continue -- though the specific path remains uncertain.

**THE THEORY OF THE FIRM:** An examination of market structure issues in the electric utility industry can best be developed by reviewing the seminal work of Coase, Williamson and Stigler regarding the nature of the firm.

Coase examines the question of why firms (companies) exist, thereby replacing some market transactions with intrafirm (command-and-control) transactions.<sup>8</sup> Coase concludes that the primary reason that firms exist results from the "cost of using the price mechanism;" that is, the "transactions cost" of certain activities can be reduced if firms exist, thereby permitting the avoidance of the cost of market transactions.<sup>9</sup>

According to Coase, the existence of firms reduces transactions costs in two important ways.<sup>10</sup> First, Coase notes that "The most obvious cost of 'organizing' production through the price mechanism is that of discovering what the relevant prices are." Second, he notes that "The costs of negotiating and concluding a separate contract for each exchange transaction which takes place on a market must also be taken into account." Dahlmann summarizes transactions costs as including "search and information costs, bargaining and decision costs, policing and enforcement costs."<sup>11</sup> In addition to transactions costs, other reasons Coase cites for the existence of firms include: 1) uncertainty; 2)

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<sup>7</sup> See George S. Yip, Gateways to Entry, Harvard Business Review, September/October 1982 for a discussion of Yip's argument that the factors that give rise to barriers to entry can be used to the entrant's advantage.

<sup>8</sup> See R.H. Coase, The Firm, the Market, and the Law, (Chicago: The University of Chicago Press, 1988); Chapter 2 of this book consists of a reprint of his seminal article "The Nature of the Firm," Economica, 4 (November 1937), pp. 386-405.

<sup>9</sup> Coase 1988, p. 38.

<sup>10</sup> Coase 1988, pp. 37-38.

<sup>11</sup> Carl J. Dahlman, "The Problem of Externality," The Journal of Law and Economics 22, no. 1 (April 1979), pp. 148 cited in Coase 1988, p. 6.

taxes and differential treatments by governments; and 3) the unavailability of short-term contracts due to "the risk attitudes of the people concerned."<sup>12</sup>

Coase notes that contractual (market) alternatives to organization within a firm include such options as "long-term contracts, leasing, licensing arrangements of various kinds including franchising and so on."<sup>13</sup> Coase argues that the choice between organizing a given activity within a firm or outsourcing (by relying upon a market transaction) will be determined based on the relative costs and benefits of the options.<sup>14</sup>

Williamson expands on the "transactions cost" theme.<sup>15</sup> Williamson classifies transactions based on the degree of: 1) uncertainty; 2) frequency of exchange; and 3) the transaction-specific nature of an investment.<sup>16</sup> Williamson notes that a contract-based transactions structure will be more fully developed where transactions are: 1) recurrent; 2) entail idiosyncratic investment; and 3) conditions are uncertain.<sup>17</sup>

Coase and Williamson argue that internal organization via firms will tend to emerge when the transactions costs of "market" transactions outweigh the cost of "internal organization" although they each recognize that short- and long-term contracts can be viable alternatives. Regarding short-term vs. long-term contracts, Williamson notes that "optimal investment considerations favor the award of a long-term contract so as to permit the supplier confidently to amortize his investment."<sup>18</sup> The

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<sup>12</sup> Coase 1988, pp. 39-42.

<sup>13</sup> Coase 1988, p. 74.

<sup>14</sup> Coase notes that "what is meant by a firm in the real world . . . is tractable by two of the most powerful instruments of economic analysis developed by Marshall, the idea of the margin and that of substitution, together giving the idea of substitution at the margin. Coase 1988, p. 34 citing J.M. Keynes, Essays in Biography (London: Macmillan, 1933), pp. 223-34.

<sup>15</sup> See, for example, O.E. Williamson, "Markets and Hierarchies: Analysis and Antitrust Implications" (New York: The Free Press, 1975). See also O.E. Williamson, "Transaction-Cost Economics: The Governance of Contractual Relations," Journal of Law and Economics, 22 October 1979, pp. 233-262 and O.E. Williamson, "The Economics of Antitrust: Transaction Cost Considerations," University of Pennsylvania Law Review, May 1974, pp. 1439-1496.

<sup>16</sup> See, for example, O.E. Williamson, "Markets and Hierarchies: Analysis and Antitrust Implications" (New York: The Free Press, 1975). See also O.E. Williamson, "Transaction-Cost Economics: The Governance of Contractual Relations," Journal of Law and Economics, 22 October 1979, pp. 233-262 and O.E. Williamson, "The Economics of Antitrust: Transaction Cost Considerations," University of Pennsylvania Law Review, May 1974, pp. 1439-1496.

<sup>17</sup> Williamson 1979, p. 259.

<sup>18</sup> O.E. Williamson, "The Vertical Integration of Production: Market Failure Considerations," American Economic Association, May 1971, pp. 112-123.

attractiveness of the various internal and external alternatives, however, will depend on a careful cost/benefit analysis that includes an understanding of the difficulties associated with negotiating and carrying out long-term contracts.<sup>19</sup>

Gordon, however, notes that:

[Coase and Williamson] neglect an important alternative view -- that of George Stigler -- who pointed out that vertical integration becomes less essential as the market enlarges. . . . Clearly Stigler's view forms the basis of a call for less vertical integration in the electric utility industry.<sup>20</sup>

**IMPLICATIONS OF THE THEORY OF THE FIRM ON THE ELECTRIC UTILITY INDUSTRY:** Market structure issues in the electric utility industry can best be analyzed by applying the principles of transaction cost economics established by Coase, Williamson and Stigler. Thus, the issue of the appropriate market structure in the electric utility industry can be examined by contrasting the option of vertically integrating the distribution, transmission and distribution of electricity in a single firm versus relying on long-term contracts between separate companies.

Joskow and Schmalensee apply the theory of the firm developed by Coase and Williamson to the specific characteristics of the electric utility industry, noting that:

Investments in electric power supply facilities have many of the characteristics that Williamson identifies as leading to internal organization (vertical integration) or complex long-term contracts. Where segments of electric power systems must be linked by contract rather than internal organization . . . complex long-term contracts will emerge.<sup>21</sup>

As Joskow and Schmalensee noted in 1983, "Most of the transactions within an electric power system today occur inside firms, through joint ventures or through cooperative agreements between potentially competing firms (mainly power pools)."<sup>22</sup>

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<sup>19</sup> See Mason Willrich and Walter L. Campbell, "Risk Allocation in Independent Power Supply Contracts," The Electricity Journal, March 1992, pp. 54-63 and Edward P. Kahn, "Risks in Independent Power Contracts: An Empirical Survey," The Electricity Journal, November 1991, pp. 30-45.

<sup>20</sup> Richard L. Gordon, "Perspectives on Reforming Electric Utility Regulation," Electric Power: Deregulation and the Public Interest, edited by John C. Moorhouse, (San Francisco: Pacific Research Institute for Public Policy, 1986), p. 463.

<sup>21</sup> Paul L. Joskow and Richard Schmalensee, Markets for Power: An Analysis of Electric Utility Deregulation, (Cambridge: MIT Press, 1983). Joskow and Schmalensee continue this statement by adding that "There is no guarantee that such contracts will lead to more efficient outcomes than internal organization."

<sup>22</sup> Joskow and Schmalensee 1983, p. 109.

Joskow and Schmalensee examine the decision to organize internally or rely upon long-term contracts through the development of deregulation scenarios.<sup>23</sup> These scenarios include: 1) Complete deregulation; 2) Deregulation of wholesale transactions; 3) Separate distribution and deregulate wholesale power transactions; 4) Complete vertical disintegration and deregulation of wholesale power transactions.

**THE FINANCIAL EXTERNALITY ISSUE:** An electric utility may sign a long-term contract when it agrees to purchase capacity and energy from a NUG (either PURPA "qualified facilities" or independent power producers) or another electric utility. The present value of the capacity cost-related cash flows that the utility is required to pay under a long-term contract to a NUG has "debt-like" characteristics from the stand-point of the purchasing utility.<sup>24</sup> Since purchased power contracts can increase an electric utility's fixed charge burden and financial leverage, it can be argued that utilities bear a hidden capital structure and cost of capital impact (externality) when they make a commitment to make capacity payments under a long-term contract to a NUG.<sup>25</sup> Utility bond rating firms have begun to consider purchased power in their bond rating evaluations.<sup>26</sup> Electric utilities have reportedly been downgraded as a result of the impact of purchased power capacity payments on their credit-worthiness.<sup>27</sup>

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<sup>23</sup> Joskow and Schmalensee 1983, pp. 94-107.

<sup>24</sup> Thus it would be naive to simply attempt to "add up" the capital structures of the IPP(s) and the purchasing utility and say that is the combined electric system's capital structure. From the purchasing electric utility's point-of-view, the financial impact of the present value of the cash flow from the purchaser of the power is quasi-debt regardless of the actual capital structure of the NUG - unless specific contractual arrangements have been made.

<sup>25</sup> See Lewis J. Perl and Mark D. Luftig, "Financial Implications to Utilities of Third Party Power Purchases," Electricity Journal, November 1990, pp. 24-31. See also Perl and Luftig, "The Need for Proper Risk Allocation in Build-vs.-Buy Decisions: A Response," Electricity Journal, June 1991, pp. 60-63 and Perl and Luftig, "Still More on Build vs. Buy," Electricity Journal, October 1991, pp. 2-3.

<sup>26</sup> Regarding Moody's, see "Purchased Power Commitments and Their Impact on Investor-Owned Electric Utility Credit Quality," Moody's Investor Service, August 9, 1990. Regarding S&P, see Deborah Goldsmith, "Utilities' Risks in Purchasing Power," Standard & Poor's Creditweek, pp. 4-7.

<sup>27</sup> Virginia Electric Power Company, Boston Edison Company, and Southern California Edison have reportedly been downgraded by at least one of the major bond rating agencies (Moody's or S&P) because of their purchased power obligations. See Catherine A. Morris, "Special Report: Build vs. Buy -- What's Really Happening with Ratings for Utilities that Purchase Power?" Electricity Journal, July 1992, pp. 13- 21.

S&P, for example, treats take-or-pay contracts differently than take-and-pay contracts.<sup>28</sup> S&P generally treats take-and-pay (hell-or-high-water) contracts, which include an unconditional requirement that the utility make certain capacity payments, as quasi-debt and therefore adds these "off-balance-sheet" obligations to the book capital structure amounts in order to calculate capital structure ratios. In recent years take-and-pay contracts that require capacity payments only if the capacity is available for use by the utility have begun to predominate; the capacity payments related to these contracts are not treated as quasi-debt but are considered in S&P's cash flow analysis and in the calculation of the fixed charge coverage ratio. Thus, while purchased power contracts vary in financial impact based on contractual terms, long-term contracts that include capacity payments have an impact on the utility's credit-worthiness.

**TWO MODELS CONTRASTED -- ENGLAND AND THE U.S.:** Market structure issues can be conveniently analyzed by contrasting England's market structure with the vertically-integrated investor-owned electric utilities that predominate in the U.S. To a large extent, Joskow and Schmalensee's fourth model, vertical disintegration and deregulation of wholesale power transactions, has been implemented in England.

The United Kingdom is the most visible example of the privatization of a government-owned utility.<sup>29</sup> The hallmark of the U.K.'s privatization has been a corporate restructuring in order to encourage competition. In England, for example, the electric generation, transmission and distribution systems have been structurally separated and thus vertical integration has been eliminated.<sup>30</sup> English regulation has been devised and implemented in order to reflect the revised industry structure.

Most investor-owned utilities in the U.S., on the other hand, are vertically-integrated generation, transmission and distribution electric utilities. In recent years, however, many U.S. electric utilities have begun to purchase a portion of their generating capacity through long-term contracts with a NUG or with other electric utilities.

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<sup>28</sup> Deborah Goldsmith, "Financial Adjustments Associated with Purchased Power," Standard & Poor's Creditweek, p. 7.

<sup>29</sup> A number of countries, including New Zealand, Norway and Sweden have implemented or are considering privatization/restructuring efforts that follow the English model. Regarding Norway, see Juliet Sychrava, "From Public to Private," World Electricity Survey, Financial Times, May 14, 1992, p. 1 and Synergic Resources Corporation, "New Energy Act Challenges Norway's Utilities," Synectics, p. 4. Regarding New Zealand, see "New Zealand Utility Issues First Privatization Plan Under New Law," Electric Utility Week, August 17, 1992, p. 16. Regarding Sweden, see Sarah Webb, "Sweden To Open Up Electricity Market," Financial Times, April 1, 1992.

<sup>30</sup> See the Preliminary Placement Memorandum (Rule 144: A Package Offering of American Depositary Shares of National Power PLC and PowerGen plc), dated February 1, 1991, of National Power PLC and PowerGen plc. Goldman, Sachs & Co. was the lead underwriter of this offering.

**THE FINANCIAL EXTERNALITY AND MARKET STRUCTURE:** The financial externality can best be understood by contrasting a vertically-integrated electric utility with a distribution-only electric utility. For a vertically-integrated electric utility, such as most investor-owned electric utilities in the U.S., if the utility built and operating its own new generating unit, an "implicit" transaction would occur between the "distribution" and "generation" segments -- with the "transmission" segment acting as the middleman. If this same vertically-integrated electric utility firm purchased power from an "external" generator -- either a NUG or another utility -- under a long-term contract, the capacity payments related to this "explicit" transaction would trigger review of the financial externality. Thus, from the perspective of the "distribution" segment the two transactions are comparable -- yet a "financial externality" penalty would be applied to only the "explicit" transaction and not to the "implicit" transaction.

For a distribution-only electric utility firm, such as is those found in England, the situation is altogether different -- all capacity payments related to long-term debt are "external" and would therefore be treated symmetrically.

In order to correctly analyze the financial impact of capacity payments related to long-term purchased power it is important to recognize that:

- The analysis should be symmetrical. While the cost of the "financial externality" is measurable, the foregone option, the utility build option, might have been more costly than letting someone else build the capacity (and which would have required ratepayers to bear more risks).
- Not all utility capacity payments are fully equivalent to debt for the utility. Capacity payments are generally conditional -- based on availability. Utility debt, on the other hand, is unconditional -- it must be paid in full in a timely manner. From a financial risk standpoint, NUG capacity can be attractive since capacity payments for power are typically paid only if the capacity is available. On the other hand, for a utility-owned plant, ratepayers typically bear the cost of the plant even if it is not available. Thus, NUG capacity can provide important benefits to utility ratepayers.

**APPLICABILITY TO UTILITY REGULATION:** Long-term contracts for generation have become an increasingly popular alternative to vertical integration. While some would argue that the financial impact of capacity payments related to power purchase contracts can affect a utility's capital structure and cost of capital-related issue, it is important not to overestimate this impact.

These issues affect electric utilities and their regulators from several different standpoints:

- **Bond Rating Impact.** Bond rating agencies, such as Moody's and Standard & Poor's, have begun to consider the impact on the utility's credit-worthiness of electric utilities purchases of power under long-term power purchase contracts.



Regulatory Proceedings. The financial ramifications for the purchasing utility under these power purchase contracts have begun (or could in the future begin) to be considered in a number of utility regulatory proceedings.

- 1) Utility least-cost, integrated resource planning proceedings. State-level integrated resource, least-cost planning proceedings are likely to determine what electric generating capacity is built in the future. The specific resources to be built in the future will often be selected through the utilization of "competitive bidding" procedures. Environmental "externalities" have increasingly begun to be explicitly considered in resource planning proceedings and competitive bidding processes. In the future the impact of a NUG plant on the purchasing utility's cost of capital (i.e., a financial "externality") is likely to also begin to be explicitly recognized in resource planning proceedings. If overestimated, the financial externality "adder" could make NUG capacity appear more expensive and thereby induce regulators to reject NUG projects that might otherwise be attractive.
- 2) QF avoided cost proceedings. Under PURPA, state regulators set new "avoided cost" rates for Qualified Facilities biannually. The estimation of the "financial externality" could affect these proceedings. If the financial externality's impact on the utility's cost of capital is misestimated and an inappropriately large downward "equity adjustment" is made to the avoided capacity cost, the economic and financial viability of otherwise economically attractive NUGs could be significantly affected.
- 3) Utility rate case proceedings. If the financial externality is misestimated, the utility could over- or under-earn its cost of capital.

Cost of Capital Impact. Most importantly, these long-term contracts may have a significant impact on the utility's cost of equity and its weighted average cost of capital. Given the capital intensive nature of the electric utility industry, the long-term cost of capital is an important determinant of the cost of electricity.

The financial impact of capacity payments related to power purchase contracts has been a highly visible issue in recent years. In a vertically disintegrated utility system, such as is found in England, this issue can readily be addressed symmetrically. In the vertically integrated U.S. investor-owned electric utility system, however, asymmetrical results could occur thereby leading to a perceived decline in the attractiveness of non-utility generation.



APPROPRIATE PRICING POLICIES TOWARD BYPASS:  
An Application of Natural Monopoly Theory  
With Spatial Considerations

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State regulators are increasingly being faced with the problem of the potential bypass of the common utility service delivery system by single or multiple customers. Bypass is defined here as the failure of current or potential customers to use the existing common public utility network to obtain part or all of the required service; instead, these customers build or lease a private system. Bypass arises most frequently in the natural gas and telecommunications industries, although the electric industry is by no means immune, and is largely the result of institutional (legal) or technological changes. The purpose of this paper is to examine some possible regulatory responses to bypass.

The first part of the paper consists of a discussion of the portions of the theory of natural monopoly that have a bearing on the bypass question. We discuss the importance of cost function subadditivity and economies of scale and scope for the existence of natural monopoly, following the work of Baumol and others. We then extend these basic principles to account for the spatial nature of the delivery of public utility services, taking the view that the location of the customer is an important service characteristic and that delivering the same service to two different locations is actually the provision of two distinct services.

Section II discusses the criteria that should be used to determine whether a particular instance of bypass should be permitted. These criteria amount to a test of which alternative -- allowing bypass or maintaining a more traditional network -- yields the lower long run social cost. We demonstrate the importance of distinguishing between existing and new customers in applying the criteria.

The third section shows how the criteria can serve as a basis for a pricing policy that can forestall uneconomic bypass. The pricing policy is illustrated with references to the natural gas and telecommunications industries. In this section we also briefly address the question of whether customer-specific pricing is discriminatory.

Finally, in Section IV we present conclusions and recommendations for further research. We conclude that the formulation of appropriate regulatory policies toward bypass requires good information about the characteristics of the relevant cost functions, and that more research must be done in order to improve that information.

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<sup>1</sup>The views expressed here are those of the author and do not necessarily reflect the views or policies of the Missouri Office of the Public Counsel.

## I. Natural Monopoly Theory and Spatial Considerations

A large amount of work in natural monopoly theory has been done in the past fifteen years. Baumol, Panzar, Willig, Faulhauber, Bailey, Sharkey, and many others have developed this body of knowledge in a series of books and papers<sup>2</sup>. The work consists mainly of explorations of the cost structures under which a natural monopoly can be said to exist. These explorations have yielded several principles establishing the conditions under which natural monopoly exists and is sustainable at subsidy-free prices. In this section of the paper, we will summarize the key results of natural monopoly theory and discuss how the theory can be modified to take account of spatial considerations. Spatial (locational) factors are of primary importance in understanding the bypass phenomenon.

The existence of natural monopoly depends primarily on the characteristics of the cost functions governing the production of one or more goods or services. A cost function that is strictly globally subadditive is both necessary and sufficient for the existence of multiproduct natural monopoly<sup>3</sup>. A cost function is subadditive if it is impossible for multiple firms to satisfy the market demand vector at a cost less than that of a single firm serving the entire market. That is, a cost function  $C$  is subadditive if:

$$C(q) = C(q^1 + \dots + q^m) \leq C(q^1) + \dots + C(q^m) ; \quad (1)$$

where  $q$  is the  $(n \times 1)$  vector of market demands. A natural monopoly in the neighborhood of the market demand can be said to exist if (1) holds in that neighborhood; it is quite possible for natural monopoly to exist for some output levels but not for others. This latter possibility, referred to by Sharkey<sup>4</sup> as "output specific subadditivity," will be an important basis for the discussion of bypass that follows in a later section of this paper.

Economies of scope exist when it is less costly for a single firm to supply the entire market demand for each of multiple products than it is for multiple firms, each producing market demand for a subset of the products under consideration. Economies of scope are thus a special case of subadditivity. In terms of equation (1), each of the output vectors  $(q^i; i = 1, \dots, m)$  has at least one zero element, and each output is produced by only one firm. For the two product case ( $n = 2$ ) we have:

$$C(q_1, q_2) \leq C(q_1, 0) + C(0, q_2). \quad (2)$$

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<sup>2</sup>See, for example, Baumol (1977) and (1986); Baumol, Bailey, and Willig (1977); Baumol, Panzar, and Willig (1982); Faulhaber (1975); and Sharkey (1982). A complete listing of all references cited appears at the end of the paper.

<sup>3</sup>Berg and Tschirhart (1985), p. 35.

<sup>4</sup>Sharkey (1982, p. 58) states that "it is more convenient to deal with unconditional subadditivity. . .," and he is apparently referring to mathematical convenience. Unfortunately for regulators, most realistic natural monopoly possibilities are output specific.

If the opposite is true and single-product specialization is the less costly way to organize production, we have diseconomies of scope.

One of the many interesting results of natural monopoly theory is that the presence of economies of scale, defined generally as declining average cost, is neither necessary nor sufficient for the existence of cost function subadditivity. This means, among other things, that it is possible for there to be diseconomies of scope even though average costs are declining. This possibility also has implications for the later discussion of bypass.

Another aspect of natural monopoly theory related to bypass is the sustainability of a natural monopoly. A natural monopoly is sustainable if there exists a set of subsidy-free output prices that are sufficiently low to deter entry into any one or combination of markets served by the monopolist<sup>5</sup>. Obviously, whether or not a natural monopoly is sustainable depends in part on the operational definition of subsidy. This definition depends critically on how one determines the cost to serve individual customers when there are common costs.

One important determinant of public utility cost structures that is rarely addressed explicitly in natural monopoly theory is the spatial density of demand for the service in question. Sharkey, in a notable exception, examines spatial conditions in his discussion of destructive competition<sup>6</sup>. The fact that spatial considerations are generally not treated explicitly in natural monopoly analyses is somewhat surprising in light of the fact that many works in the field of public utility economics list direct customer connections as a factor contributing to an industry's status as a public utility. For example, Bonbright, Kamerschen, and Danielsen state that "Because production and consumption are synchronous, utilities need... generally to maintain direct connections by wire, pipe, or other means, with their customers."<sup>7</sup> Berg and Tschirhart, in summarizing a 1902 work by Farrer, point out that a natural monopolist's production process tends "to involve direct connections with customers."<sup>8</sup>

One way to include spatial considerations in natural monopoly theory is to treat the provision of a service at a given location as a unique service. Doing so does not require us to alter the cost tests that were summarized earlier in this paper; subadditivity of the cost function would remain a necessary and sufficient condition for the existence of natural monopoly. In terms of equation (1), each of the  $q^i$  could be made up of  $n$  elements representing the provision of a single "service" at  $n$  locations, or of  $(n \times k)$  elements representing the provision of  $k$  services at  $n$  locations. For example, a natural monopoly may exist in the provision of a single "service", but not more than one, to all locations. Alternatively, the provision of all

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<sup>5</sup>See, for example, Baumol, Bailey, and Willig (1977).

<sup>6</sup>Sharkey (1982), p. 139-41.

<sup>7</sup>Bonbright, Danielsen, and Kamerschen (1988), p. 9.

<sup>8</sup>Berg and Tschirhart (1988), p. 3.

services to a small group of contiguous locations, but not to all locations, may be a natural monopoly.

Another way to include spatial considerations in natural monopoly is to measure each element of each  $q^i$  in terms of units of demand density (quantity demanded per unit area) in each market area  $i$  instead of in terms of production quantities of the  $i^{\text{th}}$  firm. Following Sharkey's terms, we could speak of unconditional subadditivity or density specific subadditivity. Determining which of these two is present is an important step in formulating appropriate regulatory policies regarding competition in regulated industries.

Each of these possible approaches to the inclusion of spatial considerations introduces another dimension to the notion of scale economies. Absent locational cost determinants, scale economies are only measured in terms of the average cost of production output per unit of time. When demand density is permitted to have an impact on the cost function, the physical length of transmission and distribution networks becomes another important cost determinant. Furthermore, it is demand density, not quantity demanded or length alone, that is the primary determinant of the likelihood of bypass.

## II. Natural Monopoly and Bypass

The central thesis of this paper is that appropriate policies toward bypass must account for the spatial nature of the cost structure of providing some public utility services. The initial question that must be answered in determining policy toward bypass is: Is there a natural monopoly? If there is not, bypass should not be discouraged. Indeed, in the absence of natural monopoly conditions, bypass may very well reduce the total cost of providing a particular service or group of services to all customers, at least in the long run. In this section of the paper we will explore the way in which tests for natural monopoly should be used to define conditions under which bypass should be discouraged.

The previous section argued that locational factors can be very important in determining the existence of natural monopoly. Whether a particular instance of bypass is found to be "economic" depends on the existence of natural monopoly and, therefore, on locational factors. Public utility customers who are considering (and in many cases, threatening) bypass often argue that there is no such thing as uneconomic bypass. They reason that they would not consider bypass if it were truly uneconomic. This reasoning, however, exhibits a failure to properly apply natural monopoly principles, particularly regarding sustainability. Whether bypass is economic from the standpoint of an individual customer is largely a pricing or sustainability question. Determining the advisability of bypass from a societal standpoint has nothing to do with pricing or sustainability, however -- only cost structures matter. This is an important distinction for regulators to keep in mind when formulating policies toward bypass.

The first task of regulators in making bypass policy is therefore to determine whether cost conditions are such that natural monopoly exists. In practical applications, this amounts to a comparison of the cost of serving a given customer as a part of the network (marginal network costs) to the stand-alone cost of serving the

customer. This is not an easy task, however, since even if full information regarding network costs is available, regulators must still determine which costs should be included in marginal network costs.

In order to establish the elements of marginal network costs, it is first necessary to determine the time interval to be considered. Should only short run operating costs be considered, or should the long run cost of facilities be included? And if the cost of facilities is included, should only the cost of customer-specific plant be used, or should marginal network costs include a share of common costs?

Practical regulatory considerations also enter the decision process. Traditional rate base-rate of return regulation requires that a utility be afforded the opportunity to earn a fair return on its investment in facilities that are used and useful in the provision of utility service. If no natural monopoly is found to exist with respect to serving a particular customer or group of customers, indicating the desirability of allowing bypass, should sunk costs (existing investment) be ignored in the setting of utility revenue requirements? Or should regulators be obligated to permit the utility to recover a return on and the return of investment in bypassed plant, even common plant? Is it not desirable to get some contribution to network common costs rather than none at all? To a large extent, these latter questions are normative ones for which no clear answer can be provided by strict applications of economic theory. The orientation of this paper is toward policy, however, so we will endeavor to provide some reasonable answers.

We will assume that, if bypass is permitted, legal restrictions would require that revenues lost to bypass be recovered from remaining customers. Whether this should be the case is debatable. Indeed, a good argument can be made that, since bypass arises almost exclusively because of technological advances or institutional changes beyond the control of ratepayers, the risks should be entirely borne by utility stockholders. The fact that certain events cannot be foreseen should not serve as a justification for having ratepayers bear such risks. Put another way, why should the remaining ratepayers make up revenues lost to bypass if they have not changed their consumption patterns? In any event, the implication of permitting common costs to be shifted is that only truly marginal network costs should be considered in economic analyses of particular instances of bypass.

In cost tests used to evaluate the desirability of bypass, a distinction must be made between existing and potential customers. There are no avoidable network facilities costs with respect to existing customers. The addition of a new customer, however, would require that the network be augmented to meet the additional demands placed on the system. Simply put, it is cheaper to continue to serve an existing customer than it would be to serve a new one. It may very well be, then, that service to an existing customer is a natural monopoly, but service to a new customer is not.<sup>9</sup>

The geographical density of market demand is likely to be an important determinant of the existence of natural monopoly. For example, according to Gabel

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<sup>9</sup>Viewed in this context, economic development rates that allow discounts to new customers are ill-advised, particularly since, in practice, the availability of such rates is restricted to large additions to load.

and Kennet, "The cost of telephone service is also a function of customer density."<sup>10</sup> Regulators should therefore take market demand density factors into account, and can do so by using one of the approaches described in the previous section.

As discussed above, a market may consist of a single customer location, or markets may be defined by differences in market demand densities. It is possible for less dense markets to be natural monopolies, while high density markets are not. That is, cost functions may be locally subadditive for service to areas that have low usage per unit area, such as single-family residential zones, but cease to be subadditive at the higher density levels that are typically encountered in urban central business districts. Having two sets of distribution facilities, each owned by a different producer, might represent a wasteful duplication in a residential area but not in a high density business district. Under these circumstances, it would be incorrect to characterize a market in terms of a single monolithic "service" such as basic local telephone service or access to long distance telecommunications carriers. Market definition thus becomes an important aspect of discerning natural monopoly.

There are some empirical studies that might help regulators determine whether natural monopoly exists in a particular market. Generally speaking, these studies have inquired about the presence of various cost conditions that are necessary for the existence of natural monopoly. Roberts studied the production and distribution of electricity and found that there are no economies associated with increasing the size of a utility's service territory, given constant output per customer and constant customers per unit area. He did find, however, that economies of output density do exist, at least in the range of output densities examined.<sup>11</sup>

In a study of the cost of providing local telephone services, Gabel and Kennet employed an engineering based model of telecommunications networks. They state that "The results from our optimization model suggest that the local exchange telecommunications market is not a natural monopoly under all feasible situations."<sup>12</sup> For example, they found that there are diseconomies of scope between private line and public switched local telecommunications services, which means that these two types of service should be provided over separate networks in order to minimize total cost. They also found that "For less densely populated markets (customers per square mile), the industry may be a natural monopoly."<sup>13</sup>

### III. Possible Pricing Policies Toward Bypass

Since each instance of potential bypass will have some unique aspects, regulators should examine each case individually. Suppose that, after making the appropriate cost calculations, it is found that a particular instance of bypass is found to be

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<sup>10</sup>Gabel and Kennet (1991), p. 32.

<sup>11</sup>Roberts (1986).

<sup>12</sup>Gabel and Kennet (1991), p. 71.

<sup>13</sup>Gabel and Kennet (1991), p. 77.



uneconomic, even though the customer in question would benefit from it. What are the options available to policymakers?

The argument can be made that bypass should be prohibited on strict public interest grounds, and that any ill effects of a prohibition that fall on potential bypassers should be considered an unfortunate result of natural monopoly regulation. Conversely, one could argue that it would be unfair for any customer to be charged more than the stand-alone cost of service.<sup>14</sup> Indeed, this is the reasoning that underlies most court cases that uphold the legal right of customers to bypass the local utility. Since courts have declared illegal most attempts to ban bypass, we will assume that prohibition is not an available option. The inability to prohibit bypass is unfortunate, since pricing schemes -- the only alternative left to regulators -- will not work if the natural monopoly is unsustainable.

In this section we present a more detailed examination of possible pricing policies. In general, rates for existing or potential customers should be reduced to levels just low enough to forestall bypass, but never below the marginal cost of service. Recall that the marginal cost of a new customer is higher than that of an existing customer, but may still be below the stand-alone cost. Since considerable bypass activity has occurred in the natural gas distribution industry, and to a lesser extent, in telecommunications, we will couch the following discussion in terms of examples from those industries.<sup>15</sup>

#### A. Natural Gas Bypass

Bypass in the natural gas industry occurs when a customer of a local distribution company (LDC) makes a direct connection to an interstate pipeline and stops using the LDC's facilities. Observers of the natural gas industry are well aware of the sweeping changes that have occurred in that industry since the Maryland People's Counsel cases.<sup>16</sup> One very significant change is the ability of customers behind LDCs to purchase gas supplies through brokers or directly from producers and pay interstate pipelines for transportation services only. Since these customers no longer depend on the LDC for gas supplies, there is an incentive for them to avoid dealing with the LDC altogether. The closer a customer is to an interstate natural gas pipeline, all else equal, the greater is the probability that bypass will be optimal for that customer. Customer size, expressed in terms of the rate of service usage, is

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<sup>14</sup>Baumol, in Superfairness, takes this reasoning one step further by constructing a mathematical proof that if any customer is paying more than stand-alone cost, at least one customer is paying less than marginal cost, indicating the presence of subsidy. This proof is crucially dependent on the assumption that the same technology is employed to provide both the network and the stand-alone system. Such is not the case in most instances of bypass, and it is therefore inappropriate to conclude that bypass by an individual customer is conclusive evidence that the entire class to which the bypasser belongs is subsidizing other rate classes.

<sup>15</sup>We are aware of examples in the electric industry involving "cogeneration avoidance" rates, but we will not consider those examples here since they have little if anything to do with locational factors.

<sup>16</sup>Maryland People's Counsel v. FERC, 761 F.2d 768 (D.C. Cir. 1985) (MPC I); Maryland People's Counsel v. FERC, 761 F.2d 780 (D.C. Cir. 1985) (MPC II).

also very important, especially since significant economies of scale exist in the construction of pipelines. The greater a particular customer's usage is, the farther away the customer can be from the interstate pipeline and still find bypass profitable. Clearly, in order to forestall bypass, the LDC must price its service below the cost of constructing and maintaining a stand-alone pipeline. The price charged should not, however, be less than the marginal network cost, or a subsidy will exist and the remaining customers would be left better off if bypass were permitted.

Short run marginal network costs are very low for existing customers, since facilities costs are not included. Marginal network costs are higher, perhaps significantly so, for new customers or if the retention of an existing customer would require the extensive replacement of existing facilities. It may be beneficial to the LDC over the short run, and to the LDC's customers over periods longer than the rate case interval, to price service to potential bypassers at short run marginal cost. Over the long run, however, all customers served by the LDC cause some common costs, and the distinction between new and existing customers disappears. Regulators must take care to prevent the "short run" from continuing for too long; otherwise, captive ratepayers will be paying more for service than is necessary, all in the name of keeping a customer on the LDC system.

#### B. Telecommunications Bypass

Generally speaking, the fear of bypass in the provision of local telecommunications has recently eased, judging by RBOCs' own estimates of bypass activity,<sup>17</sup> but there is clearly a competitive market for some private line and interexchange access services. The competitors of traditional monopoly providers of these services are known generally as competitive access providers, or CAPs.

The services that can be provided by CAPs vary from state to state. Some states permit only limited competition in nonswitched services such as private lines and access transport, while others permit CAPs to offer switched services and require that the traditional monopoly supplier provide CAPs with easy access to the switched public network.

The CAPs are generally only interested in providing service to large volume customers in high density areas such as urban central business districts. Most CAPs construct what is known as a "fiber ring" to serve their closely grouped high volume customers, but to date none have attempted to enter the single family residential market. This is an excellent example of the general principle discussed in an earlier section of this paper -- that markets should be identified on the basis of demand densities. It is entirely possible, and appears to be true here, that the provision of service in a low density area is a natural monopoly while in a high density area it is not. It is an improper logical leap to say that because CAPs exist, the overall market for basic local service is competitive, or is even likely to become competitive.

If it is found that the provision of telecommunications services in high density areas does not have the characteristics of a natural monopoly, bypass should be permitted and the local telephone monopoly's costs of providing these services should be removed from regulatory scrutiny. Other ratepayers should not be burdened with the costs of serving a truly competitive market, especially if it is true, as Gabel and

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<sup>17</sup>Federal-State Joint Board Monitoring Report (1992), p. 303-305.

Kennet suggest, there may be diseconomies of scope associated with the joint provision of service in high and low density areas simultaneously.<sup>18</sup>

### C. Related Issues

There are numerous issues and questions associated with the question of bypass; we will address but three of them here. The first is the possibility of using rate design, as distinct from cost allocation, to deter bypass. A second question is whether it is appropriate to apply location-specific pricing to all customers, not just those who threaten bypass. The third issue concerns the use of alternate service sources by a customer seeking enhanced service reliability rather than a reduction in costs.

Utility rates often take the form of multipart tariffs, with fixed monthly charges, charges based on the maximum usage rates over an interval, and charges based on total usage over an interval. In the energy industries, these charges are known, respectively, as customer charges, demand charges, and commodity (gas) or energy (electricity) charges. A customer with a high load factor, defined loosely as the ratio of average usage to peak demand, benefits as demand charges are increased and commodity/energy charges decline; low load factor customers would benefit from rate changes in the opposite direction. Most, if not all, bypass candidates have high load factors. Their bills can therefore be reduced, and bypass discouraged, by putting all of the relevant class's allocated costs into the demand charge except very short run variable costs. Since the latter costs are very small, these customers would in effect pay only a flat monthly rate.

Reducing the prices charged to potential bypassers in order to forestall bypass clearly is a form of location-based pricing. This raises a question: Should prices for all members of a class be based on individual customer locations? One could argue that doing so would reflect the true cost of service, and point out that many interstate pipelines identify rate zones and charge higher prices to customers located greater distances from the production fields. While location-based pricing may be more reflective of cost causation than average, rolled-in, or "postage stamp" prices, we do not believe that a general structure of locational price differences would be fair to existing customers, who were not faced with deaveraged prices when making location decisions. Allowing discounts only to those customers who can credibly threaten bypass could be viewed as discriminatory, but not unduly so, since there is indeed a cost basis for such discounts.

The final issue we will mention here is the importance of distinguishing between true bypass, in which a customer completely ceases taking service from the existing supplier, and alternate source arrangements designed to provide a backup source for reliability purposes.<sup>19</sup> A customer will engage in true bypass in order to reduce his own cost of procuring utility services. In such a case, it is appropriate to allow a rate discount, at least over the short run, to retain the customer. If a customer is merely seeking back-up service from the existing provider, or will use the bypass

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<sup>18</sup>Gabel and Kennet (1991), p. 77.

<sup>19</sup>Customers' desire for backup telecommunications is apparently the prime reason for the success of CAPs, many of whom actually charge more for a given service than the existing local telephone service supplier.

facilities for backup, the full utility demand charge should be imposed to recover the relevant utility fixed costs, along with variable usage-based charges (e.g., commodity charges) imposed on actual usage of the utility's facilities. The justification for this is that it is costly to provide and maintain backup facilities; many costs are incurred to stand ready to provide service, regardless of the actual usage level of the customer. Special location-based rates should only be used when the customer has no desire for backup service, and only when that customer can demonstrate that bypassing the existing provider is a financially viable (from the customer's standpoint) alternative.

#### IV. Conclusions and Suggestions for Further Research

In this paper we have attempted to outline the implications of considering spatial factors in the context of natural monopoly theory. There can be no doubt that such factors play an important role in many bypass situations. We conclude that in formulating policies toward bypass, regulators must first determine whether a natural monopoly exists, and must pay close attention to locational factors in making that determination. Where natural monopoly is detected, bypass should be prevented. Legal prohibitions should be used whenever possible, especially if the natural monopoly is unsustainable. Pricing policies to avoid bypass should consist of a case by case determination and implementation of the maximum bypass-forestalling price.

In order to provide regulators with better information about the desirability of particular instances of bypass, more empirical work is needed to determine whether existing cost conditions fit the natural monopoly mold. This research should include an examination of the influence of spatial factors on public utility costs.

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# ANALYZING MERGERS IN MARKETS IN COMPETITIVE TRANSITION

BY

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This article describes a simple yet complete method for analyzing mergers within markets in competitive transition. The importance of this approach lies in the explicit correspondence it introduces between the characterization of a merger (Selection of a Basic Model) and a theory of competitive effect (Identification of the Economic Theory). If a Basic Model is correct, the related economic theory can be tested and, once tested, used to predict the post-merger behavior of firms. The analyst, able to predict the post-merger behavior of firms, can determine whether or not a particular merger is anticompetitive.

This method can be applied to a broad set of markets which are in competitive transition because of economic, technical, and regulatory change. Electric power, gas pipeline, and telecommunications markets are all suitable for application of this method. This method is appropriate for non-merger issues. It presents concepts useful in analyzing other competitive issues in regulated markets, such as when to permit "market-based" or "flexible" prices.<sup>1</sup>

## OVERVIEW OF THE METHOD

This method builds upon the approach of the U.S. Department of Justice and the U.S. Federal Trade Commission Merger Guidelines ("Guidelines").<sup>2</sup> The Guidelines present the federal government's antitrust enforcement policy and express how antitrust authorities screen mergers under the Clayton, Sherman and FTC Acts.<sup>3</sup> The Guidelines focus on mergers occurring in well-developed and highly competitive industrial markets. The

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<sup>1</sup> See, Barry C. Harris and Mark W. Frankena, "FERC's Acceptance of Market-based Pricing: An Antitrust Analysis," *The Electricity Journal*, June 1992, 38-51.

<sup>2</sup> U.S. Department of Justice And Federal Trade Commission Revised Merger Guidelines, April 2, 1992; U.S. Department of Justice, Merger Guidelines, June 14, 1984.

<sup>3</sup> 15 U.S.C. Section 18 (1988), 15 U.S.C. Section 1 (1988), and 15 U.S.C. Section 45 (1988), respectively.

Guidelines generally presume the prevailing price to be competitive<sup>4</sup> and focus on the threat that a merger may transform a competitively-functioning market into a non-competitive one.<sup>5</sup>

In contrast, this method focuses on mergers in industries undergoing competitive transition. These markets are not necessarily well-developed or highly competitive, i.e., prevailing price may differ from the price that would prevail in a mature and highly competitive market. In this situation, market participants' desire to gain control over the competitive transition can be a salient motive for merger.

These considerations suggest the need for a unique approach. This method requires the analyst to select a basic model which explicitly characterizes the prevailing price as *competitive* or not and the form of asset consolidation as *horizontal*, *potential horizontal* or *neither*.

**Outline of Method:** The method developed here is presented as a sequential three phase process. In the first phase, the analyst identifies a merger as belonging to one of six basic types. The basic type the analyst selects depends on the analyst's conceptualization of important factual details. The first phase, Select the Basic Model, is the topic of Section I of this article.

In the second phase, the analyst relates the selected merger type to a specific economic theory of how the merger may affect competition. The theory suggests a simple statement of hypothesis explaining how the merger may adversely affect competition. The second phase, Identify the Economic Theory, is the topic of Section II of this article.

In the third phase, the analyst tests the Economic Theory against the facts required to support it. Using the specific facts of a merger, the analyst builds upon the logic of the economic theory to tell a "market power story" for the particular merger. The third phase, Test the Theory, is a detailed application and is the subject of a separate article.

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<sup>4</sup> The Guidelines indicate, "[T]he Agency will use prevailing prices of the products of the merging firms...unless premerger circumstances are strongly suggestive of coordinated interaction, in which case the Agency will use a price more reflective of the competitive price." 1992 Guidelines, 13.

<sup>5</sup> The Guidelines seek to, "prevent anticompetitive mergers yet avoid deterring the larger universe of procompetitive or competitively neutral mergers." U.S. Department of Justice and Federal Trade Commission Statement Accompanying Release of Revised Merger Guidelines, April 2, 1992, 1.



This method, although sequential, allows the analyst to revise the direction of the investigation. Selection of a Basic Model leads to use of a particular Economic Theory. Use of a particular Economic Theory, in turn, filters important from unimportant facts. An analyst who develops additional knowledge of the facts, however, can decide to revisit the selection of the Basic Model, and thus, the appropriate Economic Theory.

## I. SELECT THE BASIC MODEL

Each Basic Model is built on the answers to two questions.

(1) What is the present relation between the price charged by each of the merging firms and the competitive price? (2) What is the economic relation between the assets to be consolidated by merger?

**(1) What is the present relation between the price charged by each merging firm and the competitive price?** A central aspect of market functioning and performance is how the prevailing price for goods or services is set. The price may be set competitively or it may reflect the exercise of market power. Market power is the ability to raise and sustain market price above economic production cost, i.e., the cost which a firm operating in a competitively-functioning market could sustain.

If prevailing price is *competitive*, a merger can create the ability to exercise market power. If prevailing price is *supra-competitive*, i.e., above the price determined by a competitive process, market power already exists and the merger may enhance its exercise.

**(2) What is the economic relation between the assets to be consolidated?** Every merger consolidates assets. The character of the consolidation determines its significance for competition. Analyzing the relation between the productive capabilities of one merging firm and its merger partner identifies how asset consolidation may be of competitive significance. Asset consolidation is significant when the merger consolidates assets capable of supplying meaningful substitutes to buyers.

Merger provides an opportunity for *horizontal* asset consolidation when the merging firms participate in the market by supplying products which compete directly for buyers. For example, consider a merger between two dry cleaning firms. The firms have similar reputations for quality, charge similar prices, and are located in the same area. This information suggests that customers would readily transfer their business if one of the firms were to lower its price.

Merger may provide an opportunity for *potential horizontal* asset consolidation. Suppose that neither firm is invested currently in assets which allow that firm to compete with its merger partner, but that one firm has a potential to provide competitive overlap in supply,

i.e., one of the firms is positioned with a distinct and strong potential to compete. For example, consider a merger between a dry cleaning firm and a van fleet engaged in pick-up and delivery service. Suppose that the management of the van fleet has considered constructing its own dry cleaning plant in order to offer dry cleaning at each of its pickup and delivery locations and found that such expansion would be profitable.

Finally, a merger which cannot be classified as creating horizontal or potentially horizontal asset consolidation creates *non-horizontal* asset consolidation. If the merger partners do not participate in the same market currently, and if such overlap in product supply is unlikely to occur in the future, there is no horizontal consolidation aspect to the merger of competitive significance.

The analyst's classification of prices as *competitive* or *supra-competitive* and classification of the asset consolidation as *horizontal*, *potential horizontal*, or *non-horizontal* leads to six Basic Models. These are represented as A1 through B3 in the matrix table below.

<b>CHOICES FOR THE BASIC MODEL</b>			
	<i>Asset consolidation is:</i>		
<b>Prevailing prices are:</b>	<i>Horizontal</i>	<i>Potential Horizontal</i>	<i>Non-Horizontal</i>
	1	2	3
<b>Competitive</b> <b>A</b>	<b>A1</b>	<b>A2</b>	<b>A3</b>
<b>Supra-Competitive</b> <b>B</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>

This article examines only mergers with horizontal or potentially horizontal asset consolidation (cells A1, A2, B1 and B2).<sup>6</sup> The narrowing of focus allows a concentrated description of the economic theories of mergers in markets in competitive transition.

## II. IDENTIFY THE ECONOMIC THEORY

There is an economic theory related to each of the four Basic Models: Competitive Price and Horizontal Consolidation (Model A1), Competitive Price and Potential Horizontal Consolidation (Model A2), Supra-Competitive Price and Horizontal Consolidation (Model B1), and Supra-Competitive Price and Potential Horizontal Consolidation (Model B2).

Each of the theories shares a common theme: a merger which creates, enhances, or facilitates the exercise of market power is objectionable.<sup>7</sup> Raising and keeping the market price above the competitive price produces a sustained increase in profit for the seller. However, the profit from exercise of market power is created at the buyer's expense since the buyer pays more for the product or service than in a competitive market.<sup>8</sup> The higher price associated with the profitable exercise of market power forces each buyer either to reduce purchases or to pay more for the same purchase.<sup>9</sup> The aggregate response of individual buyers establishes the expression of market power as a combination of a decline in market output and a transfer of wealth from buyers to sellers. These social consequences (welfare loss and wealth transfer) are the economic objections to market power.<sup>10</sup>

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<sup>6</sup> Non-horizontal mergers are also of interest to regulators. Merger may provide a means to evade the price or profit ceilings imposed by regulation.

<sup>7</sup> "The unifying theme of the Guidelines is that mergers should not be permitted to create or enhance market power or to facilitate its exercise." 1992 Guidelines, 4.

<sup>8</sup> Market power is generally described in terms of a seller or group of sellers' ability to raise price above the competitive level. This article addresses merger partners as sellers. Analogously, a buyer or group of buyers' ability to depress price below the competitive level is described as "monopsony" power. An analyst may develop and apply a framework similar to the one presented here to consider anticompetitive effects of consolidation of the merger partners as buyers.

<sup>9</sup> Economists usually describe market power via the ability to raise price. However, nothing requires that price be the competitive dimension upon which competition declines. Deterioration of product quality, suppression of innovation, etc. are other means for exercising market power. 1992 Guidelines, 4 fn.6.

<sup>10</sup> 1992 Guidelines, 4.

Sellers will act on an opportunity to raise price only when additional profit will result. A seller who, raising price, sees customers flee and profit decline has no motive to sustain that price increase. Unable to raise price above the competitive level to increase profit, a seller is lead to compete, i.e., behave as a rival toward other sellers, in order to boost or sustain profit.

If a merger creates market power, the price increase associated with the exercise of market power is profitable. An analyst who can explain how and why the merger creates an opportunity to create, enhance or facilitate market power exposes the anticompetitive strategy behind the merger.

The theories presented below explain how a merger may create, enhance, or facilitate the exercise of market power. When applying each of the theories, the analyst uses a seven step procedure:

- 1) define a product market(s);
- 2) define a geographic market(s);
- 3) estimate market share concentration for each relevant market;
- 4) evaluate potential entry into each relevant market;
- 5) examine other characteristics influencing market behavior;
- 6) examine the effects of regulation on market behavior; and
- 7) explain how the merger creates opportunities for the profitable exercise of market power (if it does).

The seven step process always begins by identifying relevant product and geographic markets. The concept of a relevant market is a basic and very important analytical construct of competitive analysis. Often the key difference between those who believe a merger creates market power and those who believe otherwise is found in their disagreement about which products or which buyers and sellers to properly include in a relevant market.

Although the process places the definition of a product market and the definition of a geographic market in separate steps, analytically, these first two steps are performed interdependently. A relevant market refers to both a product grouping (product market) and the buyers and sellers engaged in trading the product (geographic market).

Product market definition is the effort to identify competing alternatives that buyers consider for each product supplied by a merging firm. The analyst begins to identify a product market by examining the goods or services of each merging firm. The ready availability of competing alternative products can make it unprofitable to raise a prevailing price. A merger that eliminates an important competitive option from the set of alternatives available to buyers can create, enhance or facilitate the exercise of market power.

Geographic market definition is the effort to identify competing sellers for each product of each merging firm. The analyst begins to identify the geographic market by evaluating the attractiveness of sellers which buyers recognize as capable of providing alternatives in the product market. Buyers' willingness to substitute alternative products or sellers in response to a small increase in the prevailing price charged by a merging firm controls the description of relevant markets.<sup>11</sup>

Having identified relevant markets, the analyst is able to proceed to the third step in which he or she quantifies the competitive position of each merging firm and of other firms in the market. A firm's competitive position may or may not be closely related to its historical share of product supply in the relevant market.<sup>12</sup> The analyst develops summary measures for the concentration of market supply and for the effect of merger on concentration of supply by aggregating the measures developed for individual sellers. The measure of concentration of market supply reflects both the number and the size distribution of sellers in the market. As concentration increases toward monopoly, product supply becomes distributed among increasingly fewer (and larger) firms. Seller concentration facilitates the profitable exercise of market power.<sup>13</sup>

In step four the analyst evaluates the prospect for market entry. Market entry occurs when potential market participants become actual market participants or existing market participants substantially increase available supply. Entry may occur, for example, when a potential or actual seller diverts supply destined elsewhere or invests in new productive capacity so as to increase market supply. Such action may be sufficient to undermine an attempted price increase. The analyst's evaluation of potential entry in step four varies significantly depending upon which of the theories the analyst is considering. These variations are discussed in more detail in Section II.

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<sup>11</sup> Details of the analytics of market definition are covered in Exhibit No. 569, Direct Testimony of Dr. Sarah J. Goodfriend in the Northeast Utilities Service Company merger (Re: Public Service Company of New Hampshire), Docket Nos. EC90-10-000, et. al., before the FERC, May 25, 1990.

<sup>12</sup> A "rough and ready" measure of a firm's competitive position is its historical share of market supply. Before ascribing competitive significance to individual sellers or to summary measures of market concentration based on such historical data, the analyst should examine the data for relevance to current and future conditions.

<sup>13</sup> See, e.g., George J. Stigler, "A Theory of Oligopoly," *Journal of Political Economy*, February 1964, Vol. 72, 55-69.

Step five allows the analyst to identify and evaluate other important characteristics of competitive significance. Since these factors are specific to the industry and to the market being examined, they defy simple generalization. However, they can be classified by effect. Some factors directly influence the profitability and likely success of a coordinated effort by the merging firms in cooperation with other market sellers to elevate and maintain price above the prevailing level. Other factors bear on the ability of the merging firms to "go it alone," i.e., ignore the response of other market sellers to an attempt to raise price.<sup>14</sup> The market's evolution and performance history also may provide the analyst with information of current competitive significance.

In step six the analyst examines applicable state and federal regulations to determine the effect, if any, on the profitable exercise of market power. For example, regulation may limit prices and pricing flexibility in relevant markets. Or, regulation may limit forms of competition available to sellers, e.g., by restricting facility duplication.

Ultimately, the analyst must synthesize the information in the six steps and produce a sensible and coherent story of the merger's likely effect on competition. This "market power story" describes the behavioral incentives sellers would face in the post-merger marketplace and reaches conclusions about the likelihood that the merger will create, enhance or facilitate the exercise of market power.

## THE FOUR ECONOMIC THEORIES

There are four economic theories. Each theory uses the seven step procedure. However, the importance of each step may vary depending on the particular theory the analyst selects.

### **Competitive Price and Horizontal Consolidation (Model A1):**

This model assumes the prevailing price is set competitively and that there is actual horizontal overlap in product supply. Under the theory of this model, merger can create an anticompetitive effect by transforming a competitively-functioning market into a non-competitive one. Merger changes the structure of the affected market thereby providing sellers with an ability to affect price.<sup>15</sup> Recognizing a mutual ability to set price, sellers no

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<sup>14</sup> See, Robert Willig, "Merger Analysis, Industrial Organization Theory and Merger Guidelines," *Brookings Papers on Economic Activity (Microeconomics)*, 1991, 292-3. See also, 1992 Guidelines, 41.

<sup>15</sup> Sellers gain influence over market price when price (or other product characteristics on which sellers compete) becomes responsive to individually-chosen or coordinated actions by sellers, such as the choice of output rates or quantities.

longer find competitive rivalry to be a best response. Merger provides the means to introduce and sustain shared monopoly. Here, merger transforms, perhaps radically, the pre-existing behavior of sellers.

In applying this theory, an analyst must take care to develop competitively meaningful concentration measures in step three. Where market concentration is low and remains so post-merger, direct horizontal asset consolidation is unlikely to transform a competitively-functioning market into a non-competitive one. If, however, post-merger concentration is moderate or high, the analyst should be concerned about the merger's ability to change market behavior.<sup>16</sup>

If the analyst finds moderate or high market concentration, the evaluation of potential entry in step four assumes great importance. The threat of entry by firms not currently in the market may function as an independent force affecting the behavior of current sellers. If conditions of entry are sufficiently easy, the threat of entry by firms not currently participating in the market can sustain competitive behavior. Thus, even in a highly concentrated or monopolistic market, easy entry makes the anticompetitive price increase unprofitable to sustain.<sup>17</sup>

This theory requires the analyst to carefully examine market characteristics (step five) to identify the most plausible anticompetitive strategy for the merging firms. The analyst must decide whether the merging firms are able, profitably, to raise price acting unilaterally or whether market conditions require the merging firms to coordinate their anticompetitive actions with other market participants. This judgement requires the analyst's careful investigation of market details to assess their implications for choice of strategy.<sup>18</sup>

**Competitive Price and Potential Horizontal Consolidation (Model A2):** This model assumes that the prevailing price is set competitively and the actual horizontal overlap in product supply between the merger partners is slight or non-existent. Elimination of the

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<sup>16</sup> Since 1982, the Guidelines have associated different levels of the Herfindahl-Hirschman Index of market concentration and changes in market concentration with differential levels of scrutiny and probable antitrust challenge. 1992 Guidelines, 28-31.

<sup>17</sup> The Guidelines present much new commentary about the evaluation of entry conditions into a relevant market. 1992 Guidelines, 47-55.

<sup>18</sup> For example, in the electric utility industry, factors such as the homogeneity of sellers' costs, the pattern of trade, degree of joint ownership of assets, size and duration of purchase contracts, and the authority ceded to power pools can be important in determining how profitable a coordinated or collusive strategy to raise price would be.

merger partners as separate market participants leaves the premerger concentration of market supply (measured in step three) essentially undisturbed. The theory of this model does not focus on the change merger creates in existing market concentration. Instead, this theory addresses the competitive role played by the merger partner as a prospective entrant into a relevant market.

A merger may create market power because it eliminates the present competitive threat posed by the merger partner. If it is the shadow cast by the merger partner's threat of entry which constrains the pricing of market participants and maintains competitive pricing, then elimination of this potential entrant through merger is likely to deteriorate market performance.<sup>19</sup>

A firm threatened by the imminent entrance of new competitors is a particularly likely candidate for application of this theory. In order to launch a pre-emptive strike, the firm may use merger to eliminate the rising competitive threat. The firm's anticompetitive strategy is to fortify its stronghold over assets others require for competitive entry into the relevant market. Ownership of or use rights to supplies which are difficult to reproduce and which are important in producing relevant products, (e.g., transmission facilities or rights-of-way) may be concentrated by merger. Where merger would reduce the availability of such assets to nonmerging potential entrants, merger will probably increase entry barriers.<sup>20</sup> Increasing the difficulty of entry by non-participants may allow market

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<sup>19</sup> "The economic theory of limit pricing suggests that monopolists and groups of colluding firms may find it profitable to restrain their pricing in order to deter new entry that is likely to push prices even lower by adding capacity to the market. *If the [potential entrant] had unique advantages in entering the market, the firms in the market might be able to set a new and higher price after the threat of entry ... was eliminated by the merger [emphasis added].*" 1984 Guidelines, 37-38. The 1992 Guidelines do not discuss mergers of potential horizontal consolidation, but refer to Section 4 of the 1984 Guidelines. Statement Accompanying Release of Revised Merger Guidelines, April 2, 1993, 3.

<sup>20</sup> Entry barriers are costs or demand disadvantages faced by potential entrants in relation to established firms. To illustrate, suppose moderate and small potential entrants are able, through aggregation of their loads, to construct facilities of sufficient capacity to achieve the same scale economies as market participants achieve. Suppose that one of these potential entrants is eliminated through merger. Remaining potential entrants are disadvantaged if the required aggregation is no longer achievable at its premerger cost. However, if costs associated with facility construction of required scale are no higher for nonmerging entrants than they were before merger, entry conditions are unchanged.



participants to profitably sustain a higher price. Failure to consider this possibility could lead an analyst to overlook a merger's anticompetitive effect.

This theory of market power requires the analyst to demonstrate that the merger eliminates a *uniquely positioned* potential entrant. Where multiple potential entrants are similarly-situated and conditions of entry are easy, the claim that elimination of one potential entrant through merger will harm competition lacks force. However, where entry is difficult, and only a few firms are well-positioned to enter, the analyst may be able to show that the merger leads to an anticompetitive effect.<sup>21</sup>

Even if a merger raises entry barriers, this fact, per se, is insufficient to infer that the merger creates an anticompetitive effect. The analyst must demonstrate that market performance is likely to deteriorate.<sup>22</sup>

Effective use of this theory requires a close analysis of entry conditions into a relevant market. The analyst must view each merging firm as a prospective entrant into one (or more) relevant markets of its merger partner. As in the previous theory, steps one, two and three provide valuable information about existing market concentration, however steps one and two should be expanded to examine issues pertaining to each merging firm as a potential competitor.

The essential entry question in step four of the previous theory is, "Does the threat of entry preserve competitive pricing?" In this theory, step four poses an additional question, "What will be the effect on market behavior and price if the merging firm is eliminated as a

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<sup>21</sup> For example, the California Public Utilities Commission, rejecting the proposed merger between Southern California Edison and San Diego Gas & Electric (SDG&E) found, "SDG&E represents a significant counterweight to Edison's dominance of [transmission] planning groups, and that the groups themselves play a crucial role in rating the capacity of existing and new transmission lines. Such ratings are fundamental to assessing available transmission capacity, and are thus a key underpinning of statewide transmission access policies... *The record shows [the elimination of SDG&E through merger] may have adverse impacts for the future competitive development of the transmission markets under review* [emphasis added]." California Public Utilities Commission, Decision 91-05-028, (May 8, 1991), 51.

<sup>22</sup> "For example, a market with 100 firms of equal size would perform competitively despite a significant increase in entry barriers." 1984 Guidelines, 46 fn. 34.

potential entrant?"<sup>23</sup> Using this theory in step five and six, the analyst identifies any unique competitive attribute of a merger partner as potential entrant.

### **Supra-Competitive Price and Horizontal Consolidation (Model B1):**

This model emphasizes the premerger existence of market power in the form of supra-competitive price, and applies to situations where both merging partners currently participate in the relevant market. A merger increases market power when it provides the means to raise price above the supra-competitive level prevailing, thereby allowing firms to extract the remaining and previously unavailable profits of market power.<sup>24</sup>

The analyst needs to exercise care in defining relevant markets when evidence indicates existing market power in the form of a supra-competitive prevailing price. If such evidence is found, the analyst must reexamine the identification of relevant markets in steps one and two and the market concentration results of step three.

When applying the theory of this model, an analyst's failure to recognize the existence of supra-competitive pricing can be a serious error. Including within a relevant market poor and imperfect product or geographic substitutes, i.e., *substitutes whose substantially inferior value to buyers would be apparent if the price charged by the merging firm were the competitive price*, may undermine virtually all subsequent analysis. This error can easily lead the analyst to fail to object to an anticompetitive merger.<sup>25</sup>

In developing the market power story, the analyst should be aware of the important difference between this theory and the first theory in which prevailing price is set competitively. Under the first theory, for the merger to be anticompetitive, the merger must

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<sup>23</sup> For an analysis of ease of entry in the context of a hypothetical merger see Steven C. Salop, "Measuring Ease of Entry," *The Antitrust Bulletin*, (Summer 1986), 551-570.

<sup>24</sup> As in each of the earlier theories, if merger produces an anticompetitive effect, the price initially prevailing before the merger must be below the supra-competitive price a profit-maximizing monopolist could sustain.

<sup>25</sup> The error of concern is enshrined in legal discourse as the *Cellophane* fallacy. The issue in *U.S. v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377 (1956), was whether the alleged monopolist (Dupont) was in violation of Section 2 of the Sherman Act. The Supreme Court found that Dupont did not have a monopoly over cellophane owing to the many substitutes customers could and did use. Many economists believe that the Court majority erred, using a monopoly-price to define a relevant market too broadly. See, e.g., Gregory J. Werden, "The History of Antitrust Market Definition" *Economic Analysis Group Discussion Paper*, (U.S. Dept of Justice, Antitrust Division, July 2, 1992), 10-13 and 61-62.

transform a competitively functioning market into a noncompetitive market. In this theory, the prevailing price is supra-competitive (based on the analyst's factual inference that market power exists). The analyst should be aware that the merger may appear to have only a minor effect on market concentration (e.g., as indicated by numerical indicia) yet lead to a serious deterioration in market performance.

**Supra-Competitive Price and Potential Horizontal Consolidation (Model B2):** In this model as in model B1, prevailing price is supra-competitive, yet below the price an unrestrained monopolist could achieve. In this model as in model A2, the threat of entry by a merger partner constrains the exercise of market power. Unlike model A2, however, the threat of entry is not sufficiently potent to keep the prevailing price at or near the competitive level.

The analyst has the option of developing a market power story along the lines of the theory of model A2. Since market power already exists, however, the analyst probably will have an easier task than in model A2, in explaining how the merger will cause market performance to deteriorate.

The combination of facts in this model indicates another approach the analyst can use to establish a deterioration in market performance. Suppose that the analyst could substantiate three facts concerning a relevant market: (1) Moderate or high concentration (step three), (2) High entry barriers (step four) and (3) Anticompetitive behavior (step five). If these facts are supported, together they suggest the existence and persistence of a poorly performing market. If this fact pattern is found, a merger which raises existing entry barriers higher must further entrench anticompetitive behavior.

In developing the market power story the analyst should be aware of a unique aspect of this theory. In the theory of model A2, prevailing price is competitive because the threat of entry holds price at the competitive level. In this theory, although the prevailing price is supra-competitive, the analyst must also examine the effect of entry on market performance. If actual entry by the merger partner would lower price toward the competitive level, then entry would improve market performance. In this case, the loss of opportunity to improve market performance is anticompetitive.<sup>26</sup> The analyst must add this "lost opportunity" effect (when it exists) to the anticompetitive effect produced if the merger enhances the ability to exploit market power by raising price closer to the monopoly price.

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<sup>26</sup> Although the threat of entry in this theory fails to secure a prevailing price which is competitive, this assumption does not imply that entry actually undertaken by the merger partner would leave the prevailing price (and the existing exercise of market power) unaffected. See, 1984 Guidelines, 38.

**Conclusion:** This article describes a simple method for merger analysis for markets in competitive transition. The article explains how the analyst's characterization of prevailing price as *competitive* or *supra-competitive* and asset consolidation as *horizontal*, *potential horizontal* or *non-horizontal* determines the applicable economic theory. These distinctions are of special significance for mergers within markets in competitive transition.

Although the method is simple, resolution of the issues involved in reaching a conclusion is not simple. An analyst applying this method must be mindful of the interaction between all elements and adapt the analysis to the specifics of each situation.

**DSM EXTERNALITIES AND IRP:  
DEFUNCT IDEALS ARE DEFINING THE RULES FOR COMPETITION  
IN REGULATED, SEMI-REGULATED AND TRANSITIONAL MARKETS**

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## **INTRODUCTION**

Over the past decade, the practice of integrated resource planning has been rapidly evolving. Initially, integrated resource planning (IRP) focused upon including demand-side management options. But, increasingly, IRP has been expanded to embrace an ever broadening range of resource options including non-utility generation, power purchase contracts and transmission distribution system upgrades.

Another significant distinction of IRP is the consideration of multiple objectives. Thus, we have seen utility resource planning shift from a focus on minimizing rates to including considerations such as minimizing the cost of energy services, reducing investment risks, promoting local economic development and, increasingly, enhancing environmental quality.

This paper examines some of the trends and the implications of the attempts to regulate enhanced environmental quality through the inclusion of externalities in the IRP process. We first review the recent developments in integrated resource planning and how this operates within the context of the traditional regulatory pact between regulators and the utilities. Next, we examine the forces of deregulation to replace traditional regulation with market forces. This is followed by consideration of why it is necessary to intervene in the market through IRP to specifically consider demand-side management options. Next, we look at the same kinds of questions for environmental externalities. Given that one might want to incorporate environmental externalities, we will try to identify the alternative policy approaches that are available and evaluate them in terms of efficiency, equity, administrative simplicity, and certainty of outcome. We conclude that planning regulations to alter generation mix decisions for regulated utilities will probably increase environmental emissions and suggest that the best policy alternative for improving environmental quality resulting from power generation are either taxes, standards, or a combination. Then we examine in more detail the reasons why intervening in the planning process fail so badly in a policy context.

Finally, we recognize that for a variety of reasons, state utility regulatory commissions may desire to promote enhanced environmental quality. We outline a proposed approach that could be implemented and still not disadvantage the regulated utilities vis a vis their non-regulated competitors.

## RECENT DEVELOPMENTS IN IRP

Over the past few years, IRP has evolved to focus more upon consideration of a total resource perspective and to include environmental compliance considerations. The total resource perspective basically entails evaluating utility resource plans considering cost and benefits to both the utility and all of its ratepayers. This is generally a broader perspective than the revenue requirements which have traditionally been the main criteria for evaluating resource investment decisions.

In addition, particularly following the implementation of the Clean Air Act, environmental compliance has been increasingly incorporated into the IRP process. This is in contrast to the traditional approach where resource planning was completed. Then plans for complying with the environmental regulations were developed given the planned resources. Now, utilities are increasingly examining the trade-offs of alternative environmental compliance strategies within the IRP. Thus, environmental compliance strategy may entail different types of generating plants, different mix of generation demand-side resources, altering fuel mixes, as well as investments in environmental control technology.

At the same time, there are a number of experiments underway in the area of IRP, including shareholder incentives, incorporation of externalities, and broadening the scope of resource options that are considered to include fuel switching. All of these areas bring up a host of complex regulatory and public policy considerations into IRP.

The implications of these developments is that under traditional regulatory framework, the utility should embrace a wide range of efficiency and environmental actions. If the utility does so, then it can expect rewards to the shareholders for achieving these social benefits. This is all within the context of maintaining the traditional regulatory contract.

But, at the same time, we see the forces of deregulation besotting the industry. In particular, we see encouragement of independent power producers, significant activities to require transmission access -- at least at the wholesale levels, and even talk about providing retail transmission. In many jurisdictions, bidding for both generation and demand-side resources are being required. We also see the emergence of energy service companies competing with utilities. Many large customers are developing cogeneration to supply their own energy requirements or to bypass the electric utility. Finally, there are also experiments with various types of the rate setting mechanisms (e.g., price caps) to try to more closely produce market results.

The forces of deregulation are gaining momentum for several reasons. First and foremost is a widespread recognition that market forces encourages efficiency. There has been a growing dissatisfaction with the results that rate of return regulation has achieved in that it has led to what many categorize as the utility acting as a cost plus industry. It was thought that deregulation will improve the economics of power supply, as well as reducing the cost of regulation. In addition, we have learned that market forces can be more powerful than regulatory mandates in achieving desired ends. This is perhaps best embodied in the Clean Air Act which sets up a system of trading emission allowances to utilize the market forces to most effectively reduce SO<sub>2</sub> emissions.

## NEED FOR INTERVENTION IN THE PLANNING PROCESS

The formal integrated resource planning with reviews by the regulatory agencies has been developed largely in response to a perceived need that utilities need to formally and systematically evaluate their resource planning decisions and that these rules for how those resource planning decisions are made need to be explicitly clarified so that other activities such as demand-side management and environmental quality are fairly evaluated.

What has prompted this? Why is intervention in the planning process necessary in order to encourage demand-side management? Or, for that matter, enhanced environmental quality? Let's look initially at the rationale for encouraging demand-side management. We think that there are basically three major reasons for encouraging demand-side management. They are:

- **Differences in discount rates between the customer and the utility** — Purchasers of electric services usually make investment decisions with discount rates on the order of 20-30% (and the evidence indicates for many residential purchases discount rates may be as much as 100%), while utilities are making long-term generation expansion decisions using discount rates on the order of 10%.
- **Prices are not equal to long-run marginal costs** — This has long been recognized as an issue when costs of new power supply exceeds the average cost of generation. Under this scenario, regulated prices will lead to more consumption than is economically efficient (this is true even without the inclusion of environmental externalities).
- **A number of market barriers to investment in energy efficiency** — The three major barriers that have been identified that appear to lead to firms underinvest in energy efficiency include:
  - Capital constraints
  - Lack of information
  - Transactions costs.

What are the rationale for including consideration of environmental externalities in the resource planning process? The arguments generally include the following:

- Prices don't reflect environmental costs
- Current environmental quality standards are viewed as insufficient
- Even if environmental standards are sufficient some feel it is desirable to include the effects of residual amounts of pollution (that is, amounts that are in compliance with standards) in the resource prioritization process

- To tilt the scales towards DSM and renewable resource option — in other words, in many cases, environmental externalities are being used as a way to increase the amount of demand-side management resources or renewable resources that is included in resource plans.

## **POLICY APPROACHES**

Given the desire to improve environmental quality resulting from generation of electricity, there are four basic policy alternatives that can be considered including:

- Standards
- Taxes
- Emission taxes with trading
- Planning criteria and reviews.

One needs to consider how these policies may perform according to different criteria. We suggest that the appropriate criteria for evaluating the efficacy of a given policy alternative include:

- Efficiency
- Equity
- Administrative simplicity
- Certainty of outcome.

Figure 1 compares each of the four generic policy options relative to the four evaluation criteria. Standards perform well in terms of simplicity and certainty, but they are relatively weaker in terms of equity and efficiency considerations. Emission taxes are very good from an efficiency point of view, however there are issues in terms of equity, simplicity, and certainty of outcomes. Emissions trading can provide an efficient outcome, promote equity, and we can be quite certain of the overall levels of emissions. The drawback of trading, however, is its complexity. The planning criteria and reviews as in the incorporation of environmental externalities considerations in IRP, perform poorly relative to equity, simplicity, and certainly considerations. It is uncertain what the outcome is in terms of efficiency.

The above evaluation leads to the conclusion that the best alternative for reducing the environmental impacts associated with power generation is emissions taxes with trading first. Second would be use of either taxes or trading by themselves. Third would be standards. Lastly would be planning criteria and reviews.



Figure 1

Comparison of The Relative Performance of  
Alternative Policy Approaches For Improving  
Environmental Quality

	Standards	Taxes	Trading	Planning
Efficiency	●	●	●	?
Equity	●	●	●	○
Simplicity	●	●	○	○
Certainty	●	●	●	○



= small or minimal



= medium



= high or extreme

Why does planning fail so badly? It is important to examine and understand the limitations of use of planning reviews and criteria for achieving environmental quality objectives because this seems to be the approach that is being favored in the current regulatory environment. Some of the issues in terms of utilizing the planning review and criteria approach include:

- Feasibility
- Uncertainty
- Poor linkages between action and outcome
- Ability to circumvent
- Second best.

One key issue is the feasibility of quantifying in a systematic and consistent manner environmental externalities costs. Issues that we need to consider in order to decide that this approach is even feasible include the following:

- **Cross media impacts** — Some strategies for reducing air emissions may result in land or water impacts. The value associated with reductions of SO<sub>2</sub> emissions, for example, may be offset by increased landfill costs. To truly and fully evaluate the environmental implications of alternatives, one would have to follow the full cycle of alternative generation and control strategies and quantify the externalities at each step of each cycle.
- **Differences in preference functions** — It has been demonstrated and argued in many venues that it is impossible to develop a social preference function that aggregates across all people within a given population. What is the preference for example, between local jobs and remote damages, or low risk/high impact accidents vs. high risk/low impact accidents? These are some of the difficult trade-offs that would have to be made in a true environmental accounting framework. The fact that different people in the population will have different preferences among these trade-offs place the regulators in the role of the arbitrator. In general, where there are significant differences in preference functions among subgroups, the appropriate decision-making process is either a legislative or elective process.
- **Developing an exhaustive list of all environmental impacts** — If we look at the environmental externality regulations that are in place now, by and large they focus on air emissions and have not focused on many other environmental externalities that may be associated with power generation. In addition, there are a number of emissions that may not be included in the current numbers. Developing an exhaustive list and quantifying each

one of these can be overwhelming. For example, let's consider the trade offs of generating electricity vs. replacing an incandescent bulb with a compact fluorescent bulb. To quantify fully the impacts of that electricity consumption, one would need to look at the mix of generation that would supply that compact fluorescent bulb, which in a typical utility, would probably include some nuclear, coal, and natural gas. Different power plants would all be located different distances from human populations, they would be associated with different exposures and health effects on the human population, as well as deposition and damage to the environment. With the compact fluorescent bulb, there is some increased environmental damage associated with the production of the bulb relative to an incandescent. There are also some trace metals that are encapsulated in the compact fluorescent bulb. Because of the toxicity of the trace metals, and since the compact fluorescent bulbs are introduced into the household so that the exposure may be quite higher, the environmental damage associated with these trace metals could be significant. Thus, the problem of identifying all of the differing emissions associated with any action, valuing those emissions, considering the possible exposures and relationships between damage and exposure can be quite daunting. In fact, it is so large that we have not seen such a comprehensive analysis done yet for any single environmental compliance strategy.

- **Methodological issues** — To date, most of the focus of the externality debate has been on the appropriateness of alternative techniques for valuing environmental impacts resulting from emissions. There is still considerable debate about the appropriateness of alternative approaches and whether the data are available to support the estimation of these values. It is also interesting to note that while a lot of attention has been given to quantifying the costs of environmental emissions, the uncertainty and the amount of knowledge that is still required to establish relationships between emissions and exposures and damage is extremely high. There are still significant debates, for example, about the population exposures and health effects from nitrogen oxides in remotely sited turbines vs. nitrogen oxides from gas combustion in peoples homes due to the differences in the exposures.
- **External benefits** — To date, the environmental externality debate has focused on the cost of energy production. But aren't there also benefits? Don't some of these benefits exceed the cost of electricity? In environmental benefit cost analysis, using the cost of electricity as a proxy for the benefit is inappropriate. For example, let's consider the pulp and paper industry. Over the past decade, the pulp and paper industry has dramatically reduced both water and air emissions, while kilowatt hours per ton of paper has increased. It has been the increasing electrification of pulp and paper making processes, as well as the use of electricity to

power environmental control technologies that has permitted this dramatic improvement in environmental emissions from pulp and paper industries. How should these improvements to environmental quality be incorporated in the overall considerations of externalities?

In summary, there are a number of very serious questions about the feasibility of developing approaches and methods that will fully, completely and consistently allow one to consider the environmental trade-offs of alternative electricity supply and demand-side management resources.

There are other issues concerning the use of planning reviews and criteria as identified above. Let's consider the uncertainty of the outcome. When plans are submitted and reviewed, there tends to be one or two salient issues that dominate the review of any given plan. Other issues tend to get second seat. In a time of shortage, for example, the issue might be how quickly can the alternative resources come on line. In time of rapid rate increases, the issues might be what are the resource options that provide the smallest rate impacts. Depending upon the context within which the plan is evaluated, environmental issues may or may not get a lot of attention. This may be a benefit in that it provides a certain amount of flexibility. It also entails certain types of cost. Consider the case of regulated utilities. If environmental issues are of paramount importance when utility A submits its plan, it will select environmentally benign resource portfolio. A year later, utility B submits a resource plan because it is facing impending shortages of power and the regulatory focus is up on building resource to meet that supply deficit as quickly as possible. Utility B's resource plan does not include the same degree of environmental regulation in this case. Is utility B now at a competitive advantage relative to utility A because it has not incurred the same costs for environmental quality as utility A?

Another problem is the poor linkage between the plans and the outcomes. One issue is that within any given plan we usually are looking at only one or two marginal resources. The decisions to develop a given resource depends on the trade offs relative to the alternative resources. Yet, to improve environmental quality it may be better to look at the overall system, including the imbedded generation plants. Also with IRP there are multiple objectives including environmental quality. Again, perhaps this is good. We need some flexibility in the system. But at the same time, it can lead to desperate outcomes. Given that companies may weight the objectives differently, one may or may not achieve the environmental quality desired.

There is also an ability to circumvent plans. For example, resource plans are only plans that may not be implemented. One can always make an argument that changing external conditions after the plan was developed made it necessary to adjust the plan. The most important consideration, however, is the accidental circumvention. Government policy is replete with examples of regulations, programs, and policies developed to achieve one goal and finding out that the unintended consequences were worse than the policy or program was designed to solve.

We think the most fundamental problem with environmental externality regulation as it is currently being practiced by many regulatory agencies is in the potential for creating adverse outcomes. The utility industry, particularly the power generation side, is being increasing

deregulated. Regulations imposed by state regulatory commissions on regulated utilities to incorporate environmental externalities into their decision making will increase their cost of power, vis a vis, their non-regulated competitors. The net result will be an increase of power costs from regulated industries, and a reduction of purchases from those regulated utilities. This means that there could actually be an increase in environmental emissions from the increased sales from non-regulated competitors. We have already seen this in California where utilities were asked to include environmental externalities in their resource planning decisions and the California Public Utilities Commission learned that the rules had to be changed to develop a method of incorporating environmental externalities for power purchases from out-of-state entities. This is one path that could be taken. Keep on making the rules to incorporate more considerations in all decisions. But this regulatory complexity entails costs that may ultimately defeat the overall objective or other important objectives such as reducing the cost of regulation and promoting economic efficiency in competition in marketplaces.

### **BUT PLANNING REGULATION WILL CONTINUE**

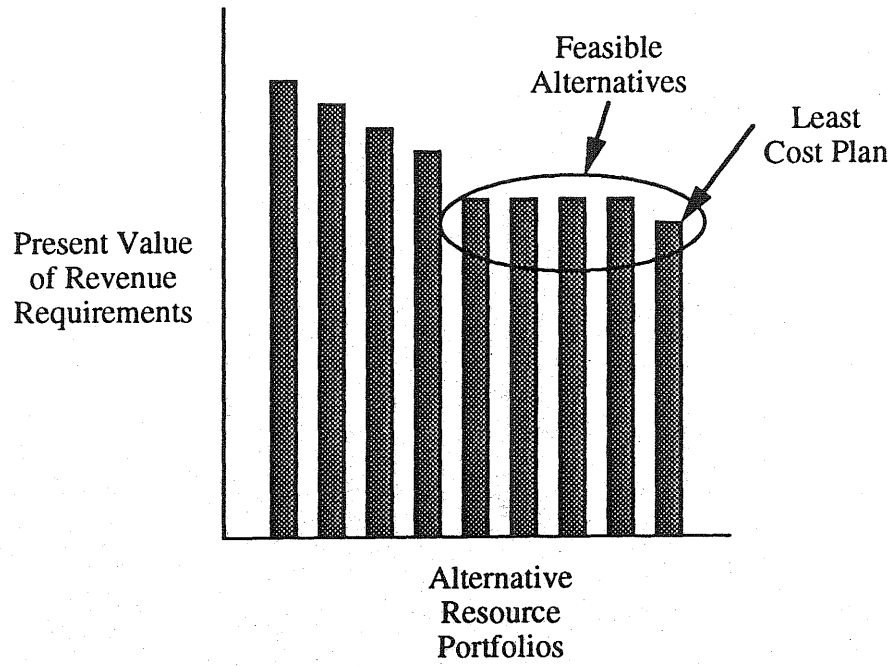
While we have some serious concerns about the appropriateness and efficacy of incorporating environmental externalities into the resource planning process, we recognize that it will continue in some forms for several reasons. First, planning regulations is something that can be done on the state level by state regulatory commissions. Many states perceive that there is a need for tighter environmental regulations than current national standards. By incorporating environmental externalities in the planning process the states and regulators can take some actions to improve environmental quality. Second, by and large traditional rate of return with protected franchises still persists. While incorporation of environmental externalities is replete with methodological difficult issues related to second best (that is, why are we investing more money into a relatively clean sector when the same amount of money would result in much greater improvements in environmental quality if spent in, for example, transportation), the serious competitive disadvantages and potential for mischief by reducing usage of environmentally clean generation is not so serious to the extent that this traditional regulation persists. The forces of deregulation, however, have considerable momentum and is certainly chipping away at the idea of the vertically integrated utility. Transmission access, like it or not, is here. We have started to see some chipping away at the ideas of protection of the traditional utility franchise.

Is there something that can be done? Is there an approach that can encourage environmental improvements in environmental quality without either federal standards and emissions legislation or creating the potential dislocations associated with the current approaches of incorporating environmental externalities? We think the answer is yes.

In developing integrated resource plans, we have found that there are a number of alternative resource portfolios with very similar present value of revenue requirements. This is illustrated in Figure 2. The resource portfolios are ranked in terms of present value of revenue requirements. What traditionally happens is that the least cost plan is not that much cheaper than the second to the least cost plan, or, for that matter, any of the top least cost plans. A utility may select a resource portfolio out of, for example, the lowest ten least cost portfolios with lower environmental externalities. This portfolio would entail higher costs than the least cost plan

Figure 2

Typical Ranking of Resource Portfolios  
In Integrated Resource Planning



excluding environmental externalities. An amount can be interpreted as an implicit tax that the utility is paying to enhance environmental quality. An equivalent tax can then be levied upon wheeled power or deducted from avoided costs payments for cogenerators. Thus, the approach would entail three major items. First, there would be no pricing of externalities. Second, the environmental portfolio would be compared to the strictly least-cost portfolio. The difference between the present value of revenue requirements between the environmental portfolio and the least-cost portfolio would be the costs associated with that improvement in environmental quality. Third, the costs associated with improvements in environmental quality, would be translated into a tax that would be either treated as a surcharge to wheeled power if the independent power producers emit more per kWh than the utility or deducted from the avoided cost payments to cogenerators if the cogenerators again emitted more per kWh than the utility.

This approach is not simple, but it is efficient, it does promote equity and the certainty of outcome is high. It avoids the potentially significant dislocations that could arise from requiring only the regulated portions (which happens to be an increasingly small proportion) of the industry to incorporate environmental externalities into their resource planning decisions.





APPLICATION OF ANTITRUST TO A DEREGULATED ELECTRIC UTILITY:  
THE FUTURE OF POWER POOLING

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INTRODUCTION

The 1970's brought the first serious discussion of the need for a major restructuring of the electric utility industry.<sup>2</sup> By 1980 it seemed that all concerned were dissatisfied with the structure of an industry that had produced many decades of unparalleled progress. Investors, consumers, the government, the industry management, all came to one conclusion: The 1970's brought fundamental and permanent change in the industry and we must now rethink the entire public policy approach toward this most crucial industry. Most observers now agree on two basic propositions: (1) new technologies have made the protected monopoly model obsolete in this industry and competition can be called upon in some areas to serve the regulatory function, and (2) government regulation is not providing and cannot provide an environment which will bring forth an efficient industry response to these new developments.

While most agree that change is inevitable and desirable in this industry, there is wide disagreement on the optimum structure that should prevail. Two goals should be pursued: (1) reliability and (2) efficiency. In the 1960's the goal of reliability was paramount and efficiency considerations were secondary. This was a natural response to the blackouts and brownouts experienced during this period and the declining real cost of energy at the time. The method of achieving reliability was to interconnect and coordinate the nation's electric systems. In the late 1970's the goal of efficiency took precedence.<sup>3</sup> This was a natural response to the sharply rising costs of electric power in this period and the national goal of conservation. This goal continues today, and, it is claimed, the method of achieving this goal is the reliance on competitive markets to the greatest extent possible. There is an assumption that a reliable system is subsumed within an efficient system. This assumption may be a crucial mistake.

In the earlier period the goal of reliability was to be achieved by the coordination and interconnection among the nation's diverse electric utilities. The industry members were encouraged and cajoled to pool their resources and interconnect their systems to provide emergency assistance and share reserves. But coordination and competition are essentially mutually exclusive patterns of behavior, and

[t]he greatest challenge to increasing competition in generation

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<sup>1</sup>I want to express my appreciation to the Ohio Edison Company, Akron, Ohio for the use of their corporate library, and especially to Corporate Librarian Sharon Malumphy for her kind and generous assistance during this project.

<sup>2</sup>See John Miller, "A Needed Reform of the Organization and Regulation of the Interstate Electric Power Industry," 38 Fordham Law Review, 635 (1970); and Leonard Weiss, "Antitrust in the Electric Power Industry," in Almarin Phillips, ed., Promoting Competition in Regulated Markets, Brookings (Washington, 1975), pp. 135-173.

<sup>3</sup>"(T)he primary objective of public policy toward the electric power sector is economic efficiency." U.S. Department of Energy, Deregulation of Electric Power: A Framework for Analysis, DOE/NBB-0021 (September 1982), p. 2.

and expanding transmission access is maintaining the high degree of coordinated planning and operation among bulk power system components. If coordination is not addressed with appropriate care, the system may experience increasing costs and decreasing reliability.<sup>4</sup>

Two factors will influence the degree of coordination in a deregulated environment: (1) the willingness of firms, especially large firms, to cooperate with others in the sharing of information and planning of facilities when they are, at the same time, competitors;<sup>5</sup> and 2) the antitrust attitude toward these cooperative efforts. This paper will address the latter issue.

#### GOVERNMENT EFFORTS TO ENCOURAGE POWER POOLING

From a very early period in the electric utility industry the firms discovered the benefits of coordinated activities.<sup>6</sup> Initially the technologies of generation and transmission were too limited to permit much sharing of power; but as these improved, the firms found they could rely on each other for the provision of emergency power and the sharing of reserve capacity. The early agreements were simple and bilateral. The firm's task was to serve its native load with its own generation and its own transmission facilities, and reliance on others was the exception. But with rapid growth, ever-increasing size of generating units, a more complex technology, and a commitment to supply all who want upon demand, the firms found it very risky to stand alone. By forming more structured coordinating agreements with neighboring utilities, the firms could realize many of the economies of large-scale operations and reduce their risk, yet maintain most of their individual autonomy. Several groups went further and formed "tight" power pools, discussed later, where all pool members gave up considerable independence and operated, in many regards, as one system. Whether they have formed a loose or tight pooling agreement, the electric utility industry in this country became a highly interconnected federation with practically every utility in the country participating.

Interconnections and pooling were heavily supported and encouraged by the government.<sup>7</sup> As the Federal Power Commission (FPC) surveyed the industry in 1964, it found the industry "on the threshold of a new era of low-cost power,"<sup>8</sup> but concluded that the future would require a major effort to integrate the various utility systems into a national unity.

The Survey suggests how all of our electric power systems can move from isolated or segmented operations, and from existing pools of limited scope, to participation in fully coordinated power networks covering broad areas of the country. In time, when justified economically, all the electric systems in the entire nation may

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<sup>4</sup>U.S. Congress, Office of Technology Assessment, Electric Power Wheeling and Dealing, OTA-E-409, May 1989, p. 15.

<sup>5</sup>"It is very difficult to encourage companies to cooperate in such delicate matters as setting joint rates, the sharing of business, and the planning of investment while insisting that they compete vigorously in other respects..." Alfred Kahn, The Economics of Regulation, Vol II, Wiley (New York, 1971), p. 69.

<sup>6</sup>See Federal Power Commission, 1970 National Power Survey, Washington (Government Printing Office), Part I, Chapter 17; Part II, Chapters 1/VIII, 2/VII, 3/IV, and Part III, 1/3, 2/4 and Appendix 5, Washington, GPO, 1971. The Survey dates some pooling efforts back to the 1920's.

<sup>7</sup>Federal Power Commission, National Power Survey, Washington, GPO, 1964, Part I, p. 29.

<sup>8</sup>Ibid, p. 1.

be joined in a single interconnected network.

This Survey thus is encouraging the industry to initiate broader regional and interregional planning in which all ownership segments can plan and build facilities to meet their combined needs to the mutual advantage of themselves and their consumers.<sup>9</sup>

While substantial efforts had already been made by the industry in the creation of voluntary pools, the FPC concluded that what was needed was an "acceleration of the trend toward increasingly comprehensive coordination over expanding geographic areas."<sup>10</sup>

The push for coordinated operations of the nation's electric utilities became urgent after the northeast power blackout in 1965. As a result of 30 million people losing power for as long as 14 hours,<sup>11</sup> the electric industry would never be the same again. The power failure was only the first of a series of shocks to the industry which over the next two decades would redefine how the industry will function in the economy.<sup>12</sup> As it probed the underlying structural problems facing the electric industry in the wake of the blackout, the FPC concluded that the primary deficiency lay in the failure of the utilities to engage in sufficient voluntary coordination. The FPC recommended that

(1) strong regional organizations [need to] be established throughout the nation, for coordinating the planning, construction, operation and maintenance of individual bulk power supply systems, and that representation of systems be by groups, where feasible, to facilitate progressive improvements in coordination, [and that]

(2) [a] council on power coordination [should] be established . . . to exchange and disseminate information on regional coordinating practices to all of the regional organizations, . . .<sup>13</sup>

In the next power survey in 1970 the FPC could report that "[n]early every major electric utility system in the United States is connected with neighboring systems to form large integrated networks."<sup>14</sup> But while most systems had interconnected in some manner, centralized pool dispatch wherein "a group of utilities jointly plan, design, and construct their generation and

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<sup>9</sup>Ibid.

<sup>10</sup>Ibid, p. 169.

<sup>11</sup>Testimony of Joseph Swidler, Northeast Power Failure-November 9,10, 1965, Hearings Before the Special Subcommittee to Investigate Power Failures of the House Committee on Interstate and Foreign Commerce, 89th Cong., 1st and 2nd Sess., Dec. 15, 1965, p. 4.

<sup>12</sup>One writer has called 1965 the year in which the "good old days" came to an end and the "decline of the industry" started. Leonard Hyman, America's Electric Utilities: Past, Present, and Future, Public Utilities Reports, Inc., 3rd ed., (Arlington, Va., 1988).

<sup>13</sup>Federal Power Commission, Prevention of Power Failures, Volume 1, Washington, GPO, July 1967, p. 4.

<sup>14</sup>FPC, National Power Survey, 1970, Part I, Chapter 17, p. 1.

transmission facilities as a single system"<sup>15</sup> had received only "limited acceptance."<sup>16</sup>

Despite what appear to be dedicated efforts by the FPC to achieve a coordinated national power grid, one study concluded that the FPC had not gone far enough in using its available authority to forge a national power grid and that coordination is "seriously inadequate" and just as troublesome "in 1972 as it seemed to the FPC in 1964."<sup>17</sup>

The Federal Power Act directs the Federal Energy Regulatory Commission (FERC)<sup>18</sup> to "study the opportunities for . . . increased reliability, through pooling arrangements,"<sup>19</sup> and it also provides that the Commission "is empowered and directed to divide the country into regional districts for the voluntary interconnection and coordination of facilities . . . It shall be the duty of the Commission to promote and encourage such interconnection and coordination within each such district and between such districts."<sup>20</sup>

A study of pooling in 1981 by the FERC concluded, similarly to the FPC study in 1970, that while a high degree of interconnection existed in this country, more substantial and closer coordination was required in order to realize all of the potential benefits.<sup>21</sup> The study shows that 44% of non-affiliated generating capacity in the country is being produced by firms within "formal pools." An additional 15% is being produced by affiliated holding companies. Therefore the percentage of the nation's generating capacity controlled by tight pools is about 59% in 1980. In 1970 it was 62%.<sup>22</sup>

The recent report from the Department of Energy on our national energy strategy calls for several regulatory reforms all aimed at injecting greater competition into the wholesale power market while at the same time supporting FERC efforts which encourage "regional cooperation and coordination of wholesale suppliers' generation and transmission planning, siting, and construction."<sup>23</sup>

In sum there has been a sustained effort by the government for the past 60 years to bring a very diverse collection of industry participants together into a cohesive unit to realize all potential savings of large scale operation

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<sup>15</sup>Ibid.

<sup>16</sup>Ibid, p. 30.

<sup>17</sup>Stephen Breyer and Paul MacAvoy, Energy Regulation by the Federal Power Commission, Brookings Institution, (Washington, 1974), p. 108.

<sup>18</sup>The FERC superseded the FPC in 1977 under the Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565 (1977). The Federal Power Act is at 16 U.S.C. Sect. 791-828a.

<sup>19</sup>16 U.S.C. Sect. 824a-1(b).

<sup>20</sup>16 U.S.C. Sect. 824a(a).

<sup>21</sup>Federal Energy Regulatory Commission, Power Pooling in the United States, Washington, GPO (1981). The FERC study points out that there was no increase in the number of power pools in the 1970's, and actually a dissolution of some pools. Ibid, p. 11.

<sup>22</sup>Ibid, p. 9.

<sup>23</sup>U.S. Department of Energy, National Energy Strategy, Washington, GPO (1991) p. 31, 37.

and achieve greater reliability of system operations. Deciding whether the move toward greater competition in the wholesale power market will threaten the existence of these pools, and whether these pools have a role to play in a deregulated environment, and therefore should be protected, is the purpose of this paper.<sup>24</sup>

#### POWER POOLS<sup>25</sup>

Pooling is an inexact term when applied to the electric industry,<sup>26</sup> but generally the term is applied to four types of agreements among industry members. First, the utilities may simply have an informal understanding to assist each other in an unanticipated event. There are no firm commitments made by any of the parties to assist in any particular manner but just a general willingness to assist if the need should arise. These agreements are primarily in the area of emergency assistance.

Second, the utilities may create a contractual obligation to provide certain types of specific assistance. Here one party may contract to purchase a certain amount of energy for a certain time period, or purchase capacity to forestall the construction of additional generating units. Many such contracts exist between utility generating companies and municipally owned systems. The generating company contracts to supply the community its full requirements with contractual guarantees of continuous and reliable service. The seller of the power has the duty to carry sufficient reserve capacity, or contracts for backup power in the event of an emergency.

Third, the utilities may form "loose pools." These pools, sometimes called "operating pools,"<sup>27</sup> serve limited and specified functions. An example of a loose pool is the Florida Coordinating Group (FCG). The pool is informal and highly voluntary, but one should not conclude that it is unstructured. There exists an Operating Committee, a Systems Planning Committee, an Executive Committee, a General Staff, and a Technical Advisory Group.<sup>28</sup> These various committees have no authority to commit any utility to a particular course of action but can only recommend to the utilities' management. In addition to coordinating reserves, emergency procedures, and system expansion planning,

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<sup>24</sup>Electric utilities in the U.S. and Canada are also organized into nine voluntary reliability councils (North American Electric Reliability Council, NERC) for the purpose of coordinating planning for future expansion, maintaining reserves, insuring adequate transmission facilities, and coordination between power pools.

<sup>25</sup>More complete descriptions of power pools are found in the U.S. Department of Energy, Power Pooling: Issues and Approaches, DOE/ERA/6385-1, Washington (January, 1980) and the Federal Energy Regulatory Commission, Power Pooling in the United States.

<sup>26</sup>"(N)o single definition of coordination has been established by the electric utility industry. Coordination is joint planning and operation of bulk power facilities by two or more electric systems for improved reliability and increased efficiency which would not be attainable if each system acted independently. . . . The highest degree of coordinated planning results when a group of utilities jointly plan, design, and construct their generation and transmission facilities as a single system." Federal Power Commission, National Power Survey, 1970, Part I, Chapter 17, p. 1.

<sup>27</sup>James Meeks, "Concentration in the Electric Power Industry: The Impact of Antitrust Policy," 72 Columbia Law Review, 64, 101, (1972).

<sup>28</sup>U.S. Department of Energy, "Florida Electric Power Coordinating Group: An Evolving Power Pool," DOE/ERA/6385, October 1979.

the FCG has created a voluntary economy exchange program. Under this arrangement an automated energy broker receives buy and sell quotes from participating utilities each hour. The sell bids should reflect each utility's incremental cost of producing additional energy, and the buy bids should reflect the utility's decremental cost of forgoing own-generation and purchasing from the pool. The broker then matches the highest bid with the lowest offer, then the next highest bid with the next lowest offer, etc. Provided incremental costs are below decremental costs, pool members can minimize cost through pool exchanges. The arrangement is informal and voluntary. The broker merely suggests trades, and each utility reserves the right to reject any proposed match-up.<sup>29</sup> The price upon which the energy is traded is based on a split-the-savings basis; that is, the actual exchange price is set halfway between the seller's incremental cost and the buyer's decremental cost. Sales can only be consummated between utilities with pre-existing bilateral contracts and transmission linkages between them, therefore all possible savings are not realized. Almost all of the bulk power transmission lines in peninsula Florida are owned by two investor-owned utilities. These utilities agree to make their lines available to FCG members under transmission contract agreements which specify charges and conditions.

The utilities in the FCG also coordinate their spinning and daily reserve levels. Spinning reserves refer to units that are running and synchronized but not generating electricity, but can be brought on line immediately. The usual practice is to hold spinning reserves equal to the single largest generating unit in the system. But through coordination, for example, one Florida utility is required to maintain spinning reserve of only 39 percent of what it would be required to maintain as an independent.<sup>30</sup> This reduces the overall capacity requirement of each member of the pool.

While there is some increase in region reliability as a result of the numerous interconnections among the various systems, the main purpose served by FCG is efficiency through the exchange of economy energy.

Ninety-nine percent of the generation and transmission capacity in peninsula Florida is controlled by utilities with membership in the pool.<sup>31</sup> A Rand study estimated the savings resulting from the operation of the pool at 2 percent of the total fuel bill of the Florida utilities.<sup>32</sup> The FERC states that the brokerage system is only an evolutionary step toward a more formal pooling arrangement and that the resulting savings should not divert the utilities' attention away from the creation of a more complete pooling arrangement.<sup>33</sup>

Usually under a "loose pool" arrangement the individual participants make no long-term commitment nor does management relinquish any of its individual decision-making autonomy. The disadvantages of loose pools are that they require numerous and continual contracting and cannot address the problems of long-term reliability and unit planning.

Fourth, the utilities could form "tight" power pools. A tight power pool functions in many ways as a multi-plant cartel. The management of the

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<sup>29</sup>Although 90 percent of the suggested exchanges are implemented. See Department of Energy, Power Pooling: Issues and Approaches, (1980), p. 2.18.

<sup>30</sup>Ibid, p. 2.19

<sup>31</sup>Ibid, at iv.

<sup>32</sup>Linda Cohen, "A Spot Market for Electricity: Preliminary Analysis of the Florida Energy Broker," Rand Corporation, N-1817-DOE, Santa Monica (1982) p. 1.

<sup>33</sup>FERC, Power Pooling in the U.S., p. 91.

formerly independent utilities agree to hand over many of the important decisions affecting the operation and planning of the utility to a group of committees made up of representatives of each participating utility. It is important to present the operation of a tight pool in some detail for it is this form of pool which will be subject to the greatest degree of antitrust exposure under a deregulated generation environment, yet it is this form of pool which yields the greatest coordination benefits.

The New England Power Pool (NEPOOL) is recognized as the most comprehensive power pool in the country.<sup>34</sup> The pool consists of 45 members of which 12 are investor-owned, vertically integrated utilities, and the remainder are municipal or cooperatively owned systems. Almost all the electric power in the entire New England region is generated by NEPOOL members.

The purpose of the pool is to run the grid as a single system. There is a Management Committee, an Operating Committee, and a Planning Committee made up of representatives from each pool member. Each pool member submits transmission plans and generation plans to the committees.

The Management Committee reviews the individual transmission plans of the members to determine their consistency with overall pool objectives. If the committee concurs with the plan, the project becomes a "pool-planned facility." "Pool-planned" status is important because members receive payments from the pool when other members make use of their pool planned facility. No member can build a transmission line without going through the review process. If the Committee disagrees with the plan, it can deny approval or insist on modification. The Committee (by a 75% majority) can require that a member build a transmission facility it deems necessary to the grid, provided proper compensation is paid. Charges for the use of the transmission system are complex. For our purposes it is enough to state that the transmission charges are determined by set formulas determined by the pool. These fees are determined for intra-pool transfers and for transfers between members and nonmembers (wheeling charges).

The Planning Committee forecasts long-range generation requirements. The Committee then sets each member's capability requirement, which includes expected load plus reserve. It can require a member to correct any deficiency which might adversely affect the pool's reliability. If the expansion becomes a "pool-planned" generation unit, then it obtains certain access rights to the "pool-planned" transmission facilities. By "informal" agreement at least 20 percent of any new pool-planned unit is made available to pool members on a subscription basis. The pool agreement requires that the excess capacity in any pool-planned baseload unit be offered to pool members before any such offer is made to nonmembers.

The pool centrally coordinates all major pool operations. Each pool member makes all its generating capacity available to a central dispatcher. This computer-controlled dispatcher minimizes total operating cost by loading units in descending marginal cost as though all of New England was one territory. Each member submits costing information to the control center, which includes heat rate curves, start-up time and costs, minimum- and maximum run times, fuel costs, and generation capacity. The control center computes the difference between the cost that would have been incurred utilizing each member's own generation and the actual cost utilizing pool generating units with economy dispatch. A member receiving economy energy pays to a fund the amount of the decremental cost avoided by utilizing pool resources. A member providing economy energy is paid its incremental cost from the fund. If a member is short on installed capacity plus reserve, and therefore receiving deficiency service, a charge is assessed at 110 percent of the incremental

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<sup>34</sup>This description of NEPOOL relies heavily on U.S. Department of Energy, Power Pooling: Issues and Approaches, 1980; and Federal Energy Regulatory Commission, Power Pooling in the United States, 1981.

cost of the units providing the service. Remaining monies in the fund are then distributed, after pool expenses, to the members on the basis of their supplies to and withdrawals from economy exchange and the amount of operating reserves supplied to and withdrawn from the pool.

Members who have insufficient installed capacity are required to pay to the pool a penalty based on the degree of insufficiency. These monies then are distributed to the members with excess installed capacity.

A Maintenance Scheduling Task Force prepares a maintenance schedule to maximize pool-wide reliability. If a member disagrees with the timing of the maintenance for one of its units, it can appeal, but the decisions of the pool authority are final.

There are a total of 17 "major formal pools" in the United States<sup>35</sup> with differing internal policies and degrees of interconnection and coordination effort. All of the sales of electricity in New York are controlled by the NYPP pool; all of the sales in the states of Pennsylvania, New Jersey, and Maryland are controlled by the PJM pool; and 99 percent of the sales in all of New England are controlled by the NEPOOL pool.<sup>36</sup>

#### GAINS FROM POWER POOLING

The gains from pooling stem from 1) operating efficiencies, including emergency assistance, 2) capacity planning efficiencies, and 3) reliability improvements.

Sources of operating efficiencies would be greater utilization of generating plant as more customer classes with diverse loads are added to the system, savings in operating and installed reserves, economy energy interchange, more flexible fuel choices, and maintenance coordination.

Capacity planning efficiencies result from more optimum siting opportunities for generation plant and transmission lines as more systems are integrated, staggered construction, and construction of larger generating units with concomitant scale economies.

Reliability improvements result from improved transmission planning, and the "law of large numbers" that the greater the number of systems in the pool the less chance each would be afflicted at the same time by the same problem.

#### DEREGULATION SCENARIOS<sup>37</sup>

The suggested degree of regulatory reform required in the electric industry varies greatly among observers. At a minimalist level some suggest that minor readjustments to the regulatory scheme at both the state and federal levels is all the correction that is needed. At the state level, it is perceived that

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<sup>35</sup>FERC, Power Pooling in the United States, p. 9.

<sup>36</sup>U.S. Department of Energy, Power Pooling: Issues and Approaches, p. iv-viii.

<sup>37</sup>A more complete discussion of the various deregulation scenarios can be found in William Berry, Public Utilities Fortnightly, Vol. 110 (September 16, 1982) p. 13; Edison Electric Institute, Alternative Models of Electric Power Deregulation (May 1982); Paul Joskow and Richard Schmalensee, Markets For Power, MIT Press (Cambridge, Mass., 1983); U.S. Department of Energy, Deregulation of Electric Power: A Framework for Analysis, DOE/NBB-0021, Washington (September 1982); and U.S. Congress, Office of Technology Assessment, Electric Power Wheeling and Dealing: Technological Considerations for Increasing Competition, OTA-E-409, Washington, GPO, May, 1989, Chapter 3.



the problem stems from the fact that utilities have not been permitted to earn a fair return on their invested capital due to disallowances for investments resulting in excess capacity and from the higher scrutiny of prudence reviews. The solution is a form of "rolling prudence review" where the commission is called upon to review the prudence of any investment decision in a step-wise fashion beginning at the start of the project. After approving the project, the commission would guarantee a fair return on any funds invested up until the last review.

At the Federal level, the minimalists would make minor adjustments to the Public Utility Holding Company Act of 1935 (PUCHA) and the Public Utilities Regulatory Policies Act of 1978 (PURPA) with the general purpose of easing the entry of existing utilities into the independent bulk power market.

For most others the defect in the regulatory structure is much more fundamental and requires more drastic surgery. The most common framework found in the deregulation scenarios rests upon the vertical integration of the industry, the access to the various parts of this vertical structure, the entry of new firms into the industry, and the remaining role for state and federal regulators.

The electric utility industry can be viewed as a three sector industry: generation, transmission, and distribution. Nearly all who have studied this subject would retain the monopoly status in the distribution sector with traditional cost-of-service regulation by the state or local utility commission.<sup>38</sup> The transmission sector creates the greatest unsettled dilemma. If it remains integrated with the generating sector, there would be a bounty of opportunities to utilize this crucial link to limit access and thereby discourage the entry of new firms at the generating stage. One solution would be to require complete vertical disintegration among the sectors and/or impose a common carrier obligation upon those supplying transmission services. This issue can not be resolved here, and for our purposes we can simply assume that a regional energy broker is in control of the transmission links with filed tariffs under a common carrier obligation or that the government becomes the owner of all transmission lines.

It is in the generation sector that we are primarily concerned. It is here that the natural monopoly model has been challenged and the opportunities for efficiency-enhancing competition appear to yield the greatest potential. For brevity we will accept a rather generic model of the future of the electric utility industry. Assume the following scenario:

---There are no restrictions upon entry into the generating sector of a "public convenience and necessity" type requirement, but general land use, safety and environmental requirements remain.

---Existing or new generators would be free to retain or acquire transmission lines or distribution companies, but if they do, they must agree to submit their entire operation to cost-of-service regulation.

---The generators respond to the contract offers from the distributors or energy brokers for power on a firm or interruptible basis, for emergency power, capacity, under long or short term contracts, spinning reserves, unit sales, or spot sales.

---New generating capacity would be built by existing firms or new entrants based upon their evaluation of the market's needs and the type and value of contracts they can negotiate with the distributors or energy brokers.

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<sup>38</sup>The most noted exception is Walter Primeaux, Jr., Direct Electric Utility Competition, Praeger (New York, 1986).

---The FERC must approve all wholesale contracts with the distributors under Section 205(c) of the Federal Power Act; but since these contracts are negotiated within the competitive bulk power market, the FERC announces that, provided the contracts are the result of arms-length negotiating between the non-affiliated parties, any contract price would be declared a fair price and no cost-of-service limitation would be employed. The distributors have the duty to minimize their costs by shopping for the best contract offers, but any wholesale rate approved by the FERC, i.e., the contract rate, must be passed through to the ultimate consumers with no state disallowance.<sup>39</sup>

---the generators would have no obligation to serve and would be free to withdraw from the business at any time (subject to state actions in a declared emergency or contract actions by distribution companies).

Now assume that these generators participate in a tight power pool similar to NEPOOL.

#### APPLICATION OF ANTITRUST

There is no explicit immunity from antitrust liability for the electric industry even though it is regulated. In Otter Tail Power Company v. U.S.<sup>40</sup> the Supreme Court ruled that "[a]ctivities which come under the jurisdiction of a regulatory agency nevertheless may be subject to scrutiny under the antitrust laws."<sup>41</sup> Yet the application of standard antitrust principles to an industry whose every term and condition of supply and whose price is reviewed and approved by a state or federal regulatory agency presents a delicate balancing act. Antitrust is applied primarily to industries where competition can play a constructive, efficiency-enhancing and regulatory role, if only certain rules of fair play are maintained. Regulation of industry (in an economic sense, not in safety, health, environment, etc.) is applied to those industries in which we believe competition cannot provide an efficient and constructive outcome. To mix these two policies within the same industry presents a substantial public policy challenge.

How the antitrust court would treat the pooling practices of the electric industry will always be fraught with uncertainty. Analyzing the application of antitrust to a partially deregulated electric industry presents several problems: (1) One cannot rely on existing application of antitrust to the utility industry because the courts considered the "special circumstance" of regulation in evaluating a utility practice. If that regulatory oversight is eliminated or significantly reduced the courts may or may not apply a more standard antitrust analysis. (2) One cannot apply standard antitrust analysis because of the continuing existence of a government commission, though with a reduced role, and the imperative of a national energy policy. (3) There has been a significant change in the court's approach to antitrust in recent years and one cannot be sure how today's courts would analyze a practice in any particular industry. Efficiency considerations did not play a significant role in earlier antitrust applications and were soundly rejected as a possible

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<sup>39</sup>See Mississippi Power and Light v. Mississippi ex rel. Moore, 487 U.S. 354 (1988); but see the exception in New Orleans Public Service, Inc. v. Council of the City of New Orleans, 911 F.2d 993 (5th Cir. 1990), cert. denied, 112 S.Ct. 411 (1991).

<sup>40</sup>410 U.S. 366 (1973).

<sup>41</sup>Ibid, at 365. See also Cantor v. Detroit Edison Co., 428 U.S. 579 (1976). There have been numerous attempts to enact legislation which would explicitly exempt electric utilities from the reach of the antitrust laws, but all have been rejected. See Fairman and Scott, "Transmission, Power Pools, and Competition in the Electric Industry," 28 Hastings Law Journal, 1159, 1190, n. 151 (1977).

defense.<sup>42</sup> Efficiency is the *raison d'être* of power pooling. Today the courts are much more attuned to efficiency considerations.<sup>43</sup>

#### ROLE OF THE FERC

The Supreme Court and the lower courts are fond of repeating that there exists only one antitrust law applicable alike to all industries.<sup>44</sup> But it is simply a more accurate statement to admit that, "the application of anti-trust laws, and anti-trust principles within economic regulation, varies greatly from industry to industry."<sup>45</sup> The first "special circumstance" that can distinguish industries is the fact of regulation. A second is the degree of market concentration in the industry. Concentration will be discussed later.

If a regulatory commission exists, the courts will attempt to accommodate its ruling with the overall plan being pursued by the commission. In electric power, the antitrust resolution will center around the attitude taken by the FERC. Even in a deregulated environment the FERC and the Federal Power Act are not going to disappear, and their presence will always temper the manner of the application of antitrust. The courts must perform a balancing act between our national antitrust policy and national energy policy. The Commission will be the primary spokesman for the interpretation of our

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<sup>42</sup>"Throughout the history of these statutes (the antitrust statutes) it has been constantly assumed that one of their purposes was to perpetuate and preserve, for its own sake and in spite of possible cost, an organization of industry in small units . . ." U.S. v. Aluminum Co. of America, 148 F.2d 416, 429 (2nd Cir. 1945); "Congress appreciated that occasional higher costs and prices might result from the maintenance of fragmented industries and markets." Brown Shoe Co. v. U.S., 370 U.S. 294, 344 (1962); "Possible economies cannot be used as a defense to illegality." Federal Trade Commission v. Proctor & Gamble Co., 386 U.S. 568, 580 (1967).

<sup>43</sup>Continental T.V., Inc. v. GTE Sylvania Inc., 433 U.S. 36 (1977). See also Richard Schmalensee, "Agreements Between Competitors," in Thomas Jorde and David Teece, Antitrust, Innovation, and Competitiveness, Oxford University Press (New York, 1992), pp. 98-118.

<sup>44</sup>"In unequivocal terms, we stated that '[w]hatever may be its peculiar problems and characteristics, the Sherman Act, so far as price-fixing agreements are concerned, establishes one uniform rule applicable to all industries alike.'" Arizona v. Maricopa County Medical Society, 457 U.S. 332, 349 (1982) (quoting Socony-Vacuum Oil Co. v. United States, 310 U.S. 150, 222 (1940)). And that rule is that "[t]he anticompetitive potential inherent in all price-fixing agreements justifies their facial invalidation even if procompetitive justifications are offered for some." Ibid., at 351. But only three years earlier the Court had upheld an association between music composers and two publishing houses where the publishing houses serve as monopoly sales agencies negotiating licenses for music compositions under set prices. Broadcast Music, Inc. v. Columbia Broadcasting System, Inc., 441 U.S. 1 (1979). See also Appalachian Coals, Inc. v. United States, 288 U.S. 344 (1933). "The antitrust laws prescribe competition in all markets, in all seasons, except as Congress may provide an exception." Superior Court Trial Lawyers Ass'n v. F.T.C., 856 F.2d 226, 234 (D.C. Cir. 1988), rev'd on other grounds, 110 S.Ct. 768 (1990). Yet in the very next sentence the court states, "it is our task to apply the antitrust laws in a discriminating manner that responds to the peculiar characteristics of the market in question, as it is the task of learned council for petitioners to identify any peculiarities of that market that may require a departure from the usual analysis." Ibid.

<sup>45</sup>Reinier Lock, "Anti-trust and Regulatory Issues in a Competitive Electric Industry," 1 Utilities Policy, 220, 224 (April 1991).

national energy goals and the manner in which antitrust can be integrated into that policy.

The impact that the FERC will have in the deregulated environment will depend on, (1) whether the court finds the commission has the authority to immunize pools from alleged antitrust violations, or (2) whether the commission commanded such practice in the name of national energy goals, or (3) whether strict application of antitrust would substantially impair the ability of the FERC to carry out its duties, or (4) whether the commission merely scrutinized and approved the practice. The FERC has been a leader in efforts to reduce the role of regulation in the bulk power market and rely on competitive outcomes. It may be inconsistent, and the FERC may be unwilling to serve as a primary defender and supporter of anticompetitive practices. Whether it can provide such protection is determined by the Congress, the statute, and how the courts are willing to interpret its provisions.

The FERC has the authority and the duty under the Federal Power Act to "divide the country into regional districts for the voluntary interconnection and coordination of facilities . . . It shall be the duty of the Commission to promote and encourage such interconnection and coordination within each such district and between such districts."<sup>46</sup> And in the same section the Commission was given authority to "make such modifications thereof as in its judgment will promote the public interest." This section could be interpreted as granting to the Commission the authority to immunize pools from the reach of the antitrust laws. First, it announces a national policy of desiring the pooling of electric utility resources. Second, it grants to the Commission the authority to attempt a voluntary structuring of the pools in whatever manner the Commission determines is in the public interest. Third, it recognizes the nation will be divided in a manner which might immunize market division complaints. Fourth, the statute encourages pooling within and between regions in a manner which might immunize conspiracy and price fixing complaints. Fifth, the Commission can argue that the anticompetitive practices are essential in order to make the whole scheme work.

Another section of the Act empowers the FERC to exempt a pool from any state law or state rule which "prohibits or prevents the voluntary coordination of electric utilities, including any agreement for central dispatch."<sup>47</sup> This is a very powerful grant of authority to the FERC and demonstrates the intent of the Congress to eliminate any obstacle which might inhibit power pooling.

It is unclear whether the authority of FERC, in regard to power pools, is substantial enough to fall within the guidelines of Gordon v. New York Stock Exchange, Inc.<sup>48</sup> and grant to the agency the power to decide the question of antitrust immunity. In Gordon, the Supreme Court ruled that because the statute gave the Securities and Exchange Commission power to fix commission rates for stock purchases, and authority to disapprove rules and practices concerning commission rates, and could require alteration of the rules when it found such was necessary, that Congress intended to "leave the supervision of the fixing of reasonable rates of commission to the SEC,"<sup>49</sup> and therefore repeal of the antitrust laws is necessary to make the Exchange Act work. The Court was particularly concerned about the conflicting standards that may result by subjecting the firms to antitrust while, at the same time, requiring them to adhere to the demands of the SEC.

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<sup>46</sup>16 U.S.C. Sect. 824a.

<sup>47</sup>16 U.S.C. Sect. 824a-1(a).

<sup>48</sup>422 U.S. 683 (1975).

<sup>49</sup>Ibid, at 691.

Would the statutory grant to the FERC discussed above be sufficient to fall within the Gordon standard and empower the FERC to immunize pool activity from the antitrust laws? To this writer's knowledge, this has never been tested. Others have claimed it does not.<sup>50</sup>

There are several problems with the provision which would work against a claim of antitrust immunity. First, the statute does not explicitly exempt the pools from antitrust challenge nor does it explicitly exempt any act directed, authorized, or approved by the Commission. For that matter, the statute states the exact opposite. Section 4 states: "Nothing in this Act or in any amendment made by this Act affects-(1) the applicability of the antitrust laws to any electric utility . . ." <sup>51</sup> How can this section possibly reconcile with the other provisions which strongly support a national goal of power pooling? Nor does the statute empower the FERC with the role of arbiter in a balancing act between antitrust goals and national energy policy. FERC must review and approve all power pooling agreements,<sup>52</sup> and the Supreme Court has ruled that anticompetitive considerations are an important part of the Commission's statutory charge to protect the "public interest,"<sup>53</sup> but this is not to claim that the Commission's finding is dispositive. It is settled that the FERC does have exclusive jurisdiction over wholesale utility rates.<sup>54</sup> It could be argued that this power grants to the Commission the authority to approve inter- or intra-pool power transfers even where these rates are fixed by the pool members, and would otherwise be in violation of the antitrust laws. But the courts have been hesitant to extend such authority and "(r)epeal of the antitrust laws by implication from a regulatory statute are strongly disfavored, and have only been found in cases of plain repugnancy between the antitrust and regulatory provisions."<sup>55</sup> The FERC should be able to make such a claim in the case of electric power pools by showing that the otherwise violative provisions of pool agreements are essential for the efficient operation of the pool.

While the FERC cannot adjudicate antitrust violations, the courts have shown great deference to the Commission's findings on antitrust issues involving power pools. The outline usually runs as follows: (1) Congress has concluded that coordination is in the national interest; (2) the FERC was given the important responsibility of fostering this national interest; (3) the FERC is obliged to make findings of anticompetitive effects in reviewing pooling agreements; and therefore, (4) the FERC is the expert body to provide enlightened guidance in the balancing of national interest and antitrust policy.<sup>56</sup>

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<sup>50</sup>George Springsteen, "Government Regulation and Monopoly Power in the Electric Utility Industry," 33 Case Western Reserve Law Review, 240, 254 (1983).

<sup>51</sup>16 U.S.C. Section 2603. This section was added under the Public Utilities Regulatory Policies Act of 1978, Pub. L. No. 95-617.

<sup>52</sup>Because each pooling agreement constitutes a wholesale rate schedule the FERC must approve the schedule under 16 U.S.C. 824(b) and 824e.

<sup>53</sup>Gulf States Utilities Co. v. FPC, 411 U.S. 747 (1973).

<sup>54</sup>See FPC v. Florida Power and Light Co., 430 F.2d 1377 (1970), rev'd on other grounds, 404 U.S. 453 (1972); and Nantahala Power & Light Co. v. Thornburg, 476 U.S. 953, 966 (1986).

<sup>55</sup>United States v. Philadelphia National Bank, 374 U.S. 321, 350-51 (1963).

<sup>56</sup>This outline is best exemplified in Central Iowa Power v. Fed. Energy Reg. Com'n, 606 F.2d 1156 (D.C. Cir. 1979).

Another problem is that the statute calls only for voluntary interconnections; and while the court in Municipalities of Groton was impressed by the fact that the NEPOOL agreement was voluntary,<sup>57</sup> this fact may work against the pool in the case of an antitrust challenge in a newly framed deregulated environment. Since the pool is a voluntary unit and its practices are not compelled by any governmental body and therefore could be avoided, the courts will be reluctant to grant immunity.<sup>58</sup>

[I]f an anticompetitive practice is the product, at least in part, of the company being regulated and could be avoided if the company choose to do so, then the anticompetitive condition is in reality the work of that company and is not "necessary" to the functioning of the regulatory scheme and will not be immunized from antitrust liability.<sup>59</sup>

The FERC could quite reasonably take the position that its statutory charge is to encourage voluntary pooling and interconnection, but the internal policies and rules are the pools' own making. The statutory requirement of FERC review of pool rules and practices and the Gulf States requirement that the Commission consider the anticompetitive nature of pool policies could be viewed only as a threshold review by an agency with substantially different antitrust standards than that employed by other agencies, e.g. the Department of Justice. In ruling on a pool proposal, the FERC must consider, not only antitrust, but also the Congressional policies favoring voluntary coordination, national energy goals, and other public interest factors. The "antitrust" as applied by the FERC toward pools could be substantially different from that applied to other industries. In which case, the members of the pool would have to mount their own defense without the crutch of implied immunity. This approach would be more consistent with prior adjudications. In Cantor v. Detroit Edison Co.,<sup>60</sup> the Supreme Court found the utility's free light bulb program violated the antitrust laws even though the state regulatory commission had reviewed and approved the program; the allowed rates included the cost of the bulbs; and those rates could not be changed without commission approval. Only if the commission had compelled the program would immunity have been granted because "it would be unacceptable ever to impose statutory liability on a party who had done nothing more than obey a state command."<sup>61</sup> In general, practices that are merely reviewed by a governmental commission do not receive protection from antitrust attack.

Even if the FERC cannot grant immunity, the statute creates a role for the agency which would require its input under the doctrine of primary jurisdiction. Primary jurisdiction gives to the administrative agency a "first-shot" to review a practice in the industry. The court here recognizes that an expert body has been created which is more familiar with the narrow

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<sup>57</sup>Municipalities of Groton v. Federal Energy Regulatory Commission, 587 F.2d 1296 (D.C. Cir. 1978).

<sup>58</sup>Under 16 U.S.C. 824a(b) the Commission has the authority to order interconnection if it finds such action "necessary or appropriate in the public interest." This authority has been used very infrequently. Florida Power Co. v. FPC, 425 F.2d 1196 (5th Cir. 1970), rev'd on other grounds, 402 U.S. 515 (1971).

<sup>59</sup>City of Mishawaka, Ind., v. Ind. & Mich. Elect. Co., 560 F.2d 1314, 1320 (7th Cir. 1977) (quoting City of Shakopp v. Northern States Power Co., Civ. No. 4-75-591 (D. Minn. 1976)), cert. denied, 436 U.S. 922 (1978).

<sup>60</sup>428 U.S. 579 (1976).

<sup>61</sup>Ibid, at 593.

and unique aspects of the industry, and the court expects the commission ruling to provide material assistance "in gathering the relevant facts and in marshalling them into a meaningful pattern."<sup>62</sup> Whether a court will require a threshold determination by the responsible agency will depend on whether the practice complained of lays at the heart of the task assigned the agency by the Congress, whether the agencies' expertise was required, and whether the input from the agency would be helpful to the court.<sup>63</sup>

It is important to emphasize that while the commission opinion is highly valued, it is not dispositive and the court may find contending policies more persuasive. And this is particularly true where the practice complained of does not lay at the heart of the regulatory mandate. The test is whether the "particular application of the antitrust laws is irreconcilably repugnant to the operation of the regulatory scheme."<sup>64</sup>

#### STATE ACTION

A primary source of protection against antitrust complaints in the case of vertically integrated, locally organized electric utilities has been state action doctrine. The doctrine simply recognizes a state's right to control its internal economic affairs in the manner it deems most appropriate. Since first announced in 1943,<sup>65</sup> the doctrine has been progressively narrowed.<sup>66</sup> The basic requirement for immunity under this doctrine is that (1) "the challenged restraint must be one clearly articulated and affirmatively expressed as state policy, and (2) the policy must be actively supervised by the State itself."<sup>67</sup> In a recent case the Supreme Court further tightened the defense by ruling that to satisfy the second prong of the test one must show actual, not just potential, and substantial supervision by the state.<sup>68</sup> State action cases will diminish considerably as more electricity is traded in the wholesale markets. The states are preempted by the FERC from making any ruling regarding the collective determination of wholesale prices. While, in a deregulation environment, firms can enter the bulk power field without receiving state permission, the state would still have general authority to site plants and transmission lines, and take other measures to protect the

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<sup>62</sup>Ricci v. Chicago Mercantile Exchange, 409 U.S. 289, 306 (1973) (quoting Federal Maritime Board v. Isbrandtsen Co., 356 U.S. 481, 498 (1958)).

<sup>63</sup>Mashpee Tribe v. New Seabury Corp., 592 F.2d 575, 580-81 (1st Cir.), cert. denied, 444 U.S. 866 (1979). "Even where the commission lacks the power to grant immunity it still may be appropriate to refer the matter to the commission for an initial determination to secure 'uniformity and consistency in the regulation of business entrusted to a particular agency' or where 'the limited function of review by the judiciary [would be] more rationally exercised, by preliminary resort for ascertaining and interpreting the circumstances underlying legal issues to agencies that are better equipped than courts by specialization, by insight gained through experience, and by more flexible procedures.'" City of Mishawaka, Ind., 560 F.2d at 1322 (quoting Far East Conference v. United States, 342 U.S. 570, 574-75 (1951)).

<sup>64</sup>City of Mishawaka, Ind., 560 F.2d, at 1321.

<sup>65</sup>Parker v. Brown, 317 U.S. 341 (1943).

<sup>66</sup>See Southern Motor Carriers v. United States, 105 S. Ct. 1721 (1985); and California Retail Liquor Dealers Assn. v. Midcal Aluminum Inc., 445 U.S. 97 (1980).

<sup>67</sup>Midcal, 445 U.S. at 105.

<sup>68</sup>F.T.C. v. Ticor Title Insurance Co., 60 U.S.L.W. 4515 (U.S. June 12, 1992).

environment, health, and safety of its citizens. The state's control of the distribution side of the business would remain much as it is.

It should be expected that a rash of state action claims will occur in the early years of deregulation as the states and federal agencies thrash about in their attempt to define their regulatory boundaries. But when the smoke clears, the states will have responsibilities at the distribution level, and the federal government will have complete authority over the transmission and generation sectors. The one movement which might resuscitate state action authority is the joining together of states into multi-state regional regulatory authorities. The Congress could grant to these regional authorities the power to regulate the bulk power produced and distributed within their area of jurisdiction.

#### APPLICATION OF ANTITRUST IN THE ABSENCE OF IMMUNITY

Several observers have stated that deregulation will not expose the electric utility to substantial antitrust liability.<sup>69</sup> This conclusion rests on a claim that Otter Tail has already exposed the industry to the full brunt of the law such that "implied immunity as a defense is essentially dead."<sup>70</sup> But this is not the case in challenges to pooling arrangements, where no cases have been found in which the court substituted its judgment for that of the Commission when the Commission presented a reasoned explanation.<sup>71</sup> It may be technically true that the Commission cannot grant immunity, but the deference shown by the courts on pooling issues yields the same result. One observer makes the point that, with implied immunity dead, the antitrust case then turns to a resolution of wilfulness or intent, or an examination of sound business reasons for the conduct.<sup>72</sup> In the absence of a supportive position from the Commission, many of the activities undertaken by pools would be per se violations of the antitrust laws; and no examination of intent or search for sound business reasons can save such a practice.

Assume that the FERC takes a neutral position on a pool practice which is subject to antitrust challenge.

The Sherman Act<sup>73</sup> condemns only "unreasonable" restraints of trade. "Determining whether a restraint is unreasonable generally requires that it be examined in the context of the particular industry on which it operates, and that its anticompetitive potential be weighed against any procompetitive justifications that can be offered."<sup>74</sup> Certain violations have been ruled so

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<sup>69</sup>"Deregulation at the federal level would be unlikely to expose utilities to massive new antitrust liability." William Mellor III and Malcolm Allen, "Public Utilities: American Law and Deregulation," in Robert Poole, Jr., ed., Unnatural Monopolies: The Case for Deregulating Public Utilities, Lexington Books (Lexington, Mass. 1985), 51-65, at p. 58; "Because antitrust immunity is not easily found, the transition from regulation to deregulation ...will not be too harsh." Sue Blumenfeld, "Comments," Ibid, p. 67-70, at 67.

<sup>70</sup>Reinier Lock, "Anti-trust and Regulatory Issues in a Competitive Electric Industry," 1 Utilities Policy, 220, 223 (April 1991).

<sup>71</sup>But in Bangor Hydro-Elec. Co. v. F.E.R.C., 925 F.2d 465 (D.C. Cir. 1991), the court ruled the FERC decision was not based on substantial evidence. This decision seems to represent more a shoddy presentation to the court than a questioning of the FERC's authority.

<sup>72</sup>Reinier Lock, supra, note 71, at 223.

<sup>73</sup>15 U.S.C. Sections 1-7.

<sup>74</sup>Chicago Board of Trade v. United States, 246 U.S. 231, 235 (1918).



pernicious that further inquiry into the particular circumstances of the industry is not considered necessary, and they are per se violations of the law. Recognized per se violations are price fixing, market division, tying contracts, and group boycotts.<sup>75</sup> But recent cases have sharply restricted the per se standard in a wide variety of antitrust contexts. The courts today are more prone to "ramble through the wilds of economic theory in order to maintain a flexible approach"<sup>76</sup> and seek out "redeeming competitive virtues."<sup>77</sup> This new approach could greatly favor the defense of a power pool. Under a rule of reason approach the pool would have the opportunity to present a full account of the benefits to society of the pool, the manner in which the pool supports our national energy goals, the economies achieved by the pool, that any restrictions are merely ancillary to the pool's legitimate operation, and the claim that the restrictions are essential to the pool's existence.

Cooperative ventures have received renewed support from the antitrust courts. Earlier law was very restrictive on horizontal agreements among competitors which resulted in any reduction of competition. The courts refused to allow any balancing of competitive harm against efficiency gains.<sup>78</sup> That law has now been reformed. In Broadcast Music, Inc. v. CBS<sup>79</sup> the Court focused on the effect of the restraint, proclaiming,

our inquiry must focus on whether the effect and . . . the purpose of the practice are to threaten the proper operation of our predominantly free-market economy--that is, whether the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output . . . or instead one designed to "increase economic efficiency and render markets more, rather than less, competitive."<sup>80</sup>

In Northwest Stationers v. Pacific Stationery,<sup>81</sup> the Court appreciated that "cooperative arrangements would seem to be 'designed to increase economic efficiency and render markets more, rather than less competitive'"<sup>82</sup> because they permit "the participating retailer to achieve economies of scale . . . and also ensures ready access to a stock of goods that might otherwise be unavailable on short notice."<sup>83</sup> This new found approval of cooperative efforts is especially manifest in horizontal restraints that are ancillary to "an integration of the economic activities of the parties and appear capable

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<sup>75</sup>Northern Pacific Railway v. United States, 356 U.S. 1, 5-6 (1958).

<sup>76</sup>United States v. Topco Associates, Inc., 405 U.S. 596, 609, n. 10 (1972).

<sup>77</sup>Broadcast Music, Inc. v. Columbia Broadcasting System, Inc., 441 U.S. 1, 9 (1979).

<sup>78</sup>See United States v. Topco Associates, Inc., 405 U.S. 596 (1972).

<sup>79</sup>441 U.S. 1 (1979).

<sup>80</sup>Ibid, at 19-20 (quoting United States v. Gypsum Co., 438 U.S. 422, 441, n. 16 (1978)).

<sup>81</sup>472 U.S. 284 (1985).

<sup>82</sup>Ibid, at 295 (quoting Broadcast Music, 441 U.S., at 20).

<sup>83</sup>Ibid.

of enhancing the group's efficiency."<sup>84</sup> These cases would form the defensive basis for a power pool against an antitrust charge. At least they could elevate the case out of a per se standard and permit a fair balancing of the pool's benefits and competitive harms.

If one "special circumstance" in the application of antitrust to utility industries is regulation, a second is the degree of concentration within the industry. Simply stated, the more concentrated the market, the more rigid and dogmatic will be the antitrust analysis. If the power pool produces only a small portion of the output within the relevant market, the court would be much more inclined to adopt a rule of reason analysis and allow a balancing of anticompetitive harm against positive social benefits. The degree of concentration is crucial to this analysis but, at this point, we do not know what the likely market structure in bulk power will be. While the current evidence shows a large number of potential entrants into the market, a mature bulk power market may be quite concentrated. A study by Schmalensee and Golub suggests that certain market areas could yield high effective concentration, but they warn of the great uncertainty in this area.<sup>85</sup>

Several types of pool activity which would be most subject to antitrust challenge would include the following:

1. data dissemination and information sharing
2. price fixing
3. market division
4. failure to make available an essential facility
5. refusals to deal

1. Data Dissemination and Information Sharing--As discussed above in the case of NEPOOL, there is an immense amount of information sharing required among pool members to properly operate the systems and plan for capacity expansion. One utility executive states that in capacity planning alone, each member must provide to all others information concerning

peak load and energy forecasts, planned generating additions and estimated service dates, planned transmission additions, projected fuel costs, generator unit heat and forced outage rates, maintenance schedules, projected operation and maintenance costs, projected unit retirements, transmission line ratings and rating revisions, and projected future costs of money and fixed charges.<sup>86</sup>

Then there is additional data sharing for the purpose of performing the minute-by-minute calculations for joint operating efficiency and for emergency assistance. It is not an exaggeration to state that in a tight power pool, each member knows, or can discover by asking, the most minute tidbit of information about all other members. Under "deregulation" the volume of data would increase substantially because of the increase in the number of expected participants in the bulk power markets. Good information flow is essential to the efficient functioning of the competitive process, but minute details of a competitor's operation can be used to further oligopolistic collusion. Attempting to draw a bright line between these two cases is an impossible task

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<sup>84</sup>Rothery Storage & Van Co. v. Atlas Van Lines, 92 F.2d 210, 229 (D.C. Cir. 1986), cert. denied, 479 U.S. 103 (1987).

<sup>85</sup>Richard Schmalensee and Bennett Golub, "Estimating Effective Concentration in Deregulated Wholesale Electricity Markets," 15 The Rand Journal of Economics, 12 (Spring 1984).

<sup>86</sup>Testimony of Richard Disbrow, Electricity Transmission Access, Hearing Before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce, 101st Cong, 1st Sess. 101-69 (1989), at 79-80.

but can only be determined on an individual basis. For that reason data exchanges are subject to a rule of reason analysis.

In American Column & Lumber Co. v. United States<sup>87</sup> members of a trade association provided numerous data covering sales, production, stock on hand, and prices to the association. There was no actual agreement as to production or prices, but the Court found the effect of the supply of the data was to induce members to act in tandem.

Genuine competitors do not make daily, weekly, and monthly reports of the minutest details of their business to their rivals, as the defendants did; they do not contract, as was done here, to submit their books to the discretionary audit and their stocks to the discretionary inspection of their rivals for the purpose of successfully competing with them. . . . This is not the conduct of competitors but is so clearly that of men united in agreement, express or implied, to act together and pursue a common purpose.<sup>88</sup>

Such close cooperation, between many persons, firms, and corporations controlling a large volume of interstate commerce . . . is plainly in theory, as it proved to be in fact, inconsistent with that free and unrestricted trade which the statute (the Sherman Act) contemplates shall be maintained.<sup>89</sup>

The general conclusion seems to be that reporting programs among competitors must refer only to past transactions and must permit independent action by the members. "Such programs are certain to be condemned when they involve elaborate standardization of the conditions surrounding a sale and require adherence to a filed price."<sup>90</sup>

The strict adherence to a common plan designed to effect the future is at the very core of an electric power pool. Without the ability to share the essential information, the pool cannot fulfill its function.

2. Price Fixing--In our 100 years of antitrust enforcement, tampering with price has raised the most ire from the courts. An agreement affecting price, whether among horizontal competitors or even among buyers and sellers in a vertical chain, is a per se violation of the antitrust laws.<sup>91</sup> "Whatever economic justification particular price-fixing agreements may be thought to have, the law does not permit an inquiry into their actual or potential threat to the central nervous system of the economy."<sup>92</sup>

A tight pool arrangement will contain numerous agreements regarding prices for energy, capacity, and transmission services for intra-pool transfers. The agreement will also probably control, or at least affect, one pool member's ability to deal with non-pool members; for example, fix a wheeling price for

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<sup>87</sup>257 U.S. 377 (1921).

<sup>88</sup>Ibid, at 410.

<sup>89</sup>Ibid, at 409.

<sup>90</sup>Clair Wilcox, Public Policies Toward Business, Irwin (Homewood, Ill., 1971), 125.

<sup>91</sup>For condemnation of horizontal price fixing see United States v. Trenton Potteries Co., 273 U.S. 392 (1927); for vertical price fixing see Dr. Miles Medical Co. v. John D. Park & Sons Co., 220 U.S. 373 (1911).

<sup>92</sup>United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 226, n. 59 (1940).

transfer of power to a member for resale to a nonmember. Meeks states that intra-pool price fixing would be found reasonable because the provisions are essential for the pool to operate.<sup>93</sup> But he believes that prices set by the pool for sales to nonmembers should be per se illegal. Whether for inter- or intra-pool sales, or sales at retail, these are prices set by what will be the most likely and most powerful competitors in a deregulated bulk power market. In the absence of regulatory protection from the FERC it would take a quantum leap in antitrust policy to approve such practices.

If the pool could escape the per se treatment accorded most price fixing schemes and have the practice evaluated under a rule of reason, it could argue that the purpose of agreement is not to restrict supply or increase price but in the net yield public benefits. That is, the agreement on price is merely ancillary to the primary purpose of the pool, which is to provide the most efficient and reliable power system. "[T]he constriction of supply is the essence of 'price fixing,'..."<sup>94</sup> But if these firms are competitors in the bulk power market, and if the market is even moderately concentrated, the arrangement creates the POWER to rig the market for the participant's own benefit. It is the power to affect market results, not the exercise nor the justifications for the power, which concern the courts. "(T)he material consideration in determining whether monopoly exists is not that prices are raised and that competition actually is excluded but that power exists to raise prices or to exclude competition when it is desired to do so."<sup>95</sup>

3. Market Division--There has always existed a certain "market ethos" within the electric power market that one respects the territorial sphere of another.<sup>96</sup> Historically most markets have been delineated by government franchise awards, but these protected markets will disappear under the vertical disintegration of deregulation. Under a deregulated market, with transmission access, any generator should have the unrestrained right to bid to serve a particular distributor. Whether the generator should have the right to directly serve retail customers, particularly large industrial loads, is a different issue which we cannot address here. It is likely that any historical ethos to respect territory will quickly disappear when third parties begin to bid service territories away from the pool.

Pools may have explicit agreements affecting service territory, customers, or how energy can be used. These agreements may be required to maintain pool integrity and reliability. They may also be used because pool members are fearful of pool partners using the pool to gain competitive advantage. As explained in the National Power Survey:

[W]herever there is the possibility that a participant who is also a competitor may use the advantages derived from a pooling arrangement to undercut and take over the present or potential customers of one or more other participants . . . such systems may want to reach one or more

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<sup>93</sup>James Meeks, "Concentration in the Electric Power Industry: The Impact of Antitrust Policy," 72 Columbia Law Review, 64, 111 (1972).

<sup>94</sup>Superior Court Trial Lawyers Ass'n v. F.T.C., 856 F.2d 226, 234 (D.C. Cir. 1988).

<sup>95</sup>American Tobacco Co. v. United States, 328 U.S. 781, 811 (1946) (emphasis added).

<sup>96</sup>David Penn, James Delaney, and T.Crawford Honeycutt, Concentration, Competition, and Regulation, Economic Analysis Section, Office of Antitrust & Indemnity, Nuclear Reactor Regulation, June 1975, p. 19 and 36-37.

formal agreements which have the effect of eliminating competition for loads.<sup>97</sup>

In a deregulated market, these types of market restrictions would probably disintegrate as nonmembers bid for service territory and, if not, would fall under antitrust challenge.

4. Failure to Make Available an Essential Facility--To date one of the widest applications of antitrust to the power industry is the demand by an outsider, mostly small municipal systems, for membership rights in a power pool. Smaller systems have little to offer pools but much to gain from membership. It is ironic that, in the event the antitrust laws cause sharp reduction in pool activity, one of the victims could be the smaller systems which are the greatest source of competitive pressure on the major systems. If pools are forced to dissolve, large, multi-plant generators will be able to realize most (or many) of the scale economies even as isolated units; but the smaller systems may be forced to combine in order to compete. But, as far as this issue goes, essential facility problems arise because of restrictions on access, particularly access into a vertically integrated grid or pool. Under deregulation and transmission access, these issues should disappear as the smaller generators have the same rights to claim space in the transmission grid as others. Whether they can successfully compete is a different story, but this particular problem should disappear.

If generator pools are permitted to continue even after antitrust challenge, they could be ruled an essential facility; and access rights to the many smaller systems would be protected by antitrust. The test for determining whether a network has become an essential facility contains these factors:

- 1) control of the facility by a monopolist or a group of competitors with monopoly power
- 2) the foreclosed competitor's inability practically or reasonably to duplicate the facility or its economic function
- 3) the denial of the use of the facility or use of restrictive terms which harms competition in the relevant market
- 4) the absence of a valid business reason<sup>98</sup>

Whether or not generator pools would be classified as an essential facility would depend crucially on the optimum size of pool in relation to the size of the market, that is, it would depend on the degree of concentration in the market, and whether nonmembers need access to the pool to compete. If, as claimed by many, scale economies in this industry have peaked, smaller units or smaller pools could be maintained without harm to efficiency or competitive fervor, and therefore the essential facility doctrine should be without force.

5. Refusals to Deal--Pools may have agreements which restrict sales to nonmembers, or require that members not participate in joint ventures with nonmembers, or may jointly construct a transmission facility and agree not to make it available for bulk power wheeling. The principle reason for the restrictions may be to maintain pool integrity, especially when the pool cannot have planned for all such possibilities. But an ancillary effect of the agreements is to foreclose some element of the market from outsiders.

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<sup>97</sup>Federal Power Commission, National Power Survey, 1964, Part 2, p. 367. The Legal Advisory Committee of the FPC National Power Survey submitted a list of questions to the Department of Justice which specifically asked whether pool agreements which allocate territory would violate the antitrust laws. The Department of Justice's answers were quite equivocal but generally agreed such agreements would raise "serious antitrust problems." Ibid, at 367-68.

<sup>98</sup>See William Tye, "Competitive Access: A Comparative Industry Approach to the Essential Facility Doctrine," 8 Energy Law Journal, 337, 346 (1987).

Northwest Stationers v. Pacific Stationery<sup>99</sup> has set the standard for analyzing such practice. Here a wholesale cooperative for the purchase of office supply products with about 100 members expelled one of its members. Despite the fact that boycotts are a traditional per se violation, the Court applied a rule of reason test because purchasing cooperatives

are not a form of concerted activity characteristically likely to result in predominantly anticompetitive effects. Rather, such cooperative arrangements would seem to be "designed to increase economic efficiency and render markets more, rather than less, competitive."<sup>100</sup>

But the Court was clear that the analysis would be different if the cooperative created market power or established an essential facility. A per se standard would be most likely in that event. The Court recognized that "the cooperative must establish and enforce reasonable rules in order to function effectively."<sup>101</sup> Under this standard, certain restrictions within the pool for the use of facilities would seem a reasonable protection to maintain pool integrity.

### SOLUTIONS

The issue here is whether there is a need to balance the national energy goals with the application of antitrust; and, if so, who should provide this balancing.

First, the Congress could clear up the problem with new mega-legislation designed to address the question of optimum structure of the electric industry. This is probably not possible because of the enormous complexity of the issue and the general uncertainty of exactly where to go with this industry.

A second possible answer would be to empower the FERC with sufficient explicit authority to arbitrate the issue, preempt state laws and private antitrust suits, and bring FERC authority within the guidelines of Gordon.

Third, the Congress could authorize rate filing agencies similar to those found in the trucking industry. Here groups of competitors are permitted to organize and determine collective rates and file them with appropriate agencies. Any member of the pool has the right to take an independent course by simply filing his own tariff. Once a rate is filed the carrier must charge that rate until a new filing occurs.<sup>102</sup> This type of rate setting is not in favor at this time, and it is very doubtful that the Congress would extend it to another industry. A study commission established to examine the motor carrier rate bureaus has recommended that collective ratemaking be condemned along with the total elimination of antitrust immunity for the practice.<sup>103</sup>

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<sup>99</sup>472 U.S. 284 (1985).

<sup>100</sup>Ibid, at 295 (quoting Broadcast Music, 441 U.S., at 20).

<sup>101</sup>Ibid, at 296.

<sup>102</sup>Maislin Industries, U.S., Inc. v. Primary Steel, Inc., 110 S.Ct. 2759 (1990).

<sup>103</sup>Motor Carrier Ratemaking Study Commission, Collective Ratemaking in the Trucking Industry: A Report to the President and the Congress of the United States, (Washington, D.C. U.S. Government Printing Office, 1983).

Fourth, the Congress could authorize state regional regulatory authorities, where states could combine to examine utility issues within their collective service territory. Since interstate commerce is affected, the states would need Congressional authority to affect such commerce. The state authorities would be empowered to review pool practices and rates and exempt such practices from antitrust attack.

Another possible response is to simply conclude that the application of the antitrust laws to power pools presents no real problem, that they are conspiracies among competitors and should be broken up. Efficiency and reliability will be guaranteed by the operation of the competitive bulk power market. Just as the technological imperative has changed the optimum structure of the electric industry, it has also changed the need for associations of competitors. While the FERC continues to proclaim the benefits and savings attributable to tight power pools, they are unable to quantify the magnitude of this savings.

A study prepared for the California Energy Commission claimed that formal power pooling among California electric utilities would save about 3 percent of the utilities' production cost (or a net savings of about \$200 million per year).<sup>104</sup> But the study came under severe criticism from each of the four affected electric utilities. It is the utilities' contention that the measure of potential savings is exaggerated due to the fact that the study fails to consider the savings resulting from the numerous coordination efforts already in place among the four utilities, though not of a tight pool variety. They claim most of the potential savings are already being achieved through a loose form of pooling. This is an important point of contention, for a loose form of pooling does not expose the pool members to the same degree of antitrust risk as is found in a tight pool. This at least raises the possibility of achieving most of the cost savings from pooling, while at the same time retaining the protection of antitrust scrutiny.

Another study examined the benefits of tight pools in Ohio and concluded that "the production benefits were very small and the costs of implementing the pool would almost negate those benefits."<sup>105</sup> A study by Christensen and Greene employed an econometric analysis and could not find any cost savings resulting from any form of power pooling.<sup>106</sup>

### Conclusion

This paper has discussed the coordination, planning, cooperation, and interconnection found in the electric utility industry. In other contexts, in other industries these same practices would be termed restraints, collusion, conspiracy and price fixing. We have argued that what protects the power pools from condemnation is the existence of regulation by the federal commission. In the presence of a truly deregulated environment, tight pools would be forced to dissolve under the pressure of antitrust exposure. With their demise could be the sacrifice of substantial economies. This loss must be considered in any deregulation proposal.

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<sup>104</sup>California Energy Commission, Costs and Benefits of Power Pooling in California, Sacramento (May 1980).

<sup>105</sup>Jill Baylor and Leslie Buttorff, "Considerations in the Formation of Power Pooling Arrangements," 120 Public Utilities Fortnightly, 25, 31 (November 26, 1987).

<sup>106</sup>Laurits Christensen and William Greene, "An Econometric Assessment of Cost Savings From Coordination in U.S. Electric Power Generation," 54 Land Economics, 139 (May, 1978). This study is sharply criticized in U.S. Department of Energy, Deregulation of Electric Power: A Framework for Analysis, DOE/NBB-0021, September 1982, p. 70.





# ELECTRIC SERVICE RELIABILITY STANDARDS

by  
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## Commission Order

On July 2, 1991 the State of New York Public Service Commission (PSC) adopted an order in Case 90-E-1119 establishing standards on reliability and quality of electric service. The order requires each New York State Class A electric utility to develop specific programs that will ensure that these standards are met.

This paper addresses how these standards were established. The paper only discusses the reliability<sup>2</sup> standards of electric service.

## Public Service Commission

How does the Commission operate? The PSC consists of a seven-person panel appointed by the Governor with the consent of the State Senate. The PSC's charge, as stated in its mission statement, "is to ensure that all New Yorkers have access to reliable and reasonably priced utility services provided safely, cleanly and efficiently." The Commission regulates utilities with more than \$37 billion in plant investment and more than \$26 billion in annual revenues. The Department of Public Service (DPS) consists of approximately 700 employees and provides staff for the PSC. Staff represents the public interest in all proceedings, assists the PSC in establishing service and operating standards, and administers regulations issued by the PSC.

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1. The views and opinions of the author do not necessarily state or reflect the views, opinions, or policies of the New York State DPS or New York State PSC.
  2. The reliability standards cover the frequency and duration of electric service interruptions.

## New York State Utilities

New York State has seven major (Class A) electric utilities.<sup>3</sup> These utilities are Central Hudson Gas & Electric Corporation (CHG&E), Consolidated Edison Company of New York (Con Ed), Long Island Lighting Company (LILCO), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation (NMPC), Orange and Rockland Utilities (O&R), and Rochester Gas and Electric Corporation (RG&E). These utilities provide electric service to most New York State residents, commercial establishments, and industrial firms. The service territories for some of the utilities are not continuous and, in some cases, are separated by many miles and service territories of other utilities. The sizes of the utility service territories vary from 660 square miles for Con Ed to 28,500 square miles for NMPC. These utilities were created by the unification of many small local utilities to form the present companies, but that is another story, and one that will not be told here.

A few facts about some of the utilities will provide examples of how diverse the utilities are in terms of sales and customers, and how difficult it was to establish electric service standards that could be applied to each utility.<sup>4</sup>

<u>Utility</u>	<u>GWH Sales</u>	<u>Residential Customers</u>	<u>Commercial Customers</u>	<u>Industrial Customers</u>
CHG&E	5,684	217,897	30,232	809
Con Ed	36,369	2,520,382	405,844	955
LILCO	16,393	895,294	98,935	2,627
NYSEG	17,947	685,898	70,802	1,498
NMPC	35,071	1,350,482	144,005	2,260
O&R	4,687	159,482	23,435	306
RG&E	7,685	294,601	28,618	1,432

These numbers only begin to tell the story of the differences among the utilities. Each utility also has different load densities, population densities, geographic constraints, operating procedures, and construction practices. Staff's task was

3. The Pennsylvania Electric Company, which is a Class A electric company, is exempt from these requirements because of the small size of its service territory in New York and the small number of customers served.
4. Electric Light & Power Electric Utility Industry Directory (1990 Data)

to establish standards that could be applied fairly to each utility.

### Standards

At first blush establishing electric service reliability standards appears to be a relatively easy task. Only when one tries to define each term does one begin to understand the complexity of the issue.

A standard is an acknowledged measure of comparison for quantitative or qualitative value. The relative value of a commodity can be judged based on how the quality of the commodity compares to the standard quality.

### Why Are Standards Needed?

During the late 1960's and early 1970's the quality of telephone service in the State of New York deteriorated to unacceptable levels. During this time period, competition began in telephone equipment, and incipient competition for other telephone services kept rates down. For this and other reasons the demand for telephone service increased at a rapid rate. The failure to properly forecast the service demand led to a failure to provide the necessary facilities to serve that demand. To correct the service problems, telephone utilities embarked on a massive capital construction program. As a result of the service problems and capital construction programs, the PSC established telephone service standards in 1974. These standards were an attempt to arrest and reverse the service deterioration.

The standards established performance levels against which service could be measured and monitored. The telephone industry had changed tremendously since the early 1970's, and in 1988 the PSC began a formal proceeding to revise telephone service standards to reflect the current state of the industry. In 1989, in conjunction with this effort, the PSC identified the development of service standards for telephone, electric, gas, and water utilities including customer service standards as one of 12 Department policy initiatives to ensure that utility services would not deteriorate.

### Background

Electric service standards had been established since 1965 at the generation and transmission levels for emergency planning and load shedding. These systems are considered to be deliverers

of bulk power, and must be designed to cover scheduled and forced outages. However, the nearest standard involving the distribution system had to do with the established voltage range of 114-123 volts for service to individual customers, and even this "standard" was established for conservation of energy more than anything else. The Commission decided in 1989 that now was the time to establish electric service reliability standards for the distribution system.

Staff faced the task of evaluating whether standards for reliability of electric service would be feasible, effective, and cost beneficial. Even with many years of service interruption data from each New York utility, Staff had to consider many issues before standards could be established.

A nationwide survey of Public Utility Commissions was taken to determine if any states had reliability standards for electric service. The survey results indicated that a number of Commissions had worked on the issue. However, staff determined that no reliability standards had been adopted and enforced at the level that staff wanted to establish.

A technical review took place (through the use of a consultant) of the reliability of electric service and power quality provided by one New York State utility. The review provided staff with the background knowledge of how the utility and its customers perceived electric service reliability. It also indicated how reliability could be measured and monitored with the use of interruption data. The review considered all of these issues:

- Will the standards be cost effective?
- Can the standards be realistic?
- What are the goals?
- Should they be statewide, by company, region, circuit, or customer?
- Are minimum standards acceptable?
- What level is appropriate?
- Who establishes standards?
- Should penalties or incentives be employed?
- How is the data reported?
- When is the data reported?
- Is the data audited?
- What does the customer want?

Deciding to establish standards and actually doing so involved much analysis and discussion before the final product was issued.

## Electric Service

What is electric service? Electric service means electricity being delivered to a customer. Why is it important? Electric service has become such an integral part of our everyday lives that it is inconceivable (at least to a DPS employee) that one could function without it. Many aspects of our society depend upon the use of electricity. In some cases, such as traffic signals, hospitals, police stations, and fire stations, the loss of electricity can pose a danger to society.

To an electric utility or a customer, electric service can mean anything from receiving electric power as a high voltage transmission customer to receiving electric power as a low voltage single phase distribution customer. Even a customer means different things to different utilities. To Con Ed, the World Trade Center and its approximately 200,000 occupants is a customer. To NYSEG, my uncle and his single family home is a customer. To simplify matters, the PSC has decided to establish standards for customers for each utility where a customer is defined as a metered customer location.

## Reliability of Electric Service

We can also ask, "What is reliability?" This question is not so easily answered. Like most of the other terms, reliability means different things to different people. Essentially reliability means the availability of service when the customer wants service. How is it measured?

There are many established electric service reliability indices in use throughout the country. Most utilities use one or more of the following indices<sup>5</sup> (or variations thereof) to measure service reliability.

**SAIFI** - This index is the average number of times that a customer is interrupted during a year. It is determined by dividing the total annual number of customers interrupted by the number of customers served.

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5. As generally defined by one or more of the following: Electric Power Research Institute, the Edison Electric Institute, the Institute of Electrical and Electronics Engineers, or American Public Power Association.

- CAIDI** - This is the average interruption duration. It is determined by dividing the annual sum of all customer interruption durations by the sum of customers interrupted in a year.
- SAIDI** - This is the average interruption duration per customer served. It is determined by dividing the sum of all customer interruption durations by the number of customers served.
- CAIFI** - This is the average number of interruptions per customer interrupted per year. It is determined by dividing the total number of interruptions by the total number of customers interrupted.
- ASAI** - this index is the ratio of the total number of customer hours that service was available to the total number of customer hours of service demanded.

These indices are normally calculated on an annual basis, but they can be calculated for any time period desired. Some are better than others, but that is mostly a subjective judgment of the user. The PSC does not suggest which reliability indices the New York State utilities should use for their own use, but has decided to use frequency (SAIFI) and duration (CAIDI) as the service standard indices to address the major interruption concerns of customers.

### Electric Service Interruptions

Even though the PSC had not previously established service standards, it had been concerned about service interruptions. An electrical system typically includes a generation station, transmission lines, substations, and distribution lines. A break or failure in any one of these components may cause an interruption of service to the customer. The PSC for years has required the electric utilities to monitor electric service interruptions and to file reports providing data concerning such interruptions. For the purposes of this requirement, an interruption is defined as the loss of service for five minutes or more for one or more customers. However, the PSC did not impose any limits for these interruptions until the recently imposed service standards.

### Interruption Data

Each Class A electric corporation is required to file a monthly summary report of service interruptions in accordance with

the provisions of the Department of Public Service regulations. In accordance with these regulations, each corporation shall maintain service interruption data that records:

- a. the operating area in which the interruption occurred,
- b. the affected circuit,
- c. the date and time of the interruption,
- d. the date and time service was restored,
- e. the duration of the interruption,
- f. the number of customers affected,
- g. the cause of the interruption,
- h. the weather conditions at the time of the interruption, and
- i. the system component involved.

Staff monitors electric service reliability by analysis of the data for each utility. The data provided to staff is given on a monthly basis by company operating area by cause codes. There are ten cause codes for overhead distribution circuits and seven cause codes for underground distribution circuits. The total number of customers affected, the total customer hours of interruption, and the number of interruptions are provided for each cause code. Staff reviews the data for accuracy and any abnormalities. Data can be compared on a month-to-month, year-to-year, or any other time period. The analysis is done on a total company basis then further broken down by operating areas. From the data a number of reliability indices can be calculated and used to determine how well a utility is providing service to its customers. If adverse trends are developing, follow-up investigations into the causes are conducted.

It should be noted that the analysis of data is done for both radial and network systems, and that most of staff's reports include results with Con Ed data and without Con Ed data. Most of New York State has an overhead radial distribution system whereas most of New York City (Con Ed) has an underground network system. Network systems are much more reliable than radial systems, so the data must be separated to make comparisons among utilities.

### Electric Service Standards

All the preliminary work had been done. It was now time to put everything together to establish the standards. Before the standards were formally adopted, staff issued a proposal to the electric utilities, consumer groups, other state agencies, and other interested parties for comments. The Commission issued the

standards after reviewing the comments and making revisions where appropriate.

Staff of the Power Division, which is responsible for monitoring utility electric service reliability, recognized that the standards would have to be fair, easily measured, and verifiable. Staff determined that the standards should meet the following guidelines:

1. use of accepted industry reliability indices,
2. recognize the various differences among utility operating areas, as well as utilities themselves,
3. establish both a minimum acceptable level and an objective level,
4. make provisions for identifying and improving the performance of worst performing circuits and operating areas that do not meet the minimum standards, and
5. require annual reports to the PSC.

I will address each of the guidelines in an attempt to show how the standards were established.

### Reliability Indices

It is important that each utility report the interruption data in a consistent manner. The PSC decided to use the data as required by the utility's reports in accordance with the Public Service regulations. Reliability indices can be calculated from the data. Staff generally used four indices (SAIFI, CAIDI, SAIDI, and CAIFI) as the main determinants of service reliability, but decided to use SAIFI and CAIDI as the indices for the reliability standards. These indices are easily calculated and are readily available on a utility, area, and circuit basis. These two indices can also be combined to determine other reliability indices, but staff did not believe that this would add any relevant information to that supplied by the use of SAIFI and CAIDI. Industry surveys indicate that customers are most concerned about the frequency of interruptions followed by the duration of interruptions as captured by the use of these two indices.

### Individuality of Utilities

Staff was concerned about the fairness and applicability of any standards. A review of the interruption data shows that reliability varies widely among the utilities. A look at utility operating area data will show the same reliability variance among operating areas.



Why is this so? There are many factors (many not under the control of the utility) that affect service reliability. Factors such as size of service territory, geography, weather, population density, load density, tree density, and land use and patterns can affect reliability.

In addition to these factors, there are other factors that are somewhat determined by the utilities that can affect reliability. Some of these factors are operating practices, service voltage level, feeder lengths, feeder design, equipment usage, reliability philosophy, and budgetary constraints.

Staff initially thought about using statewide standards but quickly abandoned the idea. How could one compare Con Ed and its network system to the upstate utilities and their overhead radial systems? Selecting statewide standards would mean that some of the utilities would be able to decrease reliability and still be better than the standard, while others would have to spend considerable dollars to try to attain the standard. The same problems occur within operating areas if one tries to use a utility wide standard to each utility operating area.

Staff concluded the only fair and realistic manner in which to set standards was on an individual utility operating area basis. Data is readily available by operating area, and this division appears to be manageable within most utilities in terms of design, engineering, construction, operating procedures and maintenance practices.

### Levels of Standards

Once staff decided on using SAIFI and CAIDI as indices, and established standards for each utility operating area, staff had to decide how to use the indices.

The immediate question became whether or not the standards would be used to maintain historical performance levels or to improve reliability.

Customer surveys indicated that most utility customers are satisfied with their current reliability level, and even those who are not satisfied, are not willing to pay more for improved reliability. Economics must be considered when discussing reliability improvements. Reliability can always be improved, but only at the expense of other system needs. A balance must be maintained between what the utility spends to improve reliability and what the customer is willing to spend for the improved reliability. The amount of money needed to improve reliability will vary from utility to utility, and even within operating areas

of a given utility. The investment will depend on the present level of reliability and the desired level of reliability. Generally a small investment will significantly improve poor reliability, while a great investment will be needed to slightly improve a highly reliable system. Staff did not want the utilities to embark on a massive spending program to improve reliability.

Staff decided to use the standards to maintain the average reliability requirements at historical levels, improve reliability for customers with the poorest service, and minimize utility spending to improve reliability. How was it able to accomplish all three goals?

Staff established an objective standard level and a minimum standard level. The objective level was basically established by taking the average of the best three out of the last five years' data, and the minimum level by taking the average of the worst three out of the last five years' data. These numbers were adjusted by staff in some cases to account for trends in the numbers, outliers among the numbers, and operating characteristics of some areas.

By requiring the utilities to meet the minimum level in each operating area, staff believes that the effect over time will be to raise the overall average reliability of each utility. These standards also give each utility an incentive to improve reliability in those areas that do not meet the minimum requirements.

### Poor Performers

The standards were established with the intent of having the utilities improve reliability to those areas where it was most needed. The utilities are required to meet or exceed the minimum level for each operating area. The minimum level shall be reached when the SAIFI and CAIDI indices of each operating area are equal to or better than the minimum level established for that area.

For distribution circuits within an operating area, a list of worst performing circuits shall be identified each year. The utilities will calculate the SAIFI and CAIDI indices at the end of each calendar year for each distribution circuit. The highest two and one-half percent of circuits from SAIFI and highest two and one-half percent from CAIDI will be designated the worst performing circuits from each area. In other words, the worst performing circuits shall comprise up to five percent of the circuits in each area.

## Reports

What are the utilities supposed to do with the worst performing areas and circuits? A report and analysis of the worst performing areas and circuits is required each year. The report shall describe the actions that the utility has taken or will take to improve reliability performance at least to the minimum level or indicate why no actions are required. The combination of reporting and the obligation to improve the worst performing areas and circuits form an incentive to improve the utility's performance.

## Order Establishing Standards

The order adopting standards on reliability and quality of electric service was issued and effective July 2, 1991. Does this mean that staff's work is done? Hardly. The order states that each utility shall file a report with the Department by June 30 of every year.

Remember that this is the first time that electric service standards have been established and issued in New York State. The Commission wants the standards to be a tool to be used by staff and the utilities to improve service reliability for the electric customers in New York. As utilities face more intense competition, defining service standards is more essential to meet the goals of the Public Service Law and to ensure that customers receive safe, reliable, and economical service.



ANALYSIS OF COMPETITIVE SITUATION:  
DATA REQUIREMENTS FOR PUBLIC POLICY PURPOSES<sup>1</sup>

BY  
Dora Mozes  
Communications Canada

Public policy makers need to acquire better telecommunications revenue and cost data in order to formulate appropriate telecommunications public policy and legislation in an increasingly open competitive market. Good data would provide them with a better description of changes occurring in the marketplace and the impact policy and regulatory decisions have on the industry. It would not be appropriate for the Minister of Communications, or his department, to recommend changes to existing regulatory procedures used to collect such data as this is the role of the regulator through a public process, if necessary (Annex 1). On the other hand, as a user of telecommunications data, it would be appropriate to comment on how and why public policy makers use existing telecommunications data.

There is no standard methodology of aggregating existing telecommunications revenue and cost data. The aggregated data presented in this paper is only one of many possible approaches. Such an approach has proven helpful in explaining the competitive situation in Canada. Unfortunately, since there is no standard methodology it takes considerable time and analysis to aggregate the data as shown in the following graphics and tables. The major source of the data used to derive such aggregated data is the Canadian Radio-television and Telecommunications Commission (CRTC). The CRTC collects the data from the regulated telecommunications carriers. These telecommunications carriers devote considerable resources in providing the CRTC with revenue and cost data. Though the Commission has attempted to reduce the regulatory burden, it has found obstacles. A major one is that existing legislation does not give it the power of forbearance (Annex 1).

The major usefulness of existing telecommunications revenue and cost data are that public policy makers can use the data to estimate the extent of competition in Canadian telecommunications; the extent of subsidy to basic local telephone service; and the extent of contribution payments paid by all telecommunications suppliers. The data, therefore, are at the heart of decisions by new

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<sup>1</sup> Prepared for presentation at the 1992 - Eighth NARUC Biennial Regulatory Information Conference. The views and opinions of the author do not necessarily reflect those of Communications Canada.

competitors to enter the telecommunications market. Indeed, justifications for regulatory adjustments to contribution payments were the central issues of the proceeding on public long distance competition.<sup>2</sup> These payments provide a means to ensure there are no "significant" increases in the price of basic local telephone service. The major shortcomings are that the principal source from which relevant revenue and cost data are derived lacks a consistent methodology on how to aggregate existing data of the dominant telephone companies; omits data on non-dominant telecommunications suppliers but includes some of their revenues and costs, such as their payments to the telephone companies; and, can not readily determine impacts of innovative new services. This paper provides a more in-depth analysis of these findings.

#### BACKGROUND:

Aggregate industry and individual regulated company revenue and cost data are required to determine if the telecommunications suppliers are engaged in anti-competitive behaviour. Unlike in the United States, comparable data are required to determine the extent dominant and non-dominant telecommunications carriers and resellers should subsidize basic local telephone service, or more accurately, the cost of providing network access to the public switched network.

The CRTC has decided to postpone rebalancing rates, as proposed by the telephone companies. Rebalancing rates would increase the price of monopoly basic local and lower the price of public long distance services to reflect their costs. Rather, the Commission decided to impose a pre-determined contribution payment on federally regulated facilities-based carriers and resellers as more competition is introduced in the industry. Contribution payments assure that revenues, used to subsidize basic local telephone service, do not erode even if the telephone companies lose market share.

Canada differs from most countries in that it does have a costing system for regulatory purposes in place. This enables Canada to follow a unique approach to the introduction of competition. Instead of structural separation, which the United States adopted with the AT&T divestiture in 1984, the CRTC adopts safeguards<sup>3</sup>

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<sup>2</sup> Canadian Radio-television & Telecommunications Commission Telecom Decision CRTC 92-12 "Competition in the Provision of Public Long Distance Voice Telephone Services and Related Resale and Sharing Issues." Ottawa:Minister of Supply & Services Canada, 1992.

<sup>3</sup> Canadian Radio-television & Telecommunications Commission Telecom Decision CRTC 92-13 "Rogers Cantel Inc. V. Bell Canada-Marketing of Cellular Services." A recent example of the Commission's decision to use safeguards rather than opt for structural separation.

and sophisticated economic and financial cost separation principles and methodology. The latter are used by the dominant carriers to prepare auditable Cost Inquiry studies and reports filed with the CRTC.

In June, 1992 the CRTC approved the introduction of competition in public long distance voice telephone services saying that such competition would promote lower prices, more choice, and fair competition while maintaining universal basic telephone service.<sup>5</sup> The decision is referred to as Telecom Decision CRTC 92-12 (decision 92-12). In making its decision, the CRTC made extensive use of data, studies, and reports arising from the costing system. It also made notable changes to contribution payments and some changes to existing costing principles (Annex 1). These changes will have a direct impact on the type of data presently provided by the telephone companies.

Presently there are numerous publicly available economic studies for new services to support the regulated telecommunications suppliers tariff filings, including those of competitors such as Unitel. There are also yearly audited financial data by monopoly and competitive telecommunications services and equipment, supplemented by two years of forecasted data for Canada's two largest telephone companies, Bell Canada, and the British Columbia Telephone Company (B.C.TEL.), and other carriers, such as NorthwTel, and Telesat. The latter data are referred to as Phase III results.

Phase III data are similar to financial data presented in shareholders annual reports but more comprehensive in that the monopoly and competitive data for Bell Canada and B.C.Tel. are further subdivided by broad service categories. These categories include: network access, basic local, public long distance, network services, terminals and common. Six years of Phase III data are publicly available for Bell Canada and B.C.Tel. Other federally

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<sup>4</sup> Bigham, Fred G. "Workable Category Costing in the Canadian Context" A paper presented to NARUC 1992 Annual Regulatory Studies Program, East Lansing, Michigan, August 1992. The paper gives a historical and current description of costing principles, methodology and procedures (Phase I, II and III data) approved and used by the CRTC. It also re-produces the basic 1990 Phase III data for Bell Canada and B.C.Tel.

<sup>5</sup> Canadian Radio-television & Telecommunications Commission Telecom Decision CRTC 92-12 "Competition in the Provision of Public Long Distance Voice Telephone Services and Related Resale and Sharing Issues." Ottawa : Minister of Supply and Services Canada, 1992.

<sup>6</sup> Ibid.

regulated dominant telephone companies operating in the Atlantic provinces are to provide Phase III data by late 1993. These companies can already provide similar data based on other internal company data bases, e.g. RSP. For example, MT&T has a financial system which provides segregated data by broad categories (graphic 4).

The following provides a more in-depth analysis of the usefulness and shortcomings of existing data and some conclusions.

#### USEFULNESS OF EXISTING DATA

The major uses of existing data are that public policy makers can:

1. estimate the extent of competition  
in Canadian telecommunications (graphic 1 and table 1);

It is estimated that 17% of Canada's \$15 billion telecommunications market came from competitive services and equipment in 1990. As of June, 1992 the Canadian Radio-television and Telecommunications Commission (CRTC) approved open competition in all but basic local telephone service, which is offered on a monopoly basis by the dominant telephone companies<sup>8</sup>. All things remaining the same, this would increase the potential competitive market from 17% to 60% (graphic 1 and table 1).

The question is how much of the competitive market will be captured by competitors as opposed to the existing telephone companies? By 2002 the CRTC expects that the dominant telephone companies will lose approximately 30% of their 1990 estimated \$7 billion public long distance market due to the introduction of competition by facilities based carriers and resellers in the public long distance market<sup>9</sup>. The telephone companies offer both monopoly and competitive services and equipment. As relatively no standard data is available on the competitors, it is difficult to know exactly what portion of the estimated \$2 billion competitive network services and the estimated \$2 billion terminal equipment market are theirs? Most would agree that the telephone companies have a significant portion of the competitive network services and

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<sup>7</sup> Bigham, Fred G. "Workable Category Costing in the Canadian Context" A paper presented to NARUC 1992 Annual Regulatory Studies Program, East Lansing, Michigan, August 1992. The paper identifies regulatory uses of Phase III costing results as: identification of cross-subsidization of competitive activity and resultant action; provide a test of accountability; monitor the effects of rate rebalancing initiatives; prerequisite for detariffing initiatives; and, benchmark for contribution payments.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

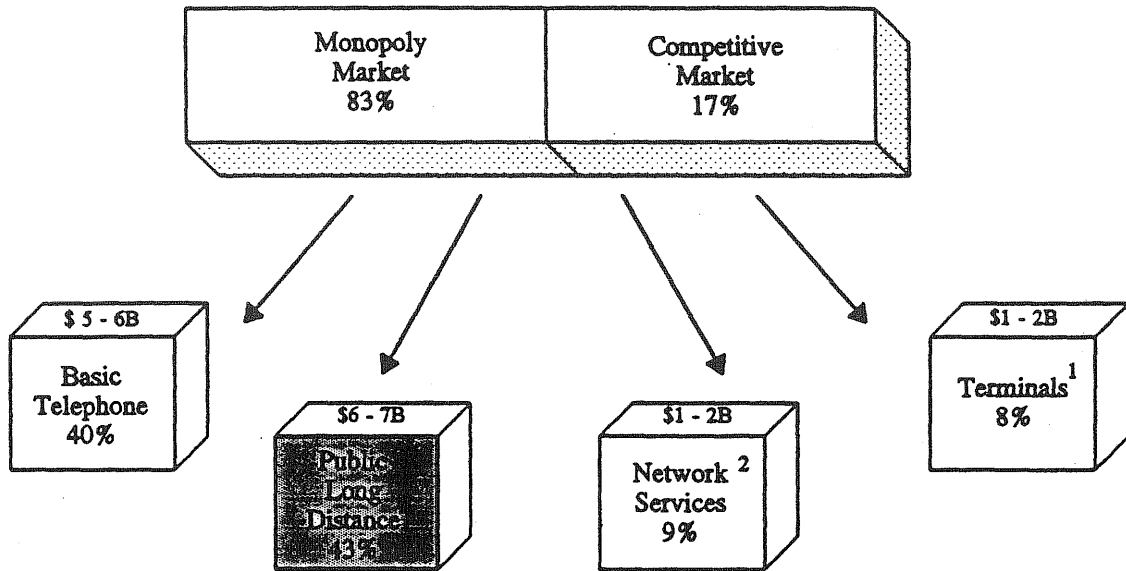


**Graphic 1**

## Extent of Competition in Canadian Telecommunications

**Total Revenues \$15B**

(as of 1990, in billions of Can \$)



Source: Communications Canada, based on Phase III Cost Inquiry 1990 Actual Results, Annual Reports, Statistics Canada & ISTC data

- Notes: 1. This estimated market share includes terminals sold by telecommunications carriers, including telephone companies, as well as numerous equipment manufacturers.  
 2. This estimated market share includes network services offered by telecommunications carriers, including telephone companies.

**Table 1**

## Canadian Telephone Industry Revenue Breakdown (in millions of dollars)

	ESTIMATED REVENUES(1) (as of 1990)	% OF TOTAL (1)
1.0 Long distance market		
1.1 Monopoly (Toll)	5856	42.7
Competitive		
1.2 Network Services	773	5.8
1.3 Terminals (other)	494	3.6
total long distance	7123	51.9%
2.0 Other (2)	576	4.2
3.0 Local Market		
3.1 Monopoly (3) (Access & Local)	4347	31.7
Competitive		
3.2 Network Services	516	3.8
3.3 Terminals (multiline & data)	1152	8.4
total local	6015	43.9%
<b>total industry</b>	<b>\$13714</b>	<b>100.0%</b>

Source: Communications Canada, based on Phase III Cost Inquiry 1990 Actual Results, Annual Reports, Statistics Canada & ISTC data

**NOTES:**

- (1) The breakdown of telephone industry revenues is based on Phase III, Cost Inquiry 1990 actual results. The ratios used to allocate the total industry revenue were derived from Bell Canada's figures. The terminal revenues were allocated between local and long distance based on a 60/40 ratio.  
 (2) Other revenues are those not related to the provision of telecommunications services. Examples are revenues from the rental of building space to others and communications seminars.  
 (3) Monopoly local revenues are those derived from: the provision of basic telephone service; network access services; monthly subscriptions fees; installation; maintenance; and other related services.

terminal market. The Phase III data show that these services generated approximately \$1.6 billion or more than 20% of Bell Canada's total \$7.3 billion operating revenues, in 1990 (Table 1). If competitors do not get a significant portion of these categories the telephone companies could retain their dominant position in the total competitive market to the year 2002.

Knowledge of the extent of the telephone companies' and their competitors market share would assist public policy makers to introduce appropriate and timely legislation for the telecommunications industry. For example, existing legislation does not allow the CRTC, to forbear from regulation. This was appropriate in a purely monopoly environment when all telecommunications services and equipment were offered by one telephone company. But potential growth to the existing 17% competitive telecommunications market due to the introduction of public long distance competition, should increasingly convince public policy makers of the need to introduce new legislation. An example is introducing legislation to give the regulator the power to forbear from regulation subject to certain conditions as to its use. The CRTC would exercise the new power only when it first determined that market forces are sufficient to protect the interest of users, and could resume regulation if the competitive market forces proved insufficient to do so (Annex 1). If the power of forbearance is given to the CRTC, public policy makers would require data even more to justify that indeed the conditions as to the use of the power of forbearance are met. For example, it would seem reasonable to subject the telephone companies to less regulation if the publicly available data show that competitors have a larger market share of one of more services and equipment than do the telephone companies.

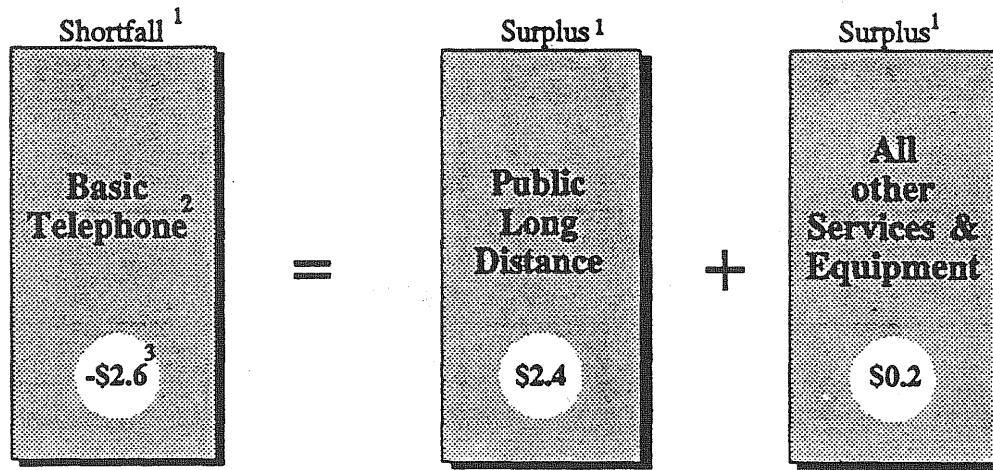
**2. estimate the extent of subsidy  
to basic local telephone service (graphic 2);**

For years Canada has allowed public long distance telephone service to subsidize basic local telephone service. Canadians generally supported a policy of subsidizing basic telephone service, through contributions from other services and equipment, until telecommunications services and equipment were found to be quite a bit cheaper in the United States. Large business users were increasingly tempted to bypass the network in the hope of achieving lower prices. The CRTC concluded that the best way of avoiding such bypass was to approve rate reductions and gradually introduce more competition in the industry. For example, it approved overall rate reductions of 50% in long distance services since 1987. In addition, it supported the introduction of new monopoly and competitive services by all telecommunications suppliers, including resellers. The CRTC also devised a comprehensive and auditable way of measuring shortfalls and surpluses from monopoly and competitive services and equipment based on Cost Inquiry principles and methodology. Generally the shortfall or surpluses are equal to net operating revenue minus other income & expenses, regulatory

**Graphic 2**

**Extent of Subsidy  
to Basic Local Telephone Service**

(as of 1990, in billions of Can \$)



Source: Communications Canada, Phase III Cost Inquiry 1990 Actual Results for Bell & B.C. Tel

**NOTES:**

1. Shortfall/Surplus = (Net operating revenue) - (other income & expenses, regulatory adjustments financial expenses and income taxes)
2. Basic telephone is: the provision of basic telephone service; network access services; installation; maintenance; and other related services.
3. Network access services had a shortfall of \$3.6 billion while other basic telephone (local monopoly) services had a surplus of \$1.0 billion in 1990. This gave a total shortfall of \$2.6 billion. (3.6 - 1.0) which was recovered mainly from the \$2.4 billion public long distance surplus.

**Table 2**

**PAYMENTS BY RESELLERS TO FACILITIES-BASED  
CARRIERS - 1991\***

	(\$000 )
Gross Revenue	\$180,288
Less: Payments to Facilities- Based Carriers	
Private Line Leases	\$45,498
Access Costs	19,621
Message Toll Services	45,602
Contribution**	<u>11,361</u>
<b>TOTAL</b>	<u><b>122,082</b></u>
<b>Net Revenue</b>	<b>\$58,208</b>

Source: D.A. Ford & Associated, May 1992

\* based on a survey of 12 companies

\*\* contribution payments for 1991 was 9% of the total payments by resellers to facilities-based carriers

adjustments, financial expenses and income taxes. The regulatory adjustments can be significant for both dominant and non-dominant telecommunications suppliers. Indeed justifications of regulatory adjustments were the central issues of decision 92-12. Public knowledge of the adjustments ensures fair competition and once approved by the CRTC can be incorporated as part of the Phase III Cost Inquiry.

In 1990, for Canada's two dominant telephone companies, Bell Canada and the British Telephone Company (B.C.Tel.) the amount of shortfall or subsidy was \$3.6 billion. The subsidy is equivalent to the costs incurred by the dominant telephone companies and approved by the CRTC to provide network access to the public switched network. Except for a few exceptions, the telephone companies do not have tariffs to recoup these costs. Rather, the telephone companies recover the \$3.6 billion shortfall from surpluses obtained from their other services and equipment. In 1990, the combined Bell Canada and B.C.Tel. additional contribution or surplus from monopoly optional local telephone services, installation, maintenance and other related basic local telephone services was \$1.0 billion. This reduced the \$3.6 network access shortfall to \$2.6 billion (graphic 2). The majority of the shortfall was recovered from a \$2.4 billion surplus in their combined public long distance services. Other competitive telecommunications network services and terminal equipment offered by these two companies contributed an additional \$0.2 billion towards this shortfall or subsidy in 1990.

**3. estimate the extent of contribution payments paid by all telecommunications suppliers (graphic 3).**

More recently the Phase III data assisted in finding a unique way of further reducing the price of telecommunications services and equipment, but at the same time ensuring the lowest possible price for basic local telephone service.<sup>10</sup> The CRTC first determines target contribution payments which all competitors must provide to the telephone companies. As stated by the Commission in decision 92-12:

".....to the extent that the access cost subsidy is to be maintained, competitors in the long distance market must also pay some level of contribution. Therefore, the contribution requirement of competitors, and the manner in which it is to be collected, are important considerations."

Target contribution is defined, in decision 92-12, as network

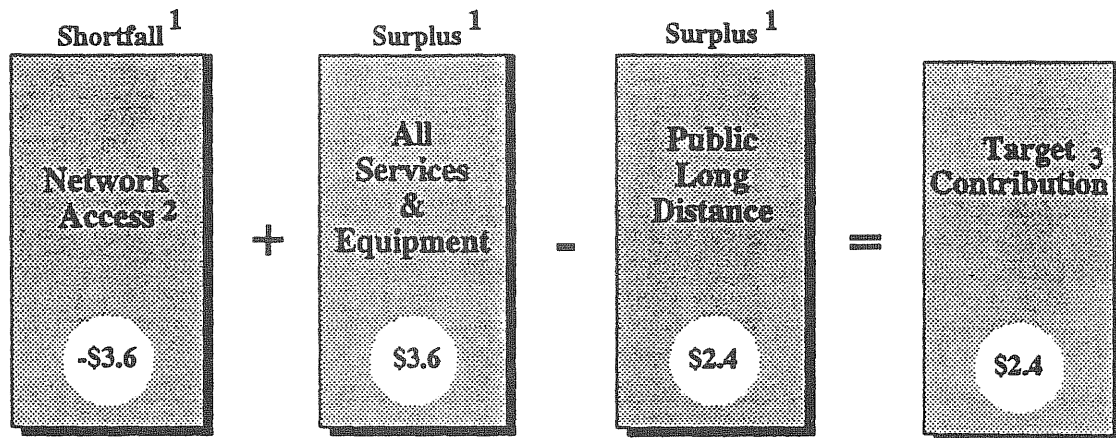
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<sup>10</sup> Canadian Radio-television & Telecommunications Commission Telecom Decision CRTC 92-12 "Competition in the Provision of Public Long Distance Voice Telephone Services and Related Resale and Sharing Issues." Ottawa : Minister of Supply and Services Canada, 1992.

**Graphic 3**

### Extent of Contribution Payments

(as of 1990 in billions of Can \$)



Source: Communications Canada, Phase III Cost Inquiry 1990 Actual Results for Bell & B.C. Tel.

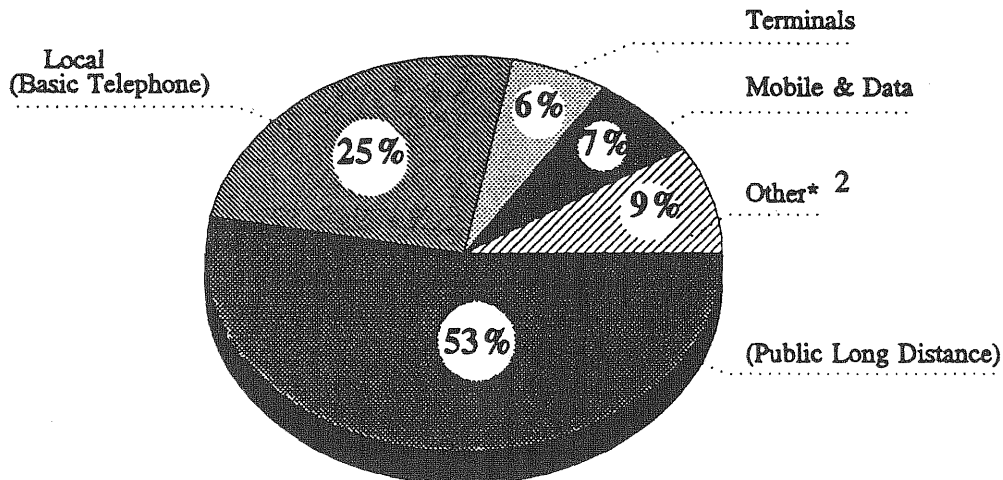
**NOTES:**

1. Shortfall/Surplus = (Net operating revenue) - (other income & expenses, regulatory adjustments financial expenses and income taxes)
2. CRTC has ordered that the network access data be further segregated by residential, business and other (Telecom Decision CRTC 90-20).
3. Target contribution = network access shortfall + surplus from all broad service categories, including from other local monopoly services - surplus from public long distance e.g. message toll (Telecom Decision CRTC 92-12).

**Graphic 4**

### Estimated Revenues of MT&T<sup>1</sup>

\$469 Million



Source: MT&T, based on 1989/90 operating revenues

- Notes:
1. MT&T is to have Phase III Cost Inquiry results in 1993.
  2. includes directory services, consumer products and P.C.S.
  3. While MT&T has approximately 30%, Bell has approximately 40% allocated to basic telephone service (see table 1).

access shortfall plus surplus from all other services and equipment, except public long distance. This produces target contribution payments. For example, based on the combined Bell Canada and B.C.Tel. Phase III results, the target contribution would be \$2.4 billion, in 1990 (graphic 3). This is lower than the \$2.6 billion cross subsidy calculated in graphic 2.

Once the CRTC determines the target subsidy it determines specific adjustments that must be made to the level of contribution, such as in decision 92-12 to adjust for common costs and gross receipts tax. The adjustments to contribution payments proposed by Unitel, the largest competitor of the telephone companies to supply public long distance services, were estimated at more than \$3 billion for the years 1993 to 2007. As noted above, public knowledge of the adjustments ensures fair competition and can easily be incorporated as part of the Phase III Cost Inquiry. The CRTC then determines the mechanism to collect contribution, based on specific criteria. The criteria used in decision 92-12 were: efficiency of administration; sustainability; achievement of universal service objectives; and, pricing flexibility of all market participants. In the same decision it chose to employ a variable per access trunk contribution charge that will increase with the size of the trunk group, rather than an average per minute approach.

#### **SHORTCOMINGS OF EXISTING COSTING SYSTEM:**

The major shortcomings of existing costing system, for public policy, are that Phase III:

1. lacks a consistent methodology on how to aggregate existing data of the dominant telephone companies;

Graphic 1 and Table 1 demonstrated how the Phase III financial data, of Bell Canada, can assist in determine the extent of competition in Canadian telecommunications. Bell Canada comprised approximately 50% of the estimated \$15 billion telecommunications market or approximately 60% of the \$13.7 billion telephone industry in 1990 (Table 1). Phase III data are filed with the CRTC by Bell Canada, B.C.Tel., NorthwTel, and Telesat. Aggregated Phase III data of all the dominant telephone companies may provide a different distribution of revenues by broad service categories for the telecommunications industry than the ones shown in graphic 1 and table 1. For example, similar data from MT&T, which operates in Nova Scotia, show a lower percentage of MT&T's market allocated to basic telephone service than that of Bell Canada, which operates in Quebec and Ontario (graphic 4). It will be important to get aggregated Phase III data on all dominant telephone companies now that public long distance competition is permitted.

In decision 92-12, the Commission did order that 5 year average combined Bell Canada and B.C.Tel. Phase III data be used as proxies

to calculate target contribution for dominant telephone companies which will have Phase III data available in late 1993 or 1994. This pertains to the Atlantic dominant telephone companies, MT&T, N.B.Tel., NFLD. Tel. and one Prairie dominant telephone company, AGT.

It may not be easy to get a 5 year average of Bell Canada's and B.C.Tel.'s Phase III data for the following reasons:

- Presently, neither the CRTC nor Canada's other major source of publicly available data (e.g. Statistics Canada<sup>11</sup>, Information Technology Association of Canada (ITAC) and Stentor) provide aggregated Phase III data for the dominant telephone companies.
- A less significant but still important and related shortcoming of existing data is that, though Phase III data are similar to financial data presented in shareholders annual reports, the data reported to the regulator and shareholders and Statistics Canada may differ. For example, while Bell Canada reported operating revenues of \$7655 million in its 1990 shareholders' annual report, it reported \$7328 million in its audited 1990 Phase III report. Note that it is the general intention of the Phase III costing decisions to have consistency in these data sources.
- Even now public policy makers find it difficult to aggregate Bell Canada's and B.C.Tel.'s Phase III data as a number of steps are required, including: (1) aggregate the detailed historical audited and forecasted Phase III costing data submitted yearly by the individual companies to the CRTC for the years 1987 to 1992; (2) verify the aggregated total Phase III data by comparing them to Statistics Canada's financial data on Canadian telephone companies and the various telephone companies publicly available annual shareholders reports; (3) check for data inconsistencies by referring to relevant CRTC decisions, which for various reasons permit some differences in the allocation of costs for individual regulated company.<sup>12</sup> and, one of the most difficult steps, (4) estimate

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<sup>11</sup> Statistics Canada. "Telephone Statistics" Catalogue 56-203 Ottawa: Minister of Supply and Services Canada, Annual. Aggregate data on telecommunications equipment suppliers, based on Statistics Canada trade statistics, excluding the sale and rental of terminal equipment from the telephone companies, is published by: Industry Science & Technology Canada (ISTC). "Information Technologies Statistical Review." Ottawa: ISTC, Annual.

<sup>12</sup> Canadian Radio-television & Telecommunications Commission Telecom Decisions CRTC 85-10, 85-19, 86-5, 88-7, 89-12, 90-13, 90-20, 91-18, 92-11, 92-12. Ottawa: Minister of Supply and Services Canada, 1985-1992.



the revenues and costs of all the other competitive segments of the industry.

A number of assumptions had to be made to derive meaningful aggregated data as shown in the graphics and tables of this paper which are likely to change in an increasingly competitive environment. For example: Common costs, plus other revenues and costs not related to the provision of telecommunications services, are excluded. The Phase III costing methodology is not based on a fully distributed costing principle. Common costs and the other category need to ensure that those associated with competitive market of the dominant telephone companies and their competitors are separated out, but not necessary assigned to specific service categories to maintain the existing costing principle. Common and other costs of competitors can then further be compared to those of the other telephone companies. This would ensure there was no cross subsidization between monopoly and competitive services which would give the dominant carriers a competitive advantage over their competitors. It would also help identify what portion of this costs would be paid by competitors as opposed to their competitors.

In decision 92-12, the CRTC agreed that competitors should not pay an "unreasonable" portion of the dominant carriers' common costs given that competitors have their own common costs, and to ensure that the dominant carriers have an incentive to minimize these costs. It further stated that, for the purposes of decision 92-12, common costs (and PUC) be allocated on the basis of surpluses; and, that competitors contribute only to that portion of common costs that are allocated to categories other than public long distance (MT) that produce surplus revenues. Note that Unitel estimated significant common costs adjustments to contribution payments of \$1.4 billion for the years 1993 to 2007.

2. omits data on non-dominant telecommunications suppliers but includes some of their revenues and costs, such as their payments to the telephone companies (table 2);

Phase III data excludes other telecommunications terminal equipment suppliers, specialized carriers, such as Telesat and Teleglobe, other facilities-based competitors, such as Unitel, and resellers. As noted above, some payments from these suppliers are included under one or more of the categories and the CRTC has decided to extent the Phase III costing to some of the dominant telephone companies.

The CRTC stated in decision 92-12 that it expects 30% of the existing \$7 billion public long distance market of the dominant telephone companies will go to competitors by the year 2002. This means that there is a more urgent need to acquire similar aggregate information on non-dominant telecommunications suppliers, such as Unitel, cellular operators such as Cantel, radio common carriers, and terminal equipment manufacturers and resellers.



Presently none of Canada's major source of publicly available telecommunications data, e.g. Statistics Canada, the CRTC, ISTC, ITAC and Stentor, provide aggregated data on the non-dominant suppliers. It remains to be seen if it would be in the public interest that the CRTC, in collaboration with Statistics Canada, the central statistical agency in Canada, would provide such aggregated Phase III data for public policy purposes and ensure confidentiality, where necessary, is maintained. Note that Bill C-62 would give the Minister of Communications or the Chief Statistician of Canada the right to have the CRTC provide on request any information submitted to the CRTC. The added advantage of involving Statistics Canada would be that the agency is in a better position to get relevant financial information from such non-dominant suppliers.

The combined Bell and B.C.Tel. Phase III revenues and costs includes some, but not all, revenues of their competitors. For example, for 12 resellers, in 1990, this was \$11.4 million (Table 2). The other categories would also pick up costs and revenues associated with the lease of facilities to resellers. Again for 12 resellers, these revenues were \$110.7 million which is \$58.2 million short of their total \$180.3 million gross revenues.

The CRTC made notable changes to the contribution payments paid by all facilities-based and resellers in decision 92-12. Contribution payments by competitors, including facilities based carriers such as Unitel and resellers such as Call-Net, will significantly increase, thereby increasing the telephone companies' Phase III access revenues. This in turn should reduce the telephone companies' revenue shortfall. General agreement should emerge that the regulated contribution payments be identified in the Phase III results. The CRTC has already agreed that some changes will be required in reporting access costs, including a separate subdivision for residential and business users and other in Telecom Decision CRTC 90-20 (graphic 3). More recently the CRTC went further to subdivide access costs associated with common costs and contribution payments for resellers in its CRTC Access Guidelines Related to Decision 90-20. It remains to be seen if the payments will be further subdivided for those paid by facilities based carriers, such as Unitel, and those paid by resellers, such as Call-Net. Such data would facilitate generating aggregated Phase III data for the telecommunications industry without double counting the contribution payments from competitors.

### **3. data can not readily determine impacts of innovative new services.**

While the CRTC may find detailed Phase II economic studies for new services useful for approving specific tariffs, the data are generally too segregated for public policy purposes and are often filed in confidence. Rather public policy makers make more use of the actual and forecasted Phase III costing data. Phase III

already asks for actual plus two years of forecasted data which to be accurate should already include new services. If so, carriers should be able to identify actual and forecasted data on existing and new services in the aggregate. Note that Jean Monty, Chairman of Bell Canada recently was able to identify total aggregate revenues for new optional services, as well as for long-distance and local, when he said that:

".....revenues from optional services is growing at about 20% a year, far outpacing long-distance revenues, which is stagnant and local revenues, which is growing at about 6% annually." and in the same article he stated that:

"Bell's revenue from optional services is expected to double by 1995 or 1996. By then, the new services won't fully compensate for the estimated \$2 billion that Bell loses from local service each year. But they will allow Bell to continue chopping long-distance rates."<sup>13</sup>

New services, such as virtual private networks and broadband services, often affect more than one Phase III broad service category, therefore, their revenues and costs are identified as such. Unfortunately, the Phase III data now combined the revenues and costs of existing and new services and allocates the data to each of relevant Phase III broad service categories. Proper identification of total aggregate costs for new services may be more difficult, but not impossible as often the Phase II methodology used in economic studies for new services could be applied.

Major benefits of acquiring such total aggregate Phase III data for existing and new services would be to:

- show how much new services in aggregate, as opposed to individually, actually contributed in that year and for the next two forecast years;
- show whether the more competitive new services were contributing more than the existing services, and at what additional cost;
- permit the regulator to measure the effects of price discounts or price caps on existing (or basic) and new (or enhanced) long-distance services; and
- better assist in monitoring the effects of introducing public long-distance competition by seeing the speed at which the telephone companies' shortfall in basic local telephone service decreases.

A list of what the new services are, may prompt the regulator to select those services which would require a Phase II economic study but may substantially reduce the need to file economic studies for all new services.

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<sup>13</sup> Urlocker Mike. "Phone firms offer bewildering array of new services." Toronto: Financial Post, May 22, 1992.

## CONCLUSION:

Analysis of the existing data demonstrate that public policy makers can make use of existing Cost Inquiry costing principles, methodology and procedures to estimate the extent of competition, subsidies and contribution payments in the telecommunications industry. The methodology and principles employed to develop such data were established during the Commission's ten year Cost Inquiry. These are updated on a regular basis to reflect the changing regulatory environment.

Contribution payments are paid by all telecommunications suppliers. The payments have significant political and financial implications and are an essential consideration in market entry decisions of new competitors. Indeed justifications for regulatory adjustments to contribution payments were the central issues of the proceedings on public long-distance competition and decision 92-12. These payments provide a means to ensure there are no "significant" increases in the price of basic telephone service.

Unfortunately, analysis of existing data also demonstrates that there are major shortcomings as well as advantages. Phase III lacks a consistent methodology on how to aggregate data on all the dominant telephone companies, and incorporate data on non-dominant telecommunications suppliers without double counting payments made by them to the telephone companies. The implementation of decision 92-12, which approves open competition as long as specific terms and conditions are met, will emphasize the need to address these shortcomings as soon as possible. Policy makers need to also devise a way to readily determine the speed at which the contribution or surplus of new competitive services by dominant telephone companies and their competitors reduce the telephone companies' shortfall in network access services. Solving existing data inadequacies would: speed up the introduction of all new services and the implementation of new legislation required in an increasing competitive environment, such as forbearance. The CRTC could then reduce the regulatory burden imposed on telecommunications suppliers and permit the CRTC to concentrate its efforts more on the non-competitive segment of the industry.

ANNEX 1  
BACKGROUND INFORMATION ON TELECOMMUNICATIONS IN CANADA

1.1 BASIC FEDERAL RESPONSIBILITIES AND TOOLS:

The Canadian telecommunications regulatory agency, the CRTC, is an independent regulatory authority accountable to parliament (e.g. the federal government) through the federal Minister of Communications. The Commission's mandate for telecommunications presently derives from several statutes, including certain provisions of the Railway Act, which are made applicable to telecommunications, and the National Telecommunications Powers & Procedures Act. The Commission's primary roles are to ensure that:

- a) the rates charged by federally regulated carriers are in the public interest, or more specifically that the rates charged are just, reasonable and non-discriminatory; and that,
- b) in the provision of their services and facilities, these companies do not treat their customers or competitors unfairly.<sup>14</sup>

These roles will not change under a new telecommunications Act referred to as Bill C-62.

The federal department of Communications, Communications Canada, monitors the activities of the CRTC. One reason is that any CRTC decision can be appealed to the Governor in Council (GIC, e.g. the federal government's Cabinet). The Minister of Communications must make recommendations to the GIC regarding such appeals. A CRTC decision can also be appealed to the federal Courts (e.g. the Federal Court of Appeal and the Supreme Court of Canada) if the appeal is based on questions of law or jurisdiction.

The Minister of Communications, and his department is responsible for legislation related to the telecommunications industry. He has recognized that the existing legislation in Canada does not provide the best framework for an increasingly competitive marketplace, and accordingly introduced Bill C-62, in February, 1992. The Bill has passed first reading by Parliament, and has been subject to pre-study by the Senate which cumulated in a report suggesting several amendments. Of specific interest is that the Senate stated in its report that "forbearance lies at the heart of Bill C-62."<sup>15</sup>

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<sup>14</sup>Canadian Radio-television & Telecommunications Commission. Annual Report, CRTC The Year in Review 1990-1991. Ottawa: Minister of Supply and Services, 1991.

<sup>15</sup> The House of Commons of Canada. Bill C-62 "An Act respecting telecommunications". Tabled by the Minister of Communications 3rd Session, 34th Parliament, 40-41 Elizabeth II, 1991-92 First reading, February 27, 1992. Ottawa: Minister of Supply and Services Canada, 1992. AND

The Senate of Canada. "Report of the Standing Senate

## 1.2 POWER OF FORBEARANCE:

There is general public support for giving the CRTC the new power of forbearance as stipulated in Bill C-62, with some criteria as to its use<sup>16</sup>. In keeping with the government objective of greater reliance on market forces, this power would allow the Commission to suspend its regulation, in whole or in part, of any telecommunications service provided by a Canadian carrier. The CRTC would be able to exercise the new power only when it first determined that market forces are sufficient to protect the interest of users, and could resume regulation if the competitive market forces proved insufficient to do so. If the CRTC decides to use this new power, the carrier would be relieved of its duties in respect of rates and tariffs as determined by the Commission.

Interested parties indicated to the Standing Senate Committee that their full support would be required that the forbearance provision cover four explicit areas :

1. There should be a presumption in favour of forbearance where effective competition exists (already covered under Bill C-62 clause 39);
2. The CRTC should have the right to re-visit previous decisions on forbearance and re-regulate if necessary in order to allow regulation to be truly adaptive (already covered under Bill C-62 clause 39);
3. The Commission should only forbear where it has made a determination that, in addition to there being sufficient level of competition, there would be no dominant carrier in the market (not covered under Bill C-62 clause 39); and
4. The Commission should be allowed to grant forbearance for services other than competitive services if found to be in the public interest (not covered under Bill C-62 clause 39).<sup>17</sup>

If the CRTC is given the power of forbearance, it will likely first apply to non-dominant telecommunications suppliers. For example, in decision 92-12, the CRTC already gave an indication that it favours

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Committee on Transport and Communications on the Subject-matter of Bill C-62, An Act respecting telecommunications". 3rd Session, 34th Parliament June 22, 1992. Ottawa: Minister of Supply and Services, 1992.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

regulating the dominant telephone companies some what differently than their competitors until the competitors gain a large enough share of the market. The decision provides the Commission's rationale for this position.

In the same decision the CRTC, absent having the power of forbearance, did change some of the general rules governing the treatment of competitors and existing suppliers of public long-distance services (MTS/WATS). For example the CRTC: (1) relaxed the previous requirement that all competitive services must be priced to maximize the contribution to local services; (2) stated that the telephone companies would have a justifiable right to expect prompt action by the Commission on applications involving newly competitive services, and (3) established criteria for the granting of interim approval of applications filed by the telephone companies for long-distance services. It remains to be seen whether these measures will be sufficient in an increasingly competitive environment.

In Telecom Decision CRTC 86-5 the CRTC concluded that audited Phase III results would enable it to consider applications to eliminate the requirement to file tariffs for terminal equipment. More importantly it could eliminate or reduce the requirement to file detailed economic studies based on Phase II costing of new services used to support the approval of tariffs for new services. The CRTC reversed this decision after the Federal Court of Appeal found that the Railway Act does not give the CRTC the right to forbear from regulation. Parliament, by passing Bill C-62, would give the CRTC this new power, subject to certain conditions as to its use.

**INFORMATION AND THE ELECTRIC ENERGY MARKET:  
THE NEED FOR THE AVAILABILITY OF PRICE  
INFORMATION TO ENCOURAGE CONSERVATION<sup>1</sup>**

by

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**Introduction:** On average, a customer using utility services only has limited knowledge about the characteristics of the market in which the utility services are sold. Information necessary for making decisions about transactions involving the utilities and utility appliances are also often inadequate. This is contrary to an idealized market exchange which requires the buyers and the sellers to have full knowledge of the transaction-related data that are necessary for decision making. For example, buyers are expected to know the price and product characteristics offered by sellers. Sellers must be aware of product prices, wage rates, cost of inputs, interest rates, and other production related data, as well as information about the buyers.

An idealized model is often assumed because of its capability to yield optimal solutions. It is also often used as a benchmark against which real world markets and situations are measured. An example of an idealized model is perfect competition. The perfectly competitive system, by utilizing the information produced by prices, has the tendency to achieve efficient allocation of resources.<sup>2</sup>

However, this model differ from the structure of the market for electricity which, in most U.S. cities, has a natural monopolistic structure. In these natural monopoly markets, the economic and technical conditions of the market permit only one efficient enterprise.<sup>3</sup> In order to attain the efficiency goals of competition, and to avoid wasteful duplication in this markets, regulation is often used as a surrogate for competition.

As a real world example, the markets for electricity show a natural monopolistic structure in terms of the number of

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<sup>1</sup>The views in this paper are the author's and do not necessarily reflect those of the Public service Commission of the District of Columbia.

<sup>2</sup>See Nicholson, W., Intermediate Microeconomics and Its Application, 1979, pp. 497 - 520.

<sup>3</sup>See Greer, D., Industrial Organization and Public Policy, 1980, p. 485.

effective producers of electricity. However, the elements of competition are present in other forms. For example, residential customers have access to natural gas and other alternative sources of energy for cooking, space heating, and air conditioning. Thus, perfect or adequate knowledge, a condition of perfect competition, is still relevant because the price information would enable the customers to make cross market comparisons and choose the cheapest source of energy available to satisfy their needs. For many energy users, this information is even more valuable when they have to decide whether or not to install an energy efficient appliance, a transaction that involves a larger initial sunk cost.

The relevance of the elements of perfect competition especially to a natural monopolistic market is expressed in their use as guides for allocating energy resources. The efficiency elements of perfect competition are absent because of the structural differences between the two types of markets. In perfect competition there are alternative sellers such that information that is not available from one firm is provided by others. Thus, in such a setting, it is a good strategy for sellers to make the buyers adequately informed about their product and price since there are no differential costs to buyers for switching their purchase to other sellers.<sup>4</sup>

With a natural monopoly, a structure observed in most electricity markets in the United States, transaction costs are present and are higher. An example of this cost is the cost to buyers of acquiring the relevant information in an exchange. In fact, the buyer's cost is greater and the seller often dictates and controls the terms of the exchange. As a result, an asymmetry is introduced when the greater transaction costs situation faced by buyers improves the sellers' bargaining position. "Asymmetric information," sometimes termed "Asymmetry of information" exists when a trading group has access to relevant information that is not available to other individuals participating in the same transaction. With such asymmetry, purchasers are either uninformed or ill-informed, and thus often make incorrect decisions about a transaction or pay more than they would have if they had the same information as the seller.<sup>5</sup>

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<sup>4</sup>This conclusion is based on the premise that this is a zero-transaction cost environment. In reality, there are some transaction costs. However, the relevant issue at this instant is that transaction costs (e.g. switching costs) differ in one market type relative to another. As a general rule, competitive structures tend to cause lower switching costs than monopolies.

<sup>5</sup>For more discussion on the economics of information see, Akerloff, G., Quarterly Journal of Economics, 1970, 84:488-500; Grossman, S. and Stiglitz, J., American Economic Review, 1976, 66:246-253; and Rothschild, M., Journal of Political Economy, 1973, 81:1283-1308.



These private costs may transform into a substantial loss to the society. For example, when customer's willingness to purchase and pay is not exactly linked to costs because of the lack of information, the right levels of demand are not revealed. As a result, producers wrongly react (e.g. allocate resources inefficiently) by employing productive technologies that could be used elsewhere in a particular type of production. The opportunity cost of the misallocation of resources is that the quantity and quality of other socially beneficial goods are inadequate. If available at all, they will be too expensive, and so may be unaffordable.

**Significance of Price Information:** As indicated above, optimal decision by customers require knowledge of price. However, only in about half of the regulatory jurisdictions in the United States is the actual rate schedule (i.e. the price of electricity) shown on the monthly billing statements for residential customers. This implies that decisions about utility related transactions made by many customers in the nation are sub-optimal. As a result, resources are wasted, and transaction costs are high.

Ideally, paramount to any transaction is the ascertainment of the market price. Explicit display of the market price minimizes ignorance about the transaction and reduces the expected cost to buyers of making uninformed decisions. Hence, in the case of the market for electricity, the rate structure information is valuable. The value of displaying the rate information is measured by the amount by which being informed reduces the expected cost of transaction to the buyers (e.g. in terms of the monthly savings on the bill) and to the society (e.g. in terms of the efficient use of energy resources).

The implication in terms of the gain or loss to the society is even more important when there is a need to design rates that would discourage energy consumption and promote energy conservation. To reiterate, the information transmitted through price and non-price signals assists the customers in avoiding wrong decisions regarding the purchase of electricity. These signals give the customers the incentive to change their behavior and reduce energy usage when cost savings are apparent.

In addition, the reduction in energy consumption induced by the implied savings is crucial because it reduces the need by electric utilities to build new generating plants to meet customer requirements. Therefore, cost-based rate designs, which are practiced in some parts of the nation, should complement the market requirement for price information. Differential rates alone will not discourage usage when the energy is most costly to produce (e.g. during summer months). The rates, once designed, must be revealed to customers to achieve their purpose.

A similar sentiment was expressed during the District of Columbia Formal Case No. 905 by PEPCO witness Mayberry:

By setting the highest prices in the period of peak demand in the summer, when it is most costly to produce electricity, customers are encouraged to reduce consumption when cost savings, both of capacity and energy, are greatest.<sup>6</sup>

PEPCO's intent is to design rate schedules that send proper price signals about actual energy costs to customers and also encourage conservation. However, the inducement to conserve energy and the cost savings implied may not be achieved if the appropriate price signals are not revealed to the customers on their monthly bills. Without the right signals, electric utility customers may be unable to make the correct decisions concerning energy consumption and implementation of energy efficiency and conservation measures.

A further argument can be proposed. According to economist Alfred Kahn,<sup>7</sup> the efficient allocation of resources, which is the premise upon which the cost-driven rate design proposal is based, requires setting rates that are consistent with the true costs of providing the service. However, this principle must not conflict with the other important market condition which requires effective knowledge by buyers and sellers. Cost driven rates will not achieve effective conservation unless they are fully known to the customers.

Even if the rate reflects marginal costs, and is capable of transmitting proper signals, its value would be diminished and the desired efficiency goal would not be achieved when the appropriate rate structure is not available at the key decision making times such as when a bill is paid by the customers and at the start of a new billing cycle. This proposal is even more essential for transactions involving the sale and use of electric energy for the following reason. Unlike other types of products (e.g. shoes) which can be returned if the qualities were inadequate or the quantities were excessive electric energy, once used, cannot be returned to the utility company for any reason. Customers use it first, and then pay for it later. The only recourse a customer may have in this case is if a billing error is made by the company. Problems regarding quality and quantity can only be corrected for future usage, not on prior usage. Therefore, the utility customers must be fully, and not partially, informed about the actual rates to ensure the desired consumption behavior and encourage conservation.

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<sup>6</sup>The Potomac Electric Power Company (PEPCO) is the supplier of electricity in the District of Columbia.

<sup>7</sup>Alfred Kahn, Economics of Regulation, (1988), p.65.

An intermediate implication is that displaying the actual rate structure on residential customer's bills impacts the accurate estimation of the price elasticity of demand and its use for rate design purposes and forecasting future energy demand. Price elasticity of demand is a measure of consumer behavior, e.g., the responsiveness of quantity demanded (i.e., consumption) to changes in price. It presumes therefore the consumer is aware of the price and decides how much to consume with this factor in mind. When the consumer does not know the price (actual rate), then the consumption behavior may not be appropriate and any price elasticity of demand measure based on such quantity demanded would be incorrect.

For example, there is evidence in the literature that the price elasticity estimates are not reliable. One of the reasons it may be difficult to obtain accurate elasticity measures is because of the absence of a linkage in the customer's mind between the actual prices they are paying and the amount of electricity they are consuming.

A complement to the rate structure information that would be equally valuable to customers purchasing electric energy is the next meter reading date. Revealing the date of the next meter reading will enable the utility's customers to ascertain the accuracy of the meter readings. Combined with information about the rate structure under which the service is being rendered, the customer is assisted in checking the accuracy of the energy charge presented on the bill.

In addition, the customer is assisted in ascertaining the actual billing month which is often confused with the calendar month. The ascertainment of the actual billing cycle reduces confusion by enabling the customers to plan the inception of their conservation efforts to coincide with the beginning of a billing cycle. As a result, the true impact of the conservation programs will be known even though meters may not be read on the scheduled date.<sup>8</sup> A one day differential should not create any significant problem relative to the benefits derived from this information.

#### Practicality of Displaying the Rate

Structure, Average versus Actual Rate: A survey of all regulatory commissions in the United States shows that several utilities display detailed rate information (including the rate schedule) on the monthly bills for residential customers.<sup>9</sup> The survey findings are summarized in Figure 1 which contains a pie chart

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<sup>8</sup>Usually, meters are read one day prior or one day after the scheduled meter reading date.

<sup>9</sup>The survey was conducted by telephone in January/February, 1992.

showing the proportion of states responding either "Yes" or "No" to the following survey question(s):

Do utilities in your state include on the monthly bill the rate structure under which service is being rendered?

If the response was a "Yes,"

Is this a statutory requirement by your Commission?

Utilities in about half the states provide rate structures on the monthly bills for residential service. More specifically, out of the fifty states and the District of Columbia, twenty-one (41%) responded "Yes, required by Commission;" four (8%) responded "Yes, but not required by Commission;" and twenty-four (47%) answered "No, not required by Commission" to the survey questions. Two states (4%), California and West Virginia, did not respond to the survey requests.

The survey also gathered data on the types of rate structures for electric utilities across the United States. Out of the 19 states providing their billing samples from which these data were compiled, twelve (63%) use flat rates; five (26%) use the inverted rates; one (5%) has declining rates; and one (5%) also has time of use rates. That is, about 37% of the states use at least a form of non-flat rates (inverted, declining, time of use) for which the display of actual rate structure is important to transmit proper price information. In these cases, surrogates (e.g. average rates) cannot be used to represent the actual rates.

The average rate information is not appropriate, especially when a customer faces an inverted rate structure, for two reasons. First, it provides the customers with a misleading and false price signal. That is, it suggests every kilowatt hour of energy is being billed at the same price. When the rate structure is inverted or declining, this is not the case. For example, in DC the residential rate structure is inverted; that is a kwh below the 400 kwh level is billed at one rate; above 400 kwh is billed at a much higher rate. Thus, use of average rate information on bills would not reveal to customers the proper cost of the energy they use, nor would it achieve the conservation incentive.

However, the average rate information may be used in some limited cases. The type of rate information that gives the proper signals depends on the rate schedule under which service is being provided. For example, if a customer faces a flat rate schedule the average rate per kwh is equal to the actual rate per kwh at the point of usage along the rate block, and so average rates provide appropriate signals in that circumstance. Under a non-flat rate structure (e.g., the inverted block structure) the average rate will not equal the actual rate at a given point of

usage. This difference is very crucial from a conservation standpoint.

**The Inverted Rate Structure in DC: An Example:** To further highlight the difference between the rate structure discussed above a graphical illustration is presented in Figure 2 which shows the average and actual cost per kwh for a residential customer in DC facing an inverted rate structure. As expected from a theoretical reasoning, the average rate line diverges from the actual rate line because of the variations in rates across the rate blocks.

The chart shows only two of the three rate blocks (the second and the tail blocks) of the inverted rate schedule. The first rate block has been omitted under the assumption that few customers use less than thirty kilowatt hours per month. In this graph, the average cost is represented by a U-shaped curve, which falls as energy consumption increases and then rises continuously as energy exceeds 400 kilowatt hours. This curve rises faster in the summer than in the winter, and the area between the two average cost curves reflect the 2.587 cents per kwh for seasonal differential due to the peak in energy demand in the summer.

The actual rate schedule is represented by an increasing step function. That is, a series of horizontal lines drawn at different rates and spanning different usage ranges. These steps which rise as energy usage exceeds 400 kwh represents a sudden rate change at that point. The steps are higher for the summer months than the winter months reflecting the peak in energy demand occurring in the summer. As stated above, the higher rate is expected to discourage customers from using too much energy at the time when it is most costly to produce.

There are four implications of the difference in the shapes of the two functions shown in Figure 2. First, as energy usage increases from 31 kwh, the average rate continues to fall even past the 400 kwh level when the actual rate has increased by a substantial amount. That is, the customers are not immediately aware of the rate change; this indicates a lag created by the lack of complete and timely price information. The summer rate change, for example, is reflected in the June bill for usage in the May billing month. However, at this time the customer is unaware of the higher incremental rate and continues to use energy as if the lower winter rates were still in effect. Thus a substantial amount of energy resources could be saved if customers were appropriately notified, ex ante, of the proposed seasonal rate change.<sup>10</sup>

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<sup>10</sup>This suggestion is expected to complement the earlier proposal that the actual rate structure be displayed on monthly billing statements (the thrust of this paper) to provide proper price signals and encourage conservation.

Without the proper information the customer is left with the false perception that the rate he/she pays is lower than the actual rate, especially in the first summer billing month. In most cases, residential customers only feel the impact of the summer rate change with at least one month lag. Instead of possibly cutting energy consumption, had the customer received the proper signals, more energy is used because of false information.

Second, the three points on the average rate curves marked A, B, C in Figure 2 have the same average costs, but correspond to different total costs as measured by the area under the curves. To reiterate, this total cost differential for the same average rate of 6 cents per kwh is due not only to differences in kwh usage, but also to the rate change as usage exceeds 400 kwh, and to the seasonal rate block differential. Thus, approximating the actual rate structure with the average rate conceals and understates the true costs to customers of the energy they use.

Third, consider the two pairs of points D and F, E and G in Figure 2 which correspond to the same energy usage but yield different total costs. The costs are measured by the area bounded by the pair of points (D&F, E&G) under the step function. The substantial difference in this area from the area bounded under the average rate curve in the same region shows that the costs approximated by the average rate are less than the true energy costs to the customers (e.g. the area bounded by D&F, E&G). The real costs can only be revealed to customers by the actual rate schedule, and not by the average rate. Thus, the contemporaneous average rate does not produce the proper signal to induce the customer's conservation efforts.

The fourth implication is best presented with a different illustration in Figure 3. Suppose a rate change at 400 kwh is not necessary, and the horizontal line at 4.677 cents/kwh is extended by a dashed line. The area above the dashed line is the cost savings to the customer (1) if there were no rate differentials after 400 kwh usage (across rate blocks), or (2) if a rate block differential occurs but customers are able to maintain energy usage below 400 kwh level due to conservation efforts. The average rate information conceals the large jump in costs at 400 kwh level and makes it appear insignificant to the customer. This jump in cost across rate blocks is larger in the summer than in the winter for the reasons explained above.

Regarding (2) above, it is rare for average consumption to fall below the 400 kwh level. Examples of the actual average usage patterns (in 1991) of DC's basic residential customers, residential water heating customers, and residential water and space heating customers are shown in Figures 4, 5, 6,

respectively. The actual usage patterns are marked by interior labels on the graphs. Asterisks (\*) represent energy consumption in the summer, and pluses (+) represent energy consumption in the winter.<sup>11</sup>

The implication of this observation is that actual consumption often occurs in the tail block where energy cost per kwh is highest.<sup>12</sup> This observation is further reinforced by the proportions of monthly bills contributed by energy consumption within the different rate blocks of the inverted rate schedule. These data are compiled for basic residential customers, residential water heating customers, and residential water and space heating customers in Tables 1, 2, 3, respectively. The data for the summer months are shown in the shaded row to highlight the impacts of the seasonal rate differential.

These tables reveal two interesting inferences. First, the column labelled "Block 3" contains the tail block energy consumption as a percentage of the monthly bills. These data show that for the residential customers the largest proportion of the total bill for the summer months is incurred due to the tail block energy usage. This assertion holds also for residential water heating customers, and for the residential water and space heating customers (for both the summer and winter billing months). Thus, a great amount of resources could be saved if customers have the proper price signals and elicit effort to avoid usage in the tail block.

The second inference is derived from Blocks 3a and 3b which are produced by splitting the tail block (Block 3) to explain the effects of the rate differentials. Block 3b is the proportion of total cost the tail-block energy represents if billed at the second block's rate. Block 3a represents the proportion of the total bill that would be saved if consumption in the tail block were avoided (i.e. if the customer's usage does not exceed 400 kwh per month). The amount of savings depends on the type of customer and the billing month. For example, the cost saving is highest for the all-electric customers (32.52%) in February, 1991 and lowest for the regular residential customers (3.61%) in May, 1991. Such cost avoidance can only be induced if the detailed rate information which reveals the true cost of the tail block kwh is known to the customers.

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<sup>11</sup>The data source is Formal Case No. 912, PEPCO (E)-6, page 1 of 19.

<sup>12</sup>The tail block charge has been changed (from 9.698 cents per kwh to 10.781 cents per kwh in the summer and from 7.111 cents per kwh to 9.698 cents per kwh in the winter) since the draft of this paper was written.

**Conclusion:** This paper has demonstrated that accurate price information (e.g. the rate schedule) is paramount for optimal decision making about transactions in the electric energy market. That is, explicit display of such transaction-related information, especially resulting in ascertaining the market price, eliminates ignorance about the transaction and reduces the expected (transaction) costs to buyers of making uninformed decisions. As a result, cost managing behavior by electric energy users is induced, reductions in wasteful energy consumption and resources is encouraged, and the need by electric utilities to build new generating plants to meet customer requirements is reduced.



Figure 1:

# SURVEY OF BILLING FORMATS ACROSS UNITED STATES Does Applicable Rate Schedule Appear on Monthly Bills?

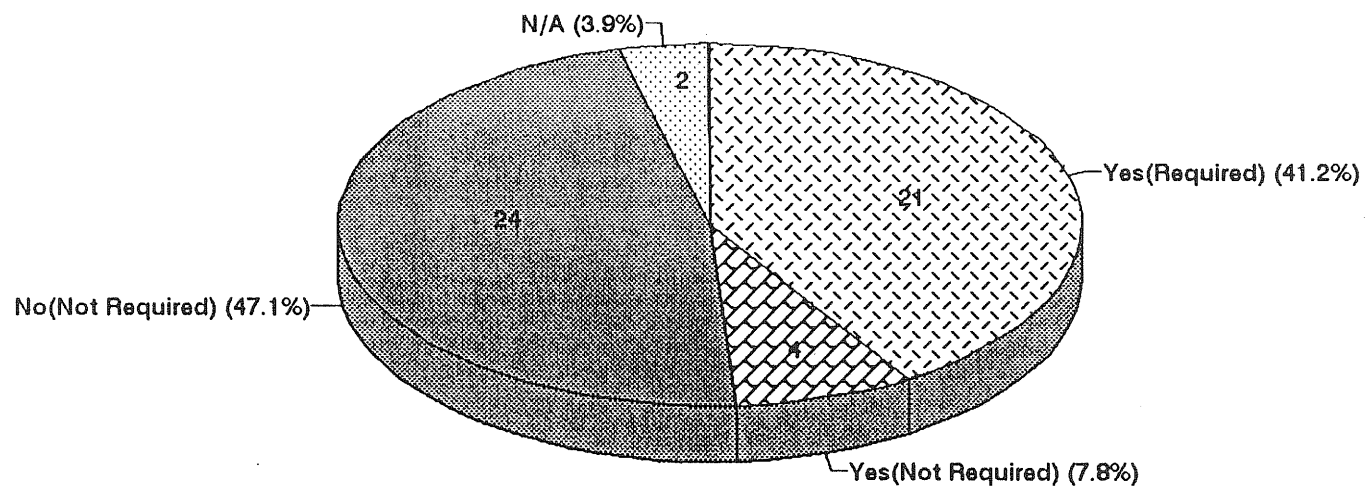
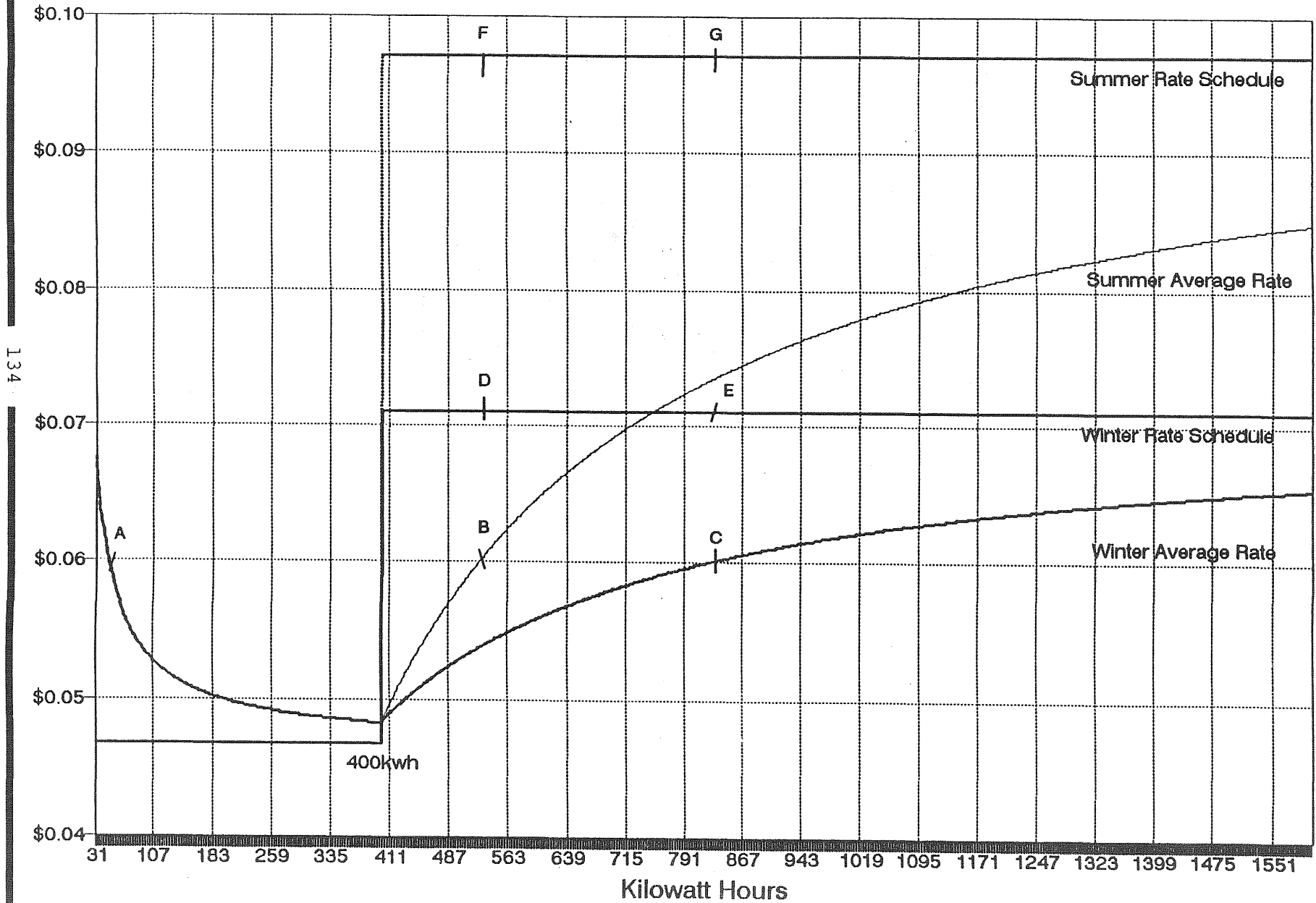


Figure 2:

### Average vs. Actual Rates Comparison Illustration of Inverted Rate Schedule



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Figure 3:

### Average vs. Actual Rates Comparison Illustration of Inverted Rate Schedule

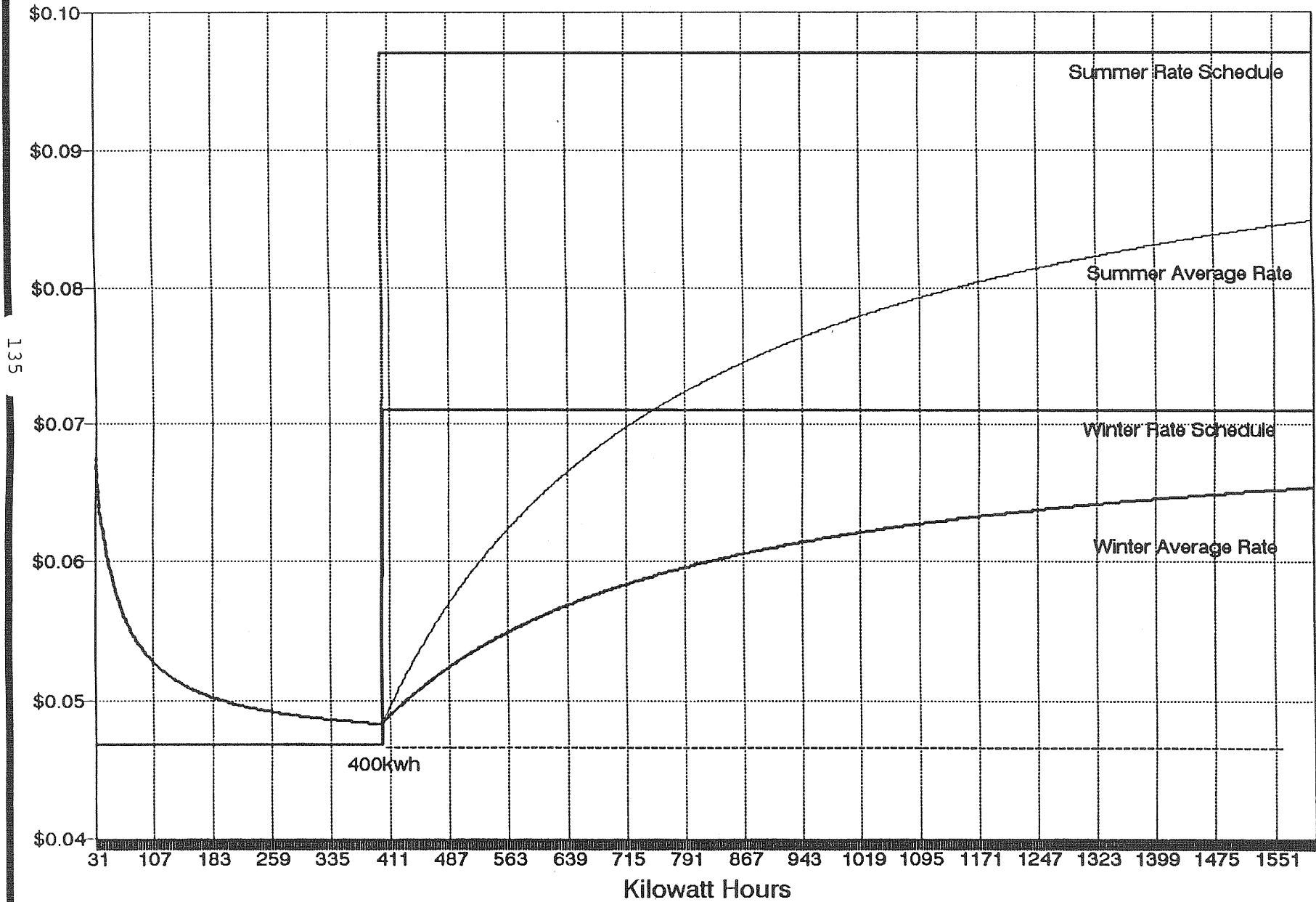
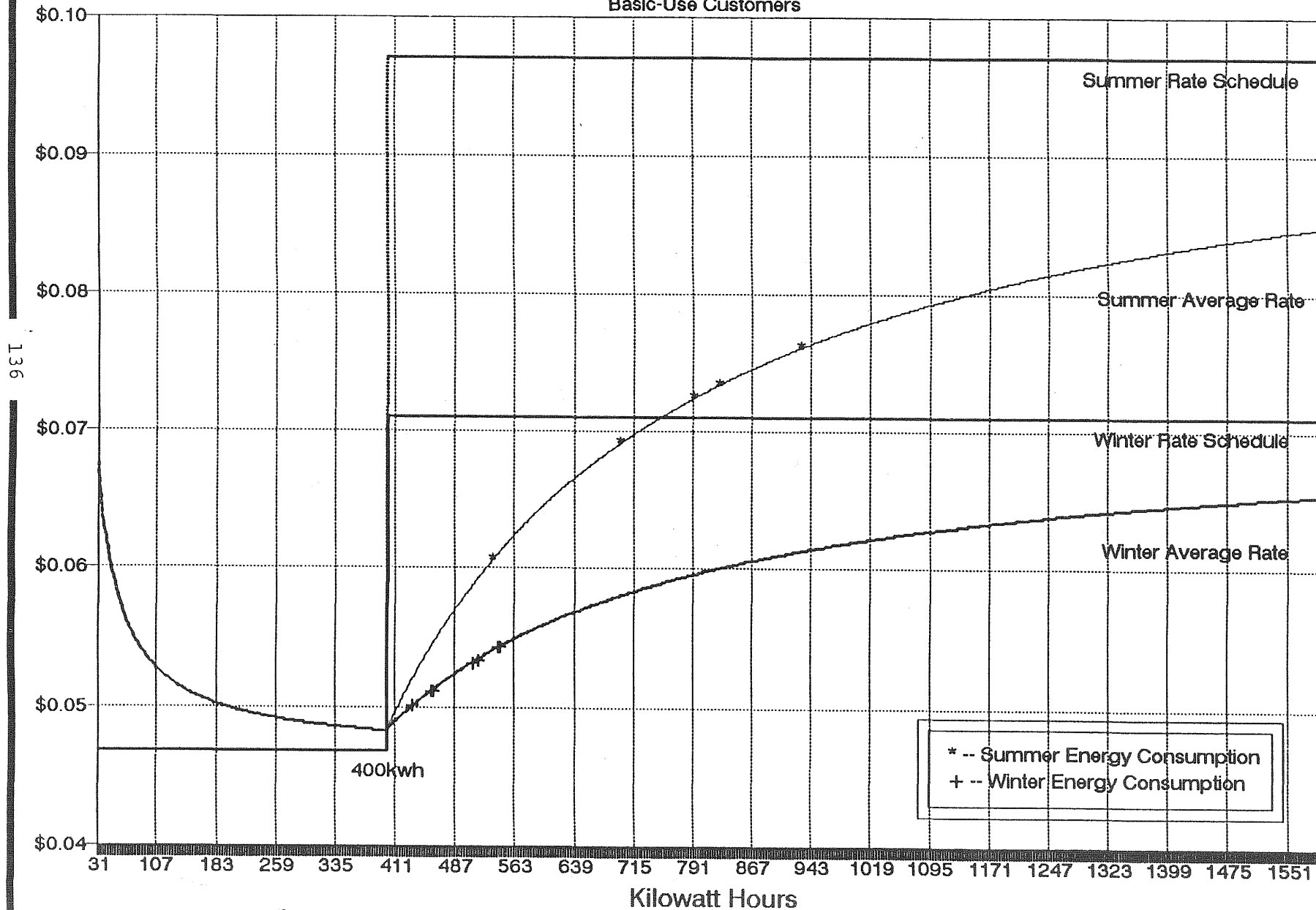


Figure 4:

### Average vs. Actual Rates Comparison Illustration of Inverted Rate Schedule

Basic-Use Customers



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\* -- Summer Energy Consumption  
+ -- Winter Energy Consumption

Figure 5:

### Average vs. Actual Rates Comparison Illustration of Inverted Rate Schedule

Basic-Use Customers with Water Heating

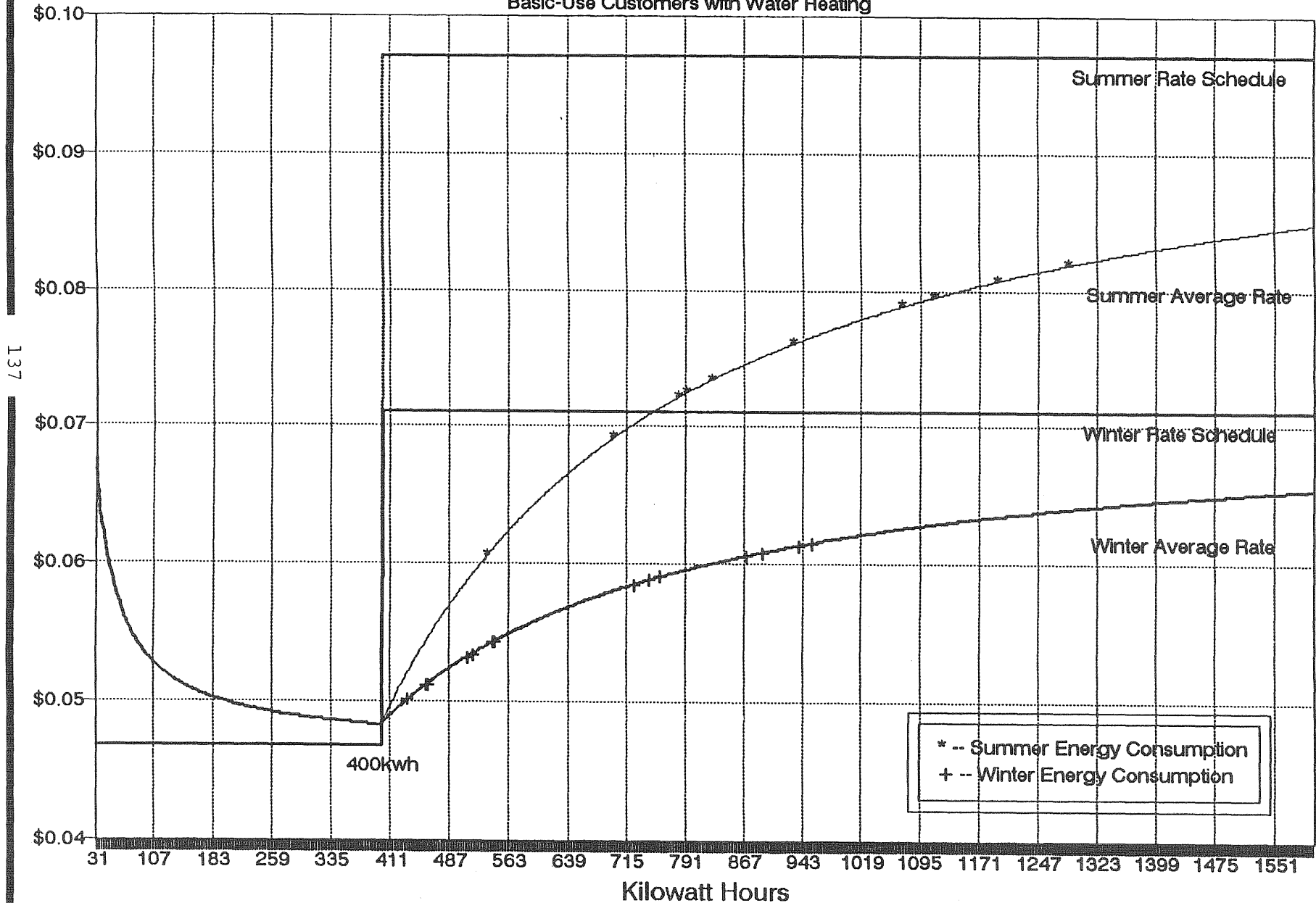


Figure 6:

### Average vs. Actual Rates Comparison Illustration of Inverted Rate Schedule

Basic-Use Customers with Water and Space Heating

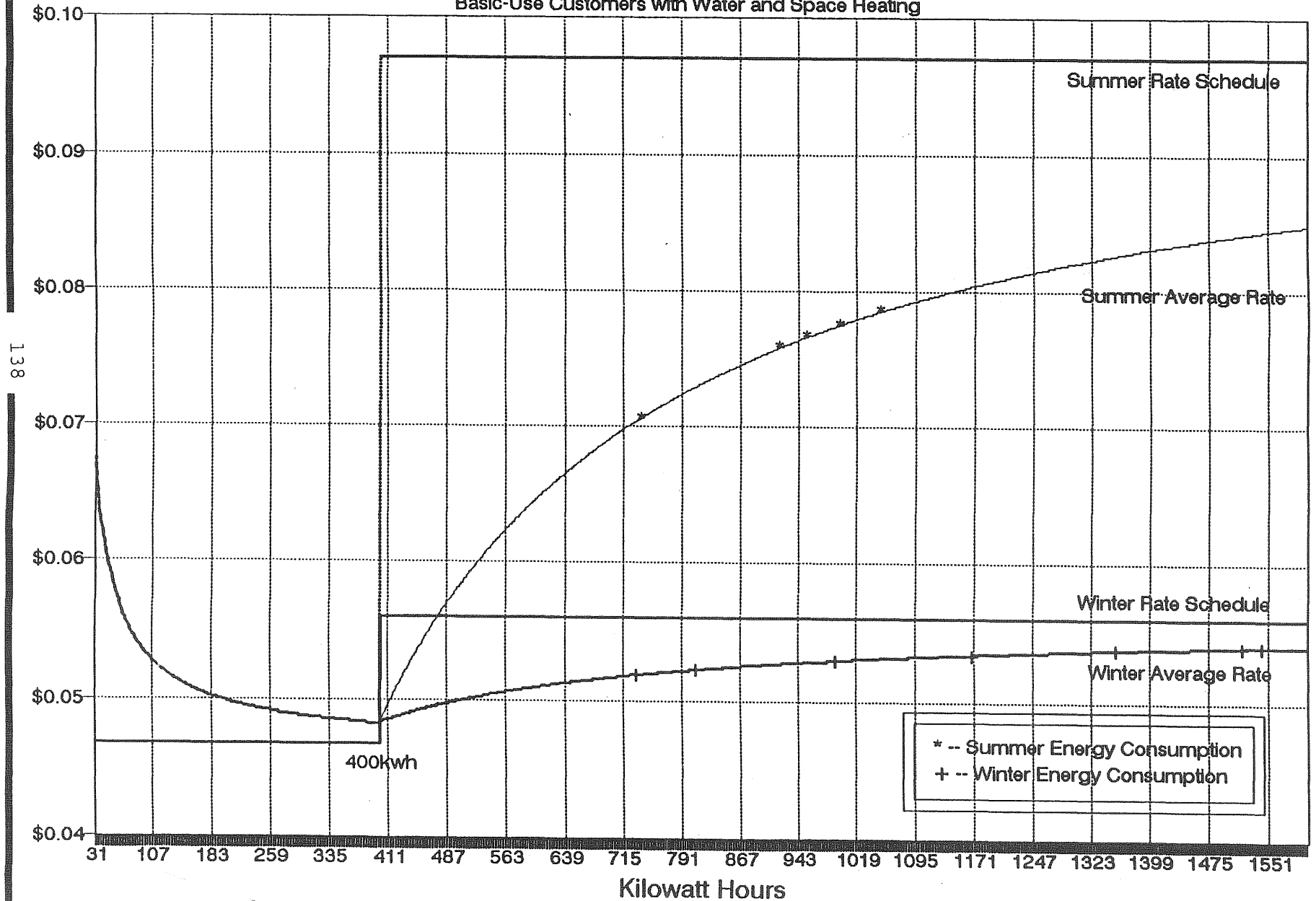


Table 1  
Residential Monthly Bill  
Basic-Use Customers

Month	Average kwh*	Amount of Bill (\$)*	Percent of Bill Within Rate Blocks					
			Block 1	Block 2	Block 3	Other**	Block 3a	Block 3b
January	542	30.17	6.79%	57.35%	33.46%	2.39%	11.45%	22.01%
February	541	30.10	6.81%	57.49%	33.31%	2.40%	11.40%	21.91%
March	508	27.71	7.40%	62.45%	27.71%	2.44%	9.49%	18.23%
April	457	24.02	8.54%	72.05%	16.88%	2.54%	5.78%	11.10%
May	433	22.28	9.20%	77.67%	10.53%	2.59%	3.61%	6.93%
June	697	49.09	4.18%	35.25%	58.68%	1.89%	30.38%	28.30%
July	823	61.48	3.33%	28.15%	66.73%	1.78%	34.55%	32.18%
August	928	71.80	2.86%	24.10%	71.32%	1.72%	36.92%	34.39%
September	790	58.23	3.52%	29.72%	64.95%	1.81%	33.63%	31.32%
October	534	33.06	6.20%	52.34%	39.31%	2.15%	20.35%	18.96%
November	456	23.95	8.56%	72.27%	16.63%	2.54%	5.69%	10.94%
December	515	28.22	7.26%	61.32%	28.98%	2.43%	9.92%	19.06%

Key:

\* -- Data Source = Formal Case No. 912, PEPCO (E)-6, page 1 of 19.

\*\* -- Other includes charges for annual fuel rate adjustment at \$0.0013333 per kWh.

Table 2  
Residential Monthly Bill  
Basic-Use Customers With Water Heating

Month	Average kwh*	Amount of Bill (\$)*	Percent of Bill Within Rate Blocks					
			Block 1	Block 2	Block 3	Other**	Block 3a	Block 3b
January	953	59.95	3.42%	28.87%	65.60%	2.12%	22.45%	43.14%
February	935	58.65	3.50%	29.51%	64.87%	2.13%	22.20%	42.67%
March	888	55.24	3.71%	31.33%	62.82%	2.14%	21.50%	41.32%
April	756	45.68	4.49%	37.88%	55.42%	2.21%	18.97%	36.45%
May	724	43.36	4.73%	39.91%	53.14%	2.23%	18.19%	34.95%
June	1070	85.76	2.39%	20.18%	75.77%	1.66%	39.23%	36.54%
July	1192	97.75	2.10%	17.70%	78.57%	1.63%	40.68%	37.89%
August	1285	106.89	1.92%	16.19%	80.29%	1.60%	41.57%	38.72%
September	1111	89.79	2.28%	19.27%	76.79%	1.65%	39.76%	37.04%
October	780	57.25	3.58%	30.23%	64.37%	1.82%	33.33%	31.05%
November	744	44.81	4.58%	38.62%	54.59%	2.21%	18.69%	35.91%
December	868	53.79	3.81%	32.17%	61.87%	2.15%	21.18%	40.69%

Key:

\* -- Data Source = Formal Case No. 912, PEPCO (E)-6, page 1 of 19.

\*\* -- Other includes charges for annual fuel rate adjustment at \$0.0013333 per kWh.



Table 3  
Residential Monthly Bill  
Basic-Use Customers With Water Heating and Space Heating

Month	Average kwh*	Amount of Bill (\$)*	Percent of Bill Within Rate Blocks					
			Block 1	Block 2	Block 3	Other**	Block 3a	Block 3b
January	1517	84.05	2.44%	20.59%	74.57%	2.41%	12.41%	62.15%
February	1543	85.55	2.40%	20.23%	74.97%	2.40%	12.48%	62.49%
March	1353	74.63	2.75%	23.19%	71.65%	2.42%	11.93%	59.72%
April	989	53.72	3.82%	32.21%	61.52%	2.45%	10.24%	51.28%
May	730	38.84	5.28%	44.55%	47.67%	2.51%	7.93%	39.73%
June	916	70.62	2.90%	24.50%	70.86%	1.73%	36.69%	34.17%
July	995	78.39	2.62%	22.08%	73.62%	1.69%	38.11%	35.50%
August	1048	83.60	2.45%	20.70%	75.18%	1.67%	38.92%	36.25%
September	952	74.16	2.76%	23.34%	72.19%	1.71%	37.37%	34.81%
October	737	53.02	3.87%	32.64%	61.64%	1.85%	31.91%	29.73%
November	807	43.27	4.74%	40.00%	52.78%	2.49%	8.79%	43.99%
December	1167	63.95	3.21%	27.06%	67.30%	2.43%	11.20%	56.10%

Key:

\* -- Data Source = Formal Case No. 912, PEPCO (E)-6, page 1 of 19.

\*\* -- Other includes charges for annual fuel rate adjustment at \$0.0013333 per kWh.



What is Competition and Why Do We Need It  
in Regulated Energy Service Markets:  
Some Sociological Insights on the  
Meanings of Competition and Their  
Consequences<sup>1</sup>

By

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**Abstract**

During recent times debate about the notion that "competition" should be incorporated into regulated energy production and delivery, or its existing role expanded, has become commonplace, involving a wide variety of participants in ever more intense and far reaching discussion. The assertion that "competition" has some positive contribution to make to the provision of these services is at the heart of this debate. This paper is a sociological analysis of "competition" as a form of knowledge, seeking to identify the social causes of that knowledge of "competition" which drives this debate, as well as the relationship of this knowledge to knowledge of cooperation and planning. This paper also attempts to identify some of the potential consequences of this knowledge, as it is used in efforts to predict and control events in the world. All of this is done using the work of such contemporary sociologists of knowledge as Barry Barnes, David Bloor, Donald MacKenzie, Nico Stehr, Volker Meja, Michael Mulkey, Norbert Elias, etc. as a foundation. The study attempts no in depth or detailed exposition, however, but rather only aims to present some tentative hypotheses about the social bases underlying the creation, use, and revision of this knowledge, to provide a context for further study. Its primary purpose is to foster an expanded understanding of the social construction of such knowledge and the social interests which such constructions serve.

Introduction

One of the illusions under which many people today live is that knowledge of the physical world, and to a large extent even the social world, is unproblematic. Perhaps this illusion has always been a part of human life. That seems quite likely. However, it is equally likely that the influence of that notion has varied from place to place, and time to time. The "science" based culture of the modern western world certainly appears to be a high water mark for

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<sup>1</sup> The views and opinions of the author do not necessarily state or reflect the views, opinions, or policies of the Oklahoma Corporation Commission or its Commissioners.

the operation of this illusion.

In detail, this illusion, as it operates in today's "developed" world, says that knowledge of the physical world, and many parts of the social world, is "out there," waiting to be discovered. The only real barrier to such discovery is the application of the correct methodology in the search. And the primary reasons that this "correct" methodology is not identified and applied by humans in every instance is traced to the human frailties of "subjective bias" and irrationality.

The origins of the current version of this illusion are remote and complex. They have been examined in great detail by many investigators, including this author. These origins are not, however, the focus of this paper. Rather, this paper focuses on four related objectives. First, the paper attempts to present some of the basic ideas about knowledge contained in the contemporary European and American sociology of knowledge. These show knowledge to be a much more complex, dynamic, and nonlinear event than portrayed in the "unproblematic illusion." Second, the paper attempts to identify and briefly describe the two most important views of "competition knowledge" which currently exist in the energy production/delivery segment of American society. Third, the paper attempts to briefly illuminate some of the social origins of these various kinds of "competition knowledge," including some of the social interests which are served by the different forms of this knowledge, and the implicit theories of knowledge underlying this variety. Finally, the paper attempts to identify some of the existing and potential consequences for the world of the "living out," or use, of "competition knowledge" in America's energy subculture.

### The Sociology of Knowledge: Some Fundamentals

An appropriate sociology of knowledge must be naturalistic. That is to say, it must focus on the effort to examine, describe, and causally explain the social processes that are involved in the construction and use of whatever people take to be and use as knowledge. Sociologists exploring this area must make every effort to maintain this focus on the "perspective of the actor," if such study and reporting is to have relevance for other than the sociologist, alone. More than that, however, operating from this framework is essential if such analyses are to have any explanatory and predictive potential in practical policy application areas, such as that which is the focus of this paper.

All knowledge is, of necessity, knowledge of something, the object of knowledge. The construction of this knowledge is a social process, through and through. In this construction certain available cultural resources (words, theories, relationships, etc.) are actively combined in the effort to create knowledge which serves the ends of particular kinds of prediction and control. In other words,

predictive and control competence is the primary reason for the existence of this knowledge. And the form and focus of this competence is a direct consequence of the objectives, or interests, of some social group.

How then, one might ask, is knowledge related to "reality?" Knowledge cannot ever be the product of thought and imagination, unconnected to the real world. Its relationship to reality is much more complex than is generally assumed, however. Knowledge guides human attempts to manipulate and control the real world. Yet all knowledge is merely human theory about this world, since humans cannot contact this world apart from their knowledge of it. Knowledge is assumed to be consistent with this unknown and unknowable reality if it functions effectively in predicting and controlling real world events. Knowledge which fails this test is labeled false, and is either modified or rejected. This relationship is even more complex, however, because it is multilayered. Criteria of effective control and prediction are also knowledge, which must be tested in terms of other prediction/control criteria, which in turn must be similarly tested, etc.

All knowledge is then both instrumental in character, seeking prediction and control of real world events, and socially sustained, agreed social conventions. The form and focus of both aspects of knowledge reflect the objectives, or interests, of some social group. Knowledge is not, then, a necessity, dictated by the constraints of "rationality" or the "really" real world. Instead, knowledge is decided in social interaction. That is to say, it is negotiated in interaction by particular people, in particular places and times, seeking to serve particular instrumental interests. At its heart, then, knowledge is not abstract and general, but rather contextual and specific. That knowledge can, in practice, often be generalized does not change this.

There is another type of interest which knowledge serves, however, albeit at a subordinate level to the primary interest in prediction and control. This secondary interest is an interest in rationalization and persuasion. Ideologies are organized around this second interest. All knowledge may be sustained by either or both kinds of interest, and the process of knowledge construction is the same with either kind of interest. Often, however, the interest in rationalization and persuasion is concealed by disguising it as an interest in instrumental control, generally to facilitate the effectiveness of its functioning.

In his book *Knowledge and Social Imagery* David Bloor has described the form and objectives of a genuinely scientific sociology of knowledge, in what he calls the "strong programme." The four features of this "programme" are:

1. It would be causal, that is, concerned with the conditions which bring about belief or states of knowledge. Naturally there will be other types of causes apart from social ones which will cooperate

in bringing about belief.

2. It would be impartial with respect to truth and falsity, rationality or irrationality, success or failure. Both sides of these dichotomies will require explanation.
3. It would be symmetrical in its style of explanation. The same types of causes would explain, say, true and false beliefs.
4. It would be reflexive. In principle its patterns of explanation would have to be applicable to sociology itself. Like the requirement of symmetry this is a response to the need to seek for general explanations. It is an obvious requirement of principle because otherwise sociology would be a standing refutation of its own theories.<sup>2</sup>

Many and various objections have been raised concerning such a sociology of knowledge. Representative of these objections, and one which if answered adequately will help resolve many of the others, is the contention that viewing knowledge as "merely" social conventions makes knowledge arbitrary and endangers critical thought. First, knowledge as social conventions, as the product of human social involvement, is not arbitrary. Social conventions always involve real constraints, focused on social credibility and practical utility. Social conventions which do not work, in application, or which are inconsistent with other such conventions are always in danger of being pushed aside. Second, conceiving of knowledge as social conventions does not endanger critical thought. Rather, it places the functioning of such thought within a social framework. That is, it points out that the questioning of knowledge can only be done from the standpoint of other knowledge, which itself rests on alternative social conventions (standards). Critical thought is then, like all thought, the application of social conventions, and not of supra-social standards. Thought, in any form, is really not possible without social conventions. Social conventions constitute an essential foundation for all human thought (knowledge).

The contemporary sociology of knowledge presents us with a picture of human knowledge as a context-dependent, inherently fluid and imprecise, and communally sustained resource for human actions, focused on the human interests in prediction and control, and persuasion and rationalization. This picture is also one that denies most of the fundamental

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<sup>2</sup> David Bloor, *Knowledge and Social Imagery*, Routledge & Kegan Paul (London, 1976), 4-5.

premises which form the mainstream of modern western notions about knowledge. These include the fact/value distinction, stress on the objects of knowledge almost to the extent of excluding the active knowing subject, the view of the knower as an isolated individual without significant historical or social context, and an atomistic theory of validation which focuses on the comparison of isolated bits of knowledge with equally isolated fragments of reality.

### Social Origins of Knowledge

The topic of primary focus in this paper is the concept "competition," and such related concepts as cooperation and planning. The sociology of knowledge, as described above, hypothesizes that concepts, all concepts, derive their meaning not from any inherent logic in the concept itself, but rather from the way the concept is used in interaction between people. That is to say, the meaning of each and every concept is created and sustained by and through social groupings of people. When humans think about and create the meaning of any part of their conceptual knowledge, they do so by indirectly reflecting on and manipulating the social images and metaphors upon which society is based. There is nothing to indicate that any concept has a meaning which transcends the social context of its use.

This is generally neither a conscious nor a readily apparent event. It appears to be a necessary one, however, for several reasons. There appears to be a natural affinity between social models and conceptual thinking. Since thinking about the meaning of concepts, and about the nature of knowledge generally, is an obscure and detached enterprise, there is a profound feeling of the need for something familiar and concrete to make this process manageable and allow it to continue. This need is met by social images and metaphors, which provide the organizing principles around which conceptual thinking is structured. Furthermore, and in a more practical sense, conceptual thinking and its application requires established social conventions or institutions for its production, organization, sustenance, transmission, and distribution. This is certainly likely to build a close affinity in the human mind between conceptual knowledge and the social images and metaphors making up the model of society. These social images and metaphors are particularly important in providing a means to differentiate and distinguish between rival knowledge claims, especially in situations in which these claims are not compatible with one another. More will be said of this very important aspect of human knowledge later in this paper.

In both a general and very specific sense then, it may be said that the meaning of a concept is a reflection of the society in which the concept is used. Such a pronouncement has little substance, however, unless it is possible to suggest how this process might operate. The next job is

therefore to outline just such a suggestion.

Any society, or social grouping, is a very complex group of relationships. In fact it is much too complex, much too overwhelming, to be grasped directly by any person. Consequently, what is perceived and reflected on when we speak of society or a social group is really only a simplified model or image of that society or social grouping. We shall call this image or model a "social ideology."

As already indicated, like society or a social grouping knowledge as an element of human existence is much too complex and abstract a thing to grasp or reflect on directly. Attempting to do so usually only overwhelms and paralyzes the thought processes of the human making the attempt. Humans need what might be called a "hook" upon which to hold knowledge in order to focus on it and use it in their daily lives. That hook is a "social ideology." That is to say, the human uses the image of society available in the "social ideology" to construct and sustain the meaning of concepts, in order that he/she may use these concepts in the tasks which make up daily living. This is a necessary relationship, and appears to be operative in all human situations.

This relationship does not appear to function at an always consistent level of intensity, however. The creation and maintenance of conceptual meaning by reference to a "social ideology" appears to be much more active under conditions of threat. Such threat can take at least two forms. First, the physical and economic well being of groups may be differentially impacted by major technological or societal events, i.e., new power generation and use technologies, sectarian wars, natural disasters, etc. Ways of "explaining" such events and their impacts on the group are often necessary to the group's survival. Knowledge formation is certainly a part of this process. Second, groups in power wish to maintain their position, while often those groups outside this group, and particularly those outside who see their interests directly threatened, seek ways to diminish or destroy the position of the group holding power over them. Under such circumstances, the creation, maintenance, and use of conceptual knowledge is a very useful tool in this struggle. Depending on their relative positions in this conflict, groups will, as part of their overall effort to provide effective advocacy for their own interests, seek ways to bolster and expand the acceptance of their conceptual knowledge and/or mystify their conceptual knowledge in order to more fully insulate it from attack. More specific examples of this process in operation relative to the "competition dispute" currently taking place in the socio-economic analysis of energy-related public utility services are given below.

### Two Social Ideologies

At least since the 17th Century, two "social ideologies"



have dominated thought in western civilization. These are the "Enlightenment Ideology" and the "Romantic Ideology." These have coexisted, alternately the power of one waning while that of the other grew. It is the hypothesis of this paper that the current debate in the energy subculture of the United States about "competition" also reflects the force of these two ideologies.

The "Enlightenment Ideology" is typified by the image of the "social contract," as the basis for human relationships and the obligations involved therein. This ideology also includes as a basic tenet the notion of the "pre-social" state of humans. That is, humans are pictured as "individuals" who through mutual agreement form society for the common good of all involved. Society is then merely a collection of "individuals" whose essential nature is pre-social and not changed by inclusion within society. Humans are also pictured as "rational" creatures, seeking by the application of this rationality to enter into relationships which serve their own best interests. But humans are also assumed to have a set of "individual" desires and needs, primarily involved with the avoidance of pain and attainment of pleasure. Finally, humans are pictured as naturally possessing a body of inalienable rights, which are universal and an essential element of the "social contract" upon which society is founded. These rights include life, liberty, and property.

This ideology also displays a characteristic "style of thought." First, it is atomistic and individualistic. Collectivities of any sort are merely, and only, sets of individual units, whose basic nature is not changed by being a part of the collectivity. Second, there is a focus on the static rather than the dynamic in description and explanation. There is a tendency to subordinate historical or social contextual variation to the universal and timeless, to focus on what is thought to be unchanging, i.e., human rationality, human "inalienable rights," etc. Third, this approach is typified by "abstract deductionism." This means that there is a tendency to explain social phenomena or individual behavior by subsuming such under abstract general theories. Finally, because this ideology is frequently reform oriented, it often displays a moralizing or prescriptive approach toward individuals and society. The focus is, therefore, often placed on "fixing" society, on improving its functioning. The atomising, analytical tendencies of this ideology are often applied in this effort, to disrupt and break up existing connections within society, as a preliminary to constructing "better" ones.

The "Romantic Ideology" stands in noticeable contrast to the "Enlightenment Ideology." Natural rights, social contracts, and pre-social states of nature have no place in this ideology. Rather, humans are pictured as naturally social. Society is therefore the natural state for humans. Humans as essentially individuals, with individual natural rights which are inalienable, who by means of their rational

powers "negotiate" their way to society as an instrument to satisfy the needs and desires of each individual participating in that creation is rejected. This is replaced by the image of organic family unity. Within this family unity duties, obligations, rights, and authority are not distributed equally, but rather according to rank, generation, experience, and role. Similarly, justice in the family is not negotiated or established by contractual bargaining, but rather is based in an autocratic control which is demanding of the members of the family, but also is flexible and benevolent, gradually changing as the members change in experience, understanding, and responsibilities.

The "style of thought" associated with this ideology is also quite different from that of the "Enlightenment Ideology." First, it is not atomistic or individualistic. Collectivities are not viewed as merely sets of individual units. Rather collectivities are considered to have special characteristics of their own, which require and demand study if the ways such collectivities develop and are established are to be grasped. This also means that individuals cannot be fully understood without an understanding of the collectivities, the context, in which they are situated. Second, this emphasis on context leads to a tendency in this ideology to view the concrete and historical as more important than the timeless and universal. Human actions are always conditioned by the local context of their development and use, and thus are variable in form and content. Thirdly, this emphasis on the contextual nature of all human actions, leads to a stress on the concrete, particular case, as opposed to the effort of the "Enlightenment Ideology" to subsume particular cases under abstract, general laws. Finally, the tendency of the "Enlightenment Ideology" to break up established social networks in order to make a "better" society finds no place in the "Romantic Ideology." The latter ideology's stress on the indivisibility and naturalness of society, rather than the individual, leads to an emphasis on the inherent wholeness, intricacy, and interconnectedness of social practices. The form and structure of society evolves therefore from within the very relationships which are society. Values and perspectives emerge in this process, and there is generally no clear cut distinction between these and "facts." The organic wholeness of society always transcends such distinctions as fact/value, as these are established, evolve, and change within that whole.

#### The Use of the "Social Ideologies" in the Energy Subculture

Over the span of time since the 17th Century, the two "social ideologies" described above have been applied by many persons to explain, justify, and defend a wide variety of ways of thought and actions planned or taken. Some of these applications are clearly reflected in the current debate in this country on the meaning of "competition" in the

energy subculture. Two examples will help to make this clear.

The 18th Century confrontation between the proponents and opponents of the American and French Revolutions is certainly echoed in this debate. These revolutions, and particularly the one in France, were individualistic, rationalistic, egalitarian, and radically reformist. The social whole was broken, as long-standing institutional structures which articulated the relationships among the segments of society were destroyed, to be replaced by codes of law and scientifically arranged social structures. The natural rights of the individual were proclaimed as paramount and the only legitimate and assured basis for human society. Among these rights was the right to accumulate property. This right was bounded only by the individual's intelligence, willingness to work, and shrewdness.

In opposition to many elements of these revolutions were such thinkers as Edmund Burke. In response to the natural rights of individuals claimed by proponents of these revolutions, Burke declared that there is a natural right to be governed and constrained, and to live within a stable society. Furthermore, asserted Burke, reason is an insufficient basis for the creation or criticism of society. Rather society is, and must be, based on prejudice, not reason. Prejudice as the socially embodied wisdom of the society (social norms) is, unlike individual reason, both attuned to action and the source of continuity. Burke also finds fault with the notion that abstract rules or laws can explain or be used to govern human affairs. For example, because human liberties and restrictions do, and of necessity must, vary with time and circumstance they cannot ever be subsumed under the tenets of any such abstract law or rule.

Other opponents of the revolutions focused on such topics as the innate structure of society. According to one such opponent, Enlightenment thinking tends to break apart and distinguish, and in practice conceives of society as an atomized homogeneity. Romantic thought, on the other hand, tends to unify through metaphor, and in practice assumes the structural division of society. Enlightenment thinking also violates the most fundamental feature of society, that each element or part of society is in a state of intimate unity with the whole. Society is a single, living union, not a structure of individual parts which come and go as each chooses, as claimed by Enlightenment thinking. The tendency of Enlightenment thinking to distinguish private life from public life is thus rejected as both unnatural and inhuman.

These two social ideologies are also reflected in the history of economics, and much of this history has found its way into the current debate on "competition" in regulated energy markets. The advocates of laissez-faire and the classical economics of Adam Smith and David Ricardo certainly reflect the "Enlightenment Ideology." These thinkers asserted that the welfare of all is best served if each individual is left to pursue his/her own maximum enjoyment,

with each individual calculating for him/herself the gains and losses and risks associated with any course of action. These thinkers also, not suprisingly, did not see society as an organic whole, but rather as merely the sum of the actions of a group of individuals. In fact, a favorite metaphor used by these thinkers to describe the workings of society was the "rules of arithmetic." That is, the operations of society were subsumed under the general rules which were asserted to govern addition, subtraction, multiplication, and division.

Morality, as an element of human existence, is also defined in a way consistent with the larger picture presented by these thinkers. Morality is asserted to be merely the individual's manipulation of quantities of pleasure and pain. And since human manipulation rests on calculation, and calculation is merely the product of individual reasoning, morality is then an act of reason.

The central themes in such thinking are then reason, calculation, simplicity, and intelligibility. These themes later emerged as part of a full fledged political/economic ideology called "social Darwinism." This ideology elaborated the classical economists' emphasis on individual "competition" and combined it with theories which asserted the "natural" necessity for struggle and individual effort, and the importance of the survival of the fittest and the elimination of the weak and inefficient.

Many opposed the theories of laissez-faire and classical economics, and "social Darwinism." Among those opponents was the "historical school" of economics which developed on the European continent. This school replaced the abstract, universal economic theories of the classical economists with theories emphasizing the varying economic conditions of different times and places. These thinkers contended that economics should be a branch of history and sociology, focused on placing economic action in its social context.

A member of the "historical school," Wilhelm Roscher, outlined the basic ideas of the school as follows:

1. Political economy is a science which can only be explained in the closest relation to other social sciences, especially the history of jurisprudence, politics, and civilization.
2. A people is more than a mass of existing individuals, and an investigation of its economy cannot therefore be based upon a mere observation of present day economic relations.
3. In order to derive laws from the mass of phenomena, as many peoples as possible should be compared.
4. The historical method will be slow to praise or blame economic institutions.

These words indicate that the affinity between the

"historical school" of economics and the "Romantic Ideology" is quite strong.<sup>3</sup>

Those involved in the current debate on the meaning of and need for "competition" in the energy subculture have certainly borrowed from the above positions. Many themes from these prior applications of the Enlightenment and Romantic social ideologies are part of the present debate about the meaning of "competition" in the energy subculture of the United States.

At the most basic level is found the fundamental premises which structure the confrontation between these ideologies. This is the confrontation between, on the one hand, a focus on the system (society) as a unified whole, and the affects, both positive and negative, of human actions and other events on that system, and, on the other hand, a focus on selected elements or parts of that system (society), primarily with the intention to maximize some benefit or minimize some harm for those particular parts. Within the details of this division is located the basic distinctions about the meaning of "competition."

On the one hand, "competition" is seen as constituting the efforts of individual persons focused on the attempt to calculate through reasoning power the action or actions which will bring the greatest possible benefit and least possible cost to that individual, and in so doing will consequently bring the greatest benefit to all other members of the society. Within this perspective "competition" is viewed as a "catch-as-catch-can" game between individuals, all of whom are identical in basic rights and desires, with the objective of satisfying the individual's most basic desire, enhanced material well being. And the "natural" and necessary result of this game is that the material well being of all members of society is improved. Each individual is considered to have a "natural right" to engage in this "competition," and to have a natural desire to overcome or "best" other individuals. Furthermore, since "competition" is seen primarily as a relationship involving individual persons, it is asserted that such relationships hold a place separate in human existence from relationships more determined by outside forces (i.e., social pressures). One name often given this separate place is the "private sector."

On the other hand, "competition" is seen as an inseparable element of the larger society, focused on the struggle of that society with the surrounding environment to continue in existence and satisfy its ever emerging and changing needs. The form and substance of "competition" is

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<sup>3</sup> Wilhelm Roscher, *Outline of Lectures on Political Science according to the Historical Method*, as quoted in Lewis H. Haney, *History of Economic Thought*, The Macmillan Company (New York, 1949), 540.

thus a direct result of the current state and needs of the society as a whole, which "competition" serves. "Competition" is, therefore, not a "catch-as-catch-can" game between individuals, but rather is a group of actions carried out by members of a society whose roles in those actions reflect the currently existing structural division of rights and responsibilities of the members of that society. "competition" is not viewed as a "natural right" of each individual member of society, but instead is seen as a complex set of actions emerging from the evolution of society itself. Similarly, there is no place in this perspective for "competition" as individual efforts to overcome or "best" one another. Quite the contrary, in fact, "competition" is seen as arising from the basic metaphors and social images (i.e., stories, myths, etc.) upon which the society is based, and which serve to unite the members of the society in the struggle to preserve and defend the society. It is these which give "competition" its meaning, and which "competition" serves. Given what has already been said about this view of "competition," the utter absurdity of the notion that this perspective would support the idea of "competition" only existing in something like the "private sector" hardly requires comment.

Going beyond these basics further distinctions in the meanings for "competition" can be identified. In the first instance, "competition" is described as a "law of nature," a general law determining how "competition" looks and functions in all times and places. Furthermore, it is asserted that a fundamental element of this "competition" "law of nature" is that "competition" must be implemented through calculation and that calculation means quantitative (mathematical) analysis. A version of such analysis which is particularly popular today is economic cost/benefit analysis. This type of analysis is both materialistic and individualistic. Such analysis is one element of the overall quantitative analysis structure which is assumed to be a prime driver of "competition" between individuals. This structure is generally known by the names science and technology.

From the other perspective, "competition" is seen as a contextual event, changing in form, operation, and affects from one situation (time and place) to another. It is most certainly not a "law of nature." Furthermore, "competition" is not, and cannot be, implemented through the reasoning powers of the individual. Therefore, calculation, quantitative (mathematical) analysis, is not a fundamental base for "competition" actions. Rather, "competition" actions are actually meta-mathematical in their foundation. This means that these actions are far too complex to be adequately represented or explained by such simple premises and rules as those upon which mathematics rests. From this perspective, the flaws and inadequacies of economic cost/benefit analysis are both numerous and fundamental. Most particularly is noted that such analysis grossly oversimplifies the assessment of benefits and costs. Under no

circumstance could such analysis adequately represent or explain human "competition." Rather, "competition" must be assessed in terms of its negative and positive impacts on the entire society, defining negative and positive impacts as their meaning is determined within the society itself. Finally, this perspective rejects the notion that science and technology is the only or most important driver for "competition." Science and technology may certainly, in some circumstances serve as a driver for "competition." Fundamentally, however, it is the circumstantial needs of society which drive "competition." To the extent that science and technology are involved in those needs, science and technology can play a role in shaping "competition" and setting it in motion.

#### Energy Competition and the Two Social Ideologies: An Assessment

While there are certainly many shades to the meaning given to the concept of "competition" in the United States today, the focus of this paper is on the current debate about the meaning of that concept, and such related concepts as cooperation and planning, within the research and analysis activities which make-up the socio-economic examination of energy production, distribution, and use in this country. In this section of the paper an effort is made to present some preliminary assessment of and reaction to the strict application of these two "social ideologies" in the derivation of meanings for "competition." This assessment can then be used as a reference standard to place in perspective the ongoing debate in the U.S. energy subculture about the meaning of "competition," cooperation, and planning.

The first meaning of "competition" is drawn directly from the "Enlightenment" social ideology. Here "competition" means the struggle between individuals (both individual persons and individual business enterprises) to enhance their own material self-interests. It is, therefore, wholly a self-centered and selfish activity. Yet, it is asserted, only the unhindered pursuit of this selfish activity can assure the well being of society. Unhindered, such activity provides the best chance to assure that natural and human resources are efficiently used, that resource scarcity within society is overcome, and that the material "rewards" sought through this activity are properly allocated between the members of society. It is also asserted that such activity is the only means available to humans to counteract and overcome the establishment among humans of false and inefficient social arrangements.

The image of this "selfish" struggle rests on several other premises. First, this struggle is assumed to be a "natural," immutable law of nature. Opposing or attempting to circumvent it is, therefore, not only unnatural but also harmful to all humankind. This "law of nature" must be one

of the foundations of society, if society is to progress and survive. This is a distinctly linear view of "competition." It assumes that the same general law or principle can be used to explain "competition" in any human relationship, at any time or place.

Second, certain very clear assumptions about the nature of humans are a part of this meaning of "competition." At its most fundamental level human existence is asserted to consist of the individual person. This individual person is asserted to be naturally rational and free, and to use this rationality and freedom to pursue individual material self-interests. Moreover, the individual has an inalienable right to make this pursuit, as well as an inalienable right to remain free and "own" the material wealth the pursuit produces. Society is merely a derivative creation of these individuals, intended to enhance each individual's opportunities to successfully complete this pursuit. Society is then merely a rationally drawn contract between these individuals. The natural substance of the individuals is not changed by being a member of the society, and society is not intended to interfere with the individual's natural pursuit of material self-interest.

From the perspective of this "competition" then, the source of order in the world is the pursuit of material self-interest by each individual human. Each individual attempts to acquire and hold as much material wealth as possible. Following out this assertion the conclusion is that the orderliness of human existence increases as material wealth grows. Human progress, which is also identified as a natural law and right, is then equated with the amassing of greater and greater material abundance. Human progress and the orderliness of the world are thus linked, unbreakably and forever, in the pursuit of each individual human's material self-interest. The application of the human's natural rational powers to this endeavor has produced the tools to assure its realization, science and technology.

The other meaning of "competition" upon which this paper focuses is quite different from the first. Here "competition" is a struggle which takes place between the organic whole of society and its surrounding physical and biological environment, whose purpose it is to improve the well being of the societal whole. "Competition" is one element in the growth and protection of society, appropriate at some points to serve this purpose, not appropriate at others, and changing in form and focus depending on the particular role it is playing for the society at some specific time and place. The duties, obligations, and responsibilities this "competition" imposes on the members of the society also vary, based on the form and focus of the "competition" and the relative importance of member characteristics, as judged by the standards existing in the society. As with all else in human affairs the place of the individual society member in the conduct of "competition" is imbedded within and subsumed to the needs of the society.



This is always the natural state for humans.

This meaning of "competition" is not framed in the form of a "law of nature," as is the other view of "competition" presented above. This sort of "competition" is certainly assumed to be universal. However, the emphasis is placed on its being universal in the sense of this being the way humans live, rather than it being the expression of a natural law. "Competition" is an element of society, and society is the natural state for humans. However, the particular meaning given to "competition" and the form it takes, as well as the particular purposes it serves for the society are not static, but rather change from society to society and from time to time.

The view of the nature of humans imbedded in this meaning of "competition" is also very different from that in the first view of "competition." Humans are not, at the most fundamental level, isolated, human atoms which have inalienable individual rights and a natural rationality, and use the latter to "negotiate" society into existence in order to pursue the former. Rather, humans are naturally social, they always exist within society. The rights they have and much of the substance of their rational powers are shaped by this involvement. Similarly, the way humans judge themselves and one another, and the standards they apply in this process, grow from the foundations of societal involvement. This emergence is continual and dynamic.

The source of social order in this perspective on "competition" is the organic development of society as the first and only home for the humans. For humans society is primary and indivisible. "Competition" plays certain roles in this development. As with all other aspects of society, however, the form and focus of "competition's" place in this development reflects the society's particular, concrete historical circumstances. Society is then a dynamic context. That is, it is a continually emerging context for the actions of those humans within the society, with the form of the emergence, and thus the context, never consistent from one society to another. From this perspective then, social order has no single meaning and no single way for humans to live. General laws or principles are then, from this perspective, never sufficient to understand or explain the actions of particular persons in particular societies. This means that such general laws or principles cannot ever fully explain the working of a society, or be used to overcome or "fix" a society's deviations from the standards of these laws.

These are, of course, "ideal types" of the two meanings of "competition" found within the study of the development, distribution, and use of energy in the United States today. In actual situations persons mix and match various elements of these two images of "competition," depending on the relative importance and the variety of social interests and individual preferences those persons involved in a situation are attempting to protect and/or realize. This does not even preclude the simultaneous usage of contradictory elements of

the two views.

### Social Interests and "Competition Knowledge"

There are several general types of social interests which might play a role in the selection and use of the above described views about the meaning of "competition." With respect to the general interest in prediction and control, these include prediction/control of the form and substance of social relationships, of the rules of social encounters, of the outcome of social relationships, of who will be involved in social relationships, of the distribution of material resources, etc. In regard to the general interest in persuasion, these include persuading others to act in a particular way, persuading others that certain actions are appropriate and/or that certain other actions are inappropriate, persuading others not to intervene in certain ways and/or in certain areas of life, persuading others that certain categories of action are appropriate and/or other categories are inappropriate, etc. There is little or no research into these areas currently existing. In fact, one of the objectives of this paper is to help inspire such research. The paper will conclude, therefore, with a few thoughts on some of the specific social interests which might play a part in the selection and use of the cultural resources described above to define "competition" in regulated energy markets.

The first item to be noted is that there are many social groups who are involved in and affected by the operation of regulated energy markets. These include consumers of energy, producers of energy, state governments, the federal government, regulated public utilities, PURPA based "qualified facilities" (QFs), independent power producers, national and regional transporters and sellers of energy, various geographic regions of the country, organizations of "professional" experts and academics, etc. The interests of these various groups converge and diverge in very complex patterns, with conflicts and agreements ranging from very simple to very intricate.

I would state here several hypotheses concerning how the interests of certain of these groups relate to the view of "competition" taken by the group. The type of interest which is often mentioned first in such an analysis is economic interests. Although I choose not to focus on these here, I will suggest that the importance of such interests in shaping the views of a group are generally overestimated. However, research focused on the relationship between group wealth and the view of "competition" adopted by a group would still certainly seem worthwhile. In particular, I would suggest that such research not focus primarily on the relationship between the calculated economic interests of the "wealthy" and the view of "competition" supported by the "wealthy." The situation is much too complex for such simplistic approaches. Rather, it would seem more worthwhile

for such research to focus on such questions as the relationship between a group's view of "competition" and its interest in moving from one economic circumstance to another, or a group's perceived purposes for economic resources and the view of "competition" supported by that group.

There is, I believe, an affinity between power and the view of "competition" taken by a group. Groups in control of the "rules of the game" in an area of life have an interest in adopting the "Enlightenment" view of "competition." This view, if accepted by the out of power groups, tends to reduce the group cohesiveness of these out groups, thus hampering such groups in their efforts to effectively oppose the in power groups. This would be particularly effective if the internal structure of the in power groups is not based on this view of "competition," but rather on some variation of the "Romantic Ideology." On the other hand, the "Romantic" view of "competition" seems particularly well suited for the out of power groups, to aide in building group solidarity and highlighting the injustices of the "Enlightenment" view.

Over the last several years producers of energy, consumers of energy, and regulated public utilities seem to have fluxuated in their support for the two views of "competition." Producers have tended to support the "Enlightenment" view during periods when there were no really effective alternatives to the energy provided by these producers, either because such alternatives had not been developed or because such alternatives had been given little or no public exposure. When such alternatives seemed to become viable, however, producers have sought protection, generally through government actions.

Consumers of energy have tended to support the "Enlightenment" view, primarily, it seems, because that view provides them greater leverage in pitting energy producers against one another. This certainly improves the chances that the price of energy to consumers will at least remain static, but more importantly, it seems, consumers have supported this view because it reduces producer control of the energy relationship, while concurrently expanding consumer control of that relationship. In times of strong control of that relationship by other groups (e.g., producers, government, etc.), however, energy consumers have often voiced support for one or more of several variations of a "Romantic" view of "competition."

Regulated public utilities have varied in their adoption of the two views of "competition," according to the characteristics of the utility. These utility characteristics include size, regional location, number and size of QFs located (or attempting to locate) on the utility's system, whether or not the utility is located in an oil and/or gas producing region, etc. The exact relationship between these characteristics and the view of "competition" supported by public utilities is not clear, however.

A topic of particular importance in such research efforts involves threats to social knowledge or social

ideologies. In this regard the current threats in this country to the "Enlightenment Ideology" and the concept of "competition" deriving from it are particularly relevant. During most of the history of the United States the "Enlightenment" social ideology has dominated most major aspects of life in the country, including the way "competition" is defined. (It should be noted here that the "Romantic" social ideology has maintained a continually strong presence in the country, as well, although it has usually been in a subordinate position. In fact, the existing relationship between the two ideologies reaches back to at least the time of the "Federalist/Anti-Federalist" debates surrounding the establishment of the form for the newly created United States of America.) This domination has been particularly complete and forceful since the end of World War II. The "Romantic" social ideology has certainly existed, and in some instances flowered, in this country, but has seldom held long-term dominance over the "Enlightenment" view.

Many of the consequences of this extended dominance are now placing very intense pressure on the "Enlightenment Ideology." These consequences include environmental pollution, poverty, wars which seem purposeless, the decline of non-materialistic perspectives, a new and more dangerous form for crime, physical resource depletion, large scale inequity in material resources, the decline of social cohesiveness, etc. A central area for research would, then, seem to be the actions of groups whose interests are tied to the "Enlightenment Ideology" in response to these threats.

Research indicates that such responses generally take one or both of two forms, each an attempt to take the social ideology and its derivative social knowledge to a level which is beyond attack. One is to follow the often quoted advice, "the best defense is a good offense." Claims for the correctness and applicability of the ideology and its derivative knowledge are dramatically expanded, often along with the assertion that the problems which exist are the result of the incomplete or piecemeal acceptance and use of the standards called for by the ideology. Often people are admonished to "live better lives," which translates to the demand to organize all aspects of human life in accord with the ideology.

The other approach in responding to threats to a social ideology and its derivative knowledge is to attempt "mystification" of the ideology and the knowledge. This is an effort to demonstrate that both the sources of and purposes served by the ideology and its knowledge are creations from a realm of existence beyond the merely human. This realm might be religion, science, nature, or some other suprahuman reality. The advantages of making this transition are multiple. For example, it not only makes it more difficult to attack the ideology and its knowledge, but can also aide users of the ideology in attacking and overcoming the opposition of those supporting alternative ideologies.

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**PRIVACY AND THE FIRST AMENDMENT:  
TOWARD A UNIFYING THEORY FOR  
THE TWENTY-FIRST CENTURY**

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The emergence of an electronic media as the primary means of transmitting information in the United States, as the nation shifts from the industrial age to an information age, creates a major challenge for the courts and the law to devise a unifying theory for the first amendment freedom of speech and press, as well as the right to privacy of individuals. Our idea of freedom of speech and the press has been an elastic one, for which the Court has drawn analogies to existing forms of media in order to formulate rules for new media forms. The problem with this approach, as noted below, is that it is an *ad hoc* approach that fails to provide a unifying theory for freedom of the press and speech. The bounds of our freedoms are defined according to the media, not by its content,<sup>2</sup> or by some fundamental principle or set of principles. The emergence of the electronic media tends to blur the lines between different media forms, making rules based on the form of media obsolete.

An individual's right to privacy is also not universally accepted. One scholar, Lawrence Stone, suggested that modern ideas of privacy date back to the early rise of capitalism and the industrial revolution.<sup>3</sup> Yet, the right to privacy as we mean it here, the ability to control inflows and outflows of information about oneself goes back to primitive societies, in which the ability to withhold information about oneself is just as important as the ability to communicate information. Further, the withholding of information is itself a form of communication, establishing mutually acceptable bounds between two or more individuals.<sup>4</sup>

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<sup>1</sup> The views in this paper are the author's own and do not necessarily reflect those of The National Regulatory Research Institute, The Ohio State University, the National Association of Regulatory Utility Commissioners, or of any of the individual state public utility commissions.

<sup>2</sup> The United States Supreme Court has to a large extent avoided a "content-based" test.

<sup>3</sup> Lawrence Stone, *The Family, Sex, and Marriage in England 1500-1800* (1977), 259-260.

<sup>4</sup> Goffman, *Relations in Public: Microstudies of the Public Order* (New York: Basic Books, 1971), 198; Altman, *The Environment and Social Behavior: Privacy, Personal Space, Territory, Crowding* (Monterey, Calif.: Brooks Cole, 1975) 10-11; and Allan Westin, *Privacy and Freedom* (New York: Atheneum, 1970), 7.

The right to privacy in this paper means the "right to be left alone," which has two easily understood aspects: "none-of-your-business" and "leave me alone." These aspects of the right to privacy allow an individual to control the inflows and outflows of information.<sup>5</sup> Properly understood, the right to privacy allows the individual to act as a gatekeeper for both inflows and outflows of information about oneself. This is important, not only for the content of the information, but for transaction-generated information. Transaction-generated information (TGI) gives information that a transaction occurred between two parties.<sup>6</sup>

Indeed, Justice Brandeis recognized that the concept of privacy is fundamental in our constitution when he stated in his dissenting opinion in Olmstead v. United States that "the makers of our constitution undertook to secure conditions favorable to the pursuit of happiness. They recognized the significance of man's spiritual nature, of his feelings and of his intellect. They knew that only a part of the pain, pleasure and satisfactions of life are to be found in material things. They sought to protect Americans in their beliefs, their thoughts, their emotions, and their sensations. They conferred, as against the government, the right to be let alone--the most comprehensive of rights and the right most valued by civilized men. To protect that right, every unjustifiable intrusion by the government upon the privacy of the individual, whatever the means employed, must be deemed a violation of the fourth amendment. . ."<sup>7</sup> Justice Brandeis' dissent letter became the law.<sup>8</sup> Thus, a constitutional right to be left alone from the government's unjustifiable intrusions was read into the constitution.

Legal scholar, Edward Bloustein, emphasizes the importance of privacy to the individual when he states: "the man who is compelled to live every minute of his life among others and whose every need, thought, desire, fancy or gratification is subject to public scrutiny, has been deprived of his individuality and human dignity. Such an individual merges with the mass. His opinions, being public, tend never to be different; his aspirations, being known, tend always to be conventionally accepted ones; his feelings, being openly exhibited, tend to lose their quality of unique personal warmth and to

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<sup>5</sup> Much of this discussion of privacy is based on work from Robert E. Burns, Rohan Samarajiva, and Roopali Mukherjee, *Utility Customer Information: Privacy and Competitiveness Implications* (Columbus, Ohio: The National Regulatory Research Institute, forthcoming).

<sup>6</sup> The idea of telephone transaction-generated information was developed in Thomas E. McManus, *Telephone Transaction-Generated Information: Rights and Restrictions* (Cambridge, Mass.: Harvard University, Center for Information Policy Research, 1990). In our forthcoming NRRI report, TTGI is extended to TGI to account for the ability to collect and disseminate TGI over all forms of electronic media.

<sup>7</sup> *Olmstead v. United States*, 277 U.S. 438, 478-9 (1928).

<sup>8</sup> *Katz v. United States*, 387 U.S. 347 (1967).

become the feelings of every man. Such a being, although sentient, is fungible; he is not an individual."<sup>9</sup> In short, he or she loses his or her freedom.

Can this right to privacy be extended to the electronic media? Only in the sense that if the electronic media is carried by a public utility, such as a telephone or cable company, that public utility has an exclusive monopoly franchise right to provide an essential service. Although a private company, such a utility is imbued in the public interest and is required to provide service to all within their franchise area as a part of their duty to serve.<sup>10</sup> Because it is extensively regulated by state and federal public utility commissions, it is a natural extension of the privacy doctrine to allow a utility to unjustifiably violate an individual customer's right to be left alone or to say "none of your business." Although the utility has TGI records, without the explicit consent of the consumer, the utility should not be permitted to use the TGI for other than justifiable utility purposes, such as billing, collection, and planning of utility services. However, with the extension of the electronic media to individual households through fiber optics, it may be possible to extend the individual's right to privacy to the electronic media.

Likewise, in the purest sense, "the press," particularly the printed media, is a collector and disseminator of information, controlling inflows and outflows of information. Media also provide the means for the inflows and outflows of information. For example, "the press" can send its message via broadcasting, via cable, via telephone, or via radio. Unfortunately, the United States courts have developed first amendment theory in such a manner that each medium might be considered "a law unto itself."<sup>11</sup> The largest conceptual divide in First Amendment law is between print and the electronic media. However, it is likely to be rendered obsolete by technology itself.

The Aspen Institute's Program on Communications and Society in its 1991 report on "electronic media regulation and the first amendment: a perspective for the future" proposed ten theories of the first amendment in the era of the electronic media.<sup>12</sup> These ten theories include the property rights theory, the government-created scarcity theory, the eclectic cultural approach, the computer bulletin board theory, the print model wedded to common carrier theory, the partial regulation & quality theory, the separations theory, the cascading access theory, the full human initiative theory, and the core values theory. Yet, what is needed is a technology transparent, unifying theory that recognizes

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<sup>9</sup> Edward J. Bloustein, "Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser," 39 *N.Y.L.U. L. Rev.* 962, 1003 (1964).

<sup>10</sup> A similar argument was made by Justice Douglas in his dissenting opinion in *Public Util. Commission v. Pollack*, 343 U.S. 451 (1952).

<sup>11</sup> The point was made strongly in Ithiel de Sola Pool, *Technologies of Freedom* (Cambridge Mass.: Harvard University Press, 1983), which won the 1984 Gladys M. Kammerer Award of the American Political Science Association.

<sup>12</sup> David Bollier, *Electronic Media Regulation and the First Amendment: A Perspective for the Future* (Queenstown, Maryland: The Aspen Institute, Forum Report #14, 1991).

an individual's right to privacy, while allowing for the full use of the electronic media by the press as well as individuals.<sup>13</sup>

The key to developing such a unifying theory is to look at the role of individuals and institutions. Those that are gatekeepers should have first amendment freedom of speech, freedom of the press, and in the case of individuals, privacy rights. Gatekeepers include individuals and the electronic media in all of its forms, including new entrants such as enhanced service and information service providers. Those that are conduits should be obligated under common carriage provisions to provide access to all individuals and firms on a non-discriminatory basis. These include telephone companies, cable companies, providers of fiber optic cable service, and other providers of utility conduit services. Owners of the conduit should not control or influence the content of the information sent by the media.

The potential that utility conduits would engage in anticompetitive or discriminatory behavior that would suppress access, suppress competition, and concentrate rather than diversify control of the press and other information providers, necessitates structural separation of the utility conduit from the electronic media and the information providers. The latter, together with individuals, serve as gatekeepers to information essential to maintaining a democratic society with a free and open marketplace of ideas. In other words, the recent relaxation of the MFJ restrictions is a major step in the wrong direction with a long-term potential of undercutting our most precious freedom, Freedom of the Press. The information gatekeepers, whether they be individuals or firms, need to be able to control inflows and outflows of information to enhance the privacy of individuals, to enhance access to information, to enhance competition in information providers, and to enhance access to the electronic media conduit.

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<sup>13</sup> Ibid., 16. The Aspen Institute Forum concluded that a technology transparent theory was need as the beginning model for electronic media regulation and the First Amendment. The author develops this further and shows that a technology transparent theory concentrating on the role of the individual, the media, as gatekeepers and the utility as the conduit can form the basis of this theory and is also consistent with protecting individuals' privacy interests.

## **2. RATEMAKING FOR LOW-INCOME CUSTOMERS**

**Chairperson: Ed Rosenberg**

**National Regulatory Research Institute**



**Assessing the Effectiveness of  
Residential Rate Assistance Programs  
in Furthering the Goal of Universal Service**

**June, 1992**

**J. L. Walter  
201-740-3121**

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## PART 1: INTRODUCTION AND BACKGROUND

The purpose of this study is to analyze the effectiveness of Federal Communications Commission (FCC) approved Lifeline and Link-Up America programs in increasing the availability and retention of local residential telephone service.<sup>1</sup>

The United States has long since passed the time when basic residential telephone service could be considered a luxury. Indeed, that time passed when the concept of Universal Service emerged from the Communications Act of 1934.<sup>2</sup> For half a century, Universal Service has been a goal of the U.S. telephone industry and regulatory structure. The traditional definition of this goal has been affordable access to basic telephone service for virtually all citizens.

With the advent of competition and the restructure of the telecommunications industry in 1984 with the AT&T divestiture, internal integration was displaced and traditional cross-subsidies from long distance rates became less feasible. Local rates began to move towards costs. Long distance rates fell, partly as a result of competition and partly because local rate subsidies were reduced. Some of the industry turbulence was moderated by imposing access charges, but there were fears that large business customers would bypass the operating companies, and some residential customers would be forced off the telephone network by increased monthly local bills.

A low initial subscriber line charge was imposed on residential and single line business subscribers by the Federal Communications Commission (FCC) coincident with the imposition of access charges on May 25, 1984. Then, after much deliberation, the FCC adopted the recommendations of the Federal-State Joint Board<sup>3</sup> concerning increasing the subscriber line charges for residential and single line business subscribers on April 15, 1987 to become effective in three modest increments: a first \$.60 increase effective July 1, 1987; a second \$.60 increase effective December 1, 1988; and a final \$.30 increase effective on April 1, 1989, which resulted in the current \$3.50 per line subscriber line charge.

The increase in subscriber line charges resulted in the continued downward movement of long distance rates toward their actual cost. To further the Universal Service objectives of the Communications Act, the FCC, with the recommendations of the Joint Board, established a "Lifeline Assistance" program to ensure that low income subscribers do not drop off the telephone network and an additional program, "Link-Up America", to encourage low-income households without service to connect to the network. Ensuring reasonable access to telecommunications services by all Americans has been, and continues to be, a top priority of the FCC. Therefore, options to provide assistance in connection and recurring monthly charges were encouraged.

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<sup>1</sup> An initial analysis was done on this issue in April 1990 using data current through 1988. Recently, 1991 data became available and is used herein to update and expand the initial analysis.

<sup>2</sup> Section 1 of the Communications Act, 47 U.S.C. Par. 151, "available....to all the people of the United States....at reasonable charges."

<sup>3</sup> The Federal-State Joint Board (Joint Board), created by the FCC in CC Docket 80-286, is composed of four state regulatory commissioners and three members of the FCC. The Joint Board's duties are to provide to the FCC basic recommendations for changes in jurisdictional separations.

The FCC, with state regulators and local telephone companies, established these assistance programs which are designed to promote Universal Service by helping low income or elderly households afford telephone service. The programs are funded through charges ultimately paid by interstate ratepayers, are managed by the states, and may take the form of a reduction in monthly charges or a reduction in service connection and installation charges.

Until April 1989, federal assistance for the Lifeline plans was funded through the imposition of access charges assessed on interexchange carriers. Under new funding procedures, interexchange carriers are responsible for paying Lifeline assistance if they have at least .05% of the presubscribed lines nationwide.

Three types of plans were made available by the FCC. Table 1 contains a listing of states participating in these programs, and the implementation date of the program. Plan 1, adopted on December 19, 1984, allowed a total reduction in fixed charges for telephone service equal to the federal subscriber line charge for low income households satisfying a state determined means test. This would be accomplished by a 50% reduction in the subscriber line charge. States wishing to take advantage of this assistance mechanism were required to implement an equal monetary reduction in the local exchange rate for those low income households to be funded from state sources. The assistance was to be made available for a single telephone line for the principal residence of eligible households.

Plan 2, adopted by the FCC on December 10, 1985, allowed for a broader Lifeline assistance measure for low income households providing for a total reduction in fixed charges for telephone service of twice the amount of the subscriber line charge. This reduction was achieved through a waiver of the full federal subscriber line charge up to the amount matched by state assistance and provided that the state plan meet the following federal requirement: a) means test - this is a specific assistance plan directed to those individuals with limited incomes; b) subject to verification - procedures had to be established that routinely checked to ensure that those individuals eligible under the plan were the individuals benefiting under the plan; and c) availability - for a single telephone line for the principal residence of eligible households.

The state matching contribution would be in the form of reduced local telephone service rates, reduced connection charges or reduced deposit requirements. No restrictions are in effect to define the source of funding for the state assistance.

The third plan, adopted on April 16, 1987, was a two part plan enabling low income households to connect to the telephone network. Under the first part, federal assistance would be provided to pay one-half of the connection charges to begin telephone service up to a maximum of \$30. Called Link-Up America, it was designed as a national consumer education and outreach program to assist qualified low income households in paying for telephone installation and connection costs. The program uses interstate revenues generated by the long distance carriers to offset one-half of an eligible subscriber's connection charge, up to \$30.

Under the second part, when a telephone company offered a deferred payment plan, not to exceed 12 months, for service commencement charges and it did not assess the subscriber any interest charges, federal assistance would be available to that telephone company to cover the interest on costs for up to \$200.

Since the FCC inaugurated the Link-Up America Program, measurable results have been observed. A cooperative link was established early in the program with state departments of human services to provide household income verification. Working with other local coalition components, local community based groups have provided telephone companies with access to eligible low income customers. These efforts are integral to the program's success due to the make-up of the target audience, many of whom could not be reached through conventional means of communications and required contacts on a one-on-one basis. Still there remains an untapped pool of eligible households. The continued goal of the program is to maintain the opportunity to obtain telephone service to as many eligible households as possible.

Participating states and telephone companies have wide latitude in selecting means test and eligibility criteria and in shaping the benefits of both of the programs and for determining the geographic availability of the programs. States are encouraged, but not required, to match the federal benefits and cover the remaining half of the connection charges. The states and telephone companies are encouraged to develop deferred payment plans for service commencement charges as well as to provide reductions in, or waivers of, security deposit requirements for low income customers who do not have poor credit histories.

A summary of states participating in FCC Certified Lifeline and Link-Up programs is provided in Table 1.

**Table 1**  
**States Participating in FCC Certified Lifeline/Link-Up America Programs**

State	Approval Dates Used in Study Period		Approval Dates for Programs After 3/91	
	<u>Lifeline</u>	<u>Link-Up</u>	<u>Lifeline</u>	<u>Link-Up</u>
AL		10/87		
AZ	11/86	1/88		
AR	5/86	10/87		
CA	1/85			
CO#	7/86	11/87		
CT		11/87		
DE				
DC	3/86	8/87		
FL		8/88		
GA	2/91	5/90		
ID	7/87	5/89		
IL##	11/90	9/89		
IN		4/88		
IA		3/88		
KS		1/88		
KY		1/87		
LA		10/88		
ME	8/87	8/87		
MD	5/86	10/87		
MA	2/90	2/90		
MI	1/89	1/89		
MN	1/88	1/88		
MS	1/91	4/88		
MO	10/87	4/88		
MT	8/87	8/87		
NB		3/88		
NV	4/87	4/87		
NH		11/88		
NJ		11/87		
NM	7/87	4/87		
NY	3/87	3/87		
NC	5/86	10/87		
ND	12/89	12/87		
OH	7/87	10/87		
OK		4/90		
OR	5/86	5/88		
PA		6/88		

# Legislation was passed implementing Lifeline/Link-Up America programs that expired on 2/89. These programs became effective again on 2/90.

## The Illinois Commerce Commission terminated both the Lifeline and Link-Up programs on February 1, 1991.

**Table 1 (continued)**  
**States Participating in FCC Certified Lifeline/Link-Up America Programs**

<u>State</u>	<u>Approval Dates Used in Study Period</u>		<u>Approval Dates for Programs After 3/91</u>	
	<u>Lifeline</u>	<u>Link-Up</u>	<u>Lifeline</u>	<u>Link-Up</u>
RI	9/87	9/87		
SC		12/87		
SD	2/88	2/88		
TN		11/88		
TX	7/88	10/87		
UT	12/86	3/88		
VT	9/86	2/90		
VA	12/87	12/87		
WA	7/87	8/90		
WV	7/86	9/87		
WI	11/90	7/90		
WY		1/89	5/91	

## PART 2: STUDY METHODOLOGY

In order to assess the effectiveness of federally approved Lifeline and Link-Up America programs on the target populations (i.e., low income, public assistance recipients and elderly) this research examines the levels of telephone subscribership among the target populations in 1984 (prior to implementation of these programs) and in 1991 (the most current available data on subscribership among public assistance recipients). The subscribership levels for the target populations in states which offer one or both programs are compared to the levels for the total population in all states and in those states which offered neither a federally approved Lifeline or Link-Up America plan as of March 1991 (Table 2).

Telephone subscribership data for all groups was developed from the Current Population Surveys, March 1984 and March 1991 (machine-readable data files), conducted by the Bureau of the Census for the Bureau of Labor Statistics. The Current Population Surveys (CPS) interviews approximately 70,000 households, selected on the basis of area of residence to represent the nation in total and the individual states. The CPS sample is drawn from the civilian, non-institutional population of the nation. For the March CPS, also called the Annual Demographic File, the sample is based on 729 sample areas comprising 1,973 counties and independent cities covering every state and the District of Columbia.

Approximately 70,000 housing units or other living quarters are assigned for interview each month; about 56,500 of them containing approximately 117,500 persons 14 years old and over are interviewed. Also included are demographic data for approximately 33,500 children 0-14 years old and 650 Armed Forces members living with civilians either on or off base within these households. The remainder of the assigned housing units are found to be vacant, converted to nonresidential use, contain persons with residence elsewhere, or are not interviewed because the residents are not found at home after repeated calls, are temporarily absent, or are unavailable for other reasons. Approximately 13,500 non-interview households are present each month. In addition, the March CPS is supplemented with a sample of Hispanic households. This results in the addition of about 2,500 households.<sup>4</sup> For this study, programs were developed to determine from the CPS the percentages of households in which there was a telephone in the housing unit at the time of the survey. The data is presented at the state level for an estimate of telephone subscribership for the state. For each state, the data was disaggregated to identify an estimate of subscribership for households with reported income of less than \$15,000 annually, for households where the householder reports being 65 or older, and for households reporting receipt of public assistance.

The mean of the level of subscribership in all states was then calculated for both study years. The mean was used to calculate the percent change in subscribership for the period 1984-1991. The range (minimum, maximum) and standard deviation were also calculated.

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<sup>4</sup> March 1991 Current Population Survey, Technical Documentation, pp. 2-1, 2-2.

The states were then assigned to one of four categories:

1. Those having an FCC approved and implemented Lifeline program as of 3/91.
2. Those having an FCC approved and implemented Link-Up America program as of 3/91.
3. Those having both programs as of 3/91.
4. Those having neither program as of 3/91.

Data tables were constructed to display the total subscribership levels and subscribership levels for low income, elderly, and public assistance recipient households by state for each of the four categories listed above. For each category, the mean, range and percent change in subscribership levels were calculated for each household population grouping.

The categories of public assistance reported include families receiving foodstamps, energy assistance, welfare, aid to families with dependent children, or supplementary security income.

A summary comparing the results developed for each of the categories and population groupings is presented in Table 2.

Study results are presented as percentages of the population which subscribe to telephone service and have a telephone in their place of residence. This is done for consistency and ease of presentation. The data represents a total of 93,939,000 households nationally. For reference, a 1% change in total study results in a change is approximately 939,390 households in the nation. For the demographic groups studied, the number of households in each group and the number affected by a 1% change is presented below.<sup>5</sup>

<u>Household Group</u>	<u>Number of Households Represented in Sample</u>	<u>Number of Households Affected by 1% Change</u>
National Total	93,939,000	939,000
Household Income < \$15,000	23,390,811	233,908
Elderly Households	20,478,702	204,787
Households Receiving Public Assistance	12,587,826	125,878

Data tables were also constructed which match the resulting subscribership levels by targeted demographic subgroup for each state with the eligibility criteria for participation in assistance programs. This allows identification and measurement of the effect of targeting specific groups for assistance programs. For example, the change in subscribership levels of low income households can be observed for states which offer assistance programs for low income households and compared to results for low income households in states which do not offer such programs.

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<sup>5</sup> Developed from Current Population Survey Data Tape, March 1991 Annual Demographic File.

TABLE 2: SUMMARY OF RESULTS

<i>Category</i>	<i>Total Subscribership Level</i>			<i>Subscribership Level Under \$15,000 Per Year</i>			<i>Subscribership Level Age 65 and Over</i>			<i>Subscribership Level HHs on Public Assistance</i>		
	<i>3/84</i>	<i>3/91</i>	<i>% Chg.</i>	<i>3/84</i>	<i>3/91</i>	<i>% Chg.</i>	<i>3/84</i>	<i>3/91</i>	<i>% Chg.</i>	<i>3/84</i>	<i>3/91</i>	<i>% Chg.</i>
<i>National Average</i>	91.6	93.6	2.0	83.6	84.3	0.7	95.5	97.3	1.8	81.3	80.3	-1.0
<i>LL Average</i>	92.5	95.3	2.8	85.4	87.8	2.4	96.9	97.6	0.7	84.8	85.5	0.7
<i>LUA Average</i>	91.6	93.4	1.8	83.7	84.4	0.7	95.5	97.1	1.6	81.6	80.1	-1.5
<i>Both Plans Avail. Average</i>	91.4	93.6	2.2	83.1	84.7	1.6	95.2	97.2	2.0	80.4	81.4	1.0
<i>No Plan Average</i>	95.5	95.4	-0.1	89.0	89.2	0.2	98.5	98.6	0.1	91.2	79.1	-12.1



## PART 3: STUDY RESULTS

### (A) Results for the Nation (Table 3)

During the study period (1984-1991) the national average telephone subscribership level, expressed as a percent of all households, rose 2.0% from 91.6% in March 1984 to 93.6% in March 1991. For purposes of this study, Alaska and Hawaii have been excluded from the database, and Washington, D.C. was included. At the 95% confidence level, this is a statistically significant change. During this time, ten states experienced statistically significant growth in subscribership; no states experienced a statistically significant decline. Thirty five states showed an increase in subscribership while five showed a decline.

In March 1991, one state had implemented an FCC approved Lifeline assistance program. Fifteen states had implemented an FCC approved Link-Up America program. Twenty-seven states implemented both FCC programs. Two states had no FCC approved assistance plan.

For the entire nation, households reporting less than \$15,000 in annual income experienced an 0.7% increase in average telephone subscribership levels. Households reporting receipt of public assistance showed a one percent decrease in subscribership levels. Because there is concern for the impact possible rises in local exchange rates might have on the elderly population (65 or older), many of whom live on fixed incomes, they are included in this study as a separate household population. Where an elderly householder reports a household income of less than \$15,000 annually, the household data would be included in the low-income household population data for this study. Similarly, if an elderly householder reported receiving public assistance, the household data would also be included in the public assistance household population data for this study. The elderly population gained 1.8% in average subscribership levels during the study period. It is worth noting that the average subscribership levels for the elderly are above the national average at a statistically significant high level throughout the study period.

TABLE 3: NATIONAL SUBSCRIBERSHIP

	Telephone Subscribership			Telephone Subscribership Under \$15,000 Per Year			Telephone Subscribership Age 65 and Over			Telephone Subscribership HHs on Public Assistance		
	3/84	3/91	% Chg.	3/84	3/91	% Chg.	3/84	3/91	% Chg.	3/84	3/91	% Chg.
AL	89.05	90.86	1.81	81.87	83.77	1.9	92.02	94.47	2.45	75.99	76.32	.33
AZ	89.78	93.52	3.74	78.92	83.79	4.87	94.10	97.78	3.68	71.07	76.96	5.89
AR	87.17	88.23	1.06	82.06	77.90	-4.16	89.76	95.59	5.83	75.52	77.50	1.98
CA	92.52	95.13	2.61	85.44	87.86	2.42	96.97	97.61	0.64	84.77	85.47	0.70
CO	94.60	94.02	-0.58	87.47	80.50	-6.97	97.39	98.42	1.03	87.76	78.77	-8.99
CT	94.65	97.15	2.50	85.06	87.39	2.33	94.85	100.00	5.15	87.55	83.38	-4.17
DE	95.45	96.82	1.37	88.13	95.28	7.15	100.00	98.99	-1.01	92.73	81.39	-11.34
DC	95.86	92.19	-3.67	93.70	86.21	-7.49	99.48	95.45	-4.03	92.67	85.83	-6.84
FL	89.92	93.23	3.31	82.41	85.01	2.60	94.19	97.32	3.13	77.14	78.58	1.44
GA	85.88	91.33	5.45	73.32	78.31	4.99	89.20	95.22	6.02	65.72	75.21	9.49
ID	90.43	92.69	2.26	81.77	86.39	4.62	95.01	98.81	3.80	78.50	83.20	4.70
IL	95.54	93.92	-1.62	89.94	83.19	-6.75	97.00	98.21	1.21	89.65	76.82	-12.83
IN	92.05	92.78	0.73	83.44	83.45	0.01	96.92	97.68	0.76	83.02	80.01	-3.01
IA	95.79	95.64	-0.15	91.61	89.24	-2.37	98.23	99.56	1.33	90.60	86.82	-3.78
KS	94.46	94.31	-0.15	88.67	87.33	-1.34	99.19	98.77	-0.42	84.42	83.49	-0.93
KY	87.15	89.19	2.04	75.10	78.92	3.82	96.68	98.04	1.36	75.16	73.38	-1.78
LA	89.62	93.04	3.42	83.34	86.08	2.74	92.55	94.82	2.27	80.68	81.67	0.99
ME	94.34	95.80	1.46	87.42	88.21	0.79	95.70	100.00	4.30	86.95	81.75	-5.20
MD	96.19	97.27	1.08	89.97	92.81	2.84	97.14	96.89	-0.25	88.73	87.53	-1.20
MA	95.62	96.77	1.15	89.79	91.29	1.50	97.81	98.84	1.03	88.93	89.89	0.96
MI	93.32	94.98	1.66	85.79	86.78	0.99	99.08	97.56	-1.52	83.53	82.58	-0.95
MN	95.91	97.23	1.32	87.84	93.70	5.86	98.50	98.52	0.02	86.58	94.13	7.55
MS	81.85	86.39	4.54	74.53	74.73	0.20	86.39	92.21	5.82	68.53	73.86	5.33
MO	92.14	94.42	2.28	84.92	86.62	1.70	96.44	99.44	3.00	82.23	80.48	-1.75
MT	90.09	91.48	1.39	81.71	79.42	-2.29	88.47	95.87	7.40	79.55	78.68	-0.87
NE	96.54	95.91	-0.63	91.97	90.36	-1.61	97.71	98.17	0.46	87.34	91.13	3.79
NV	92.99	92.86	-0.13	79.96	79.52	-0.44	94.56	95.48	0.92	82.08	81.17	-0.91
NH	94.76	96.69	1.93	85.99	85.94	-0.05	96.02	97.87	1.85	84.22	78.39	-5.83
NJ	93.52	94.77	1.25	84.87	83.78	-1.09	96.12	95.96	-0.16	87.70	81.85	-5.85
NM	81.73	87.33	5.60	68.30	73.13	4.83	89.40	92.75	3.35	61.96	63.41	1.45
NY	91.16	91.96	0.80	81.48	82.85	1.37	94.39	96.52	2.13	77.97	73.49	-4.48
NC	88.84	92.76	3.92	76.91	85.28	8.37	95.92	97.74	1.82	75.73	79.91	4.18
ND	93.76	96.79	3.03	86.76	91.64	4.88	91.61	98.38	6.77	88.87	90.69	1.82
OH	93.00	94.79	1.79	85.26	86.38	1.12	96.52	98.44	1.92	85.41	80.23	-5.18

TABLE 3: NATIONAL SUBSCRIBERSHIP

	Telephone Subscribership			Telephone Subscribership Under \$15,000 Per Year			Telephone Subscribership Age 65 and Over			Telephone Subscribership HHs on Public Assistance		
	3/84	3/91	% Chg.	3/84	3/91	% Chg.	3/84	3/91	% Chg.	3/84	3/91	% Chg.
OK	91.00	89.94	-1.06	83.19	77.49	-5.69	92.58	97.12	4.54	75.41	71.61	-3.80
OR	91.37	96.17	4.80	81.39	89.65	8.26	99.70	98.07	-1.63	74.86	81.38	6.52
PA	94.38	97.15	2.77	88.20	92.54	4.34	96.45	98.13	1.68	88.27	89.26	0.99
RI	93.95	94.56	0.61	87.56	86.15	-1.41	98.82	100.00	1.18	90.27	79.09	-11.18
SC	84.64	89.73	5.09	72.29	76.95	4.66	94.40	92.92	-1.48	69.51	71.31	1.80
SD	92.69	93.79	1.10	86.67	86.62	-0.05	98.03	98.39	0.36	77.85	85.30	7.45
TN	87.03	90.79	3.76	77.86	77.49	-0.37	95.24	95.34	0.10	77.35	74.82	-2.53
TX	88.11	91.26	3.15	75.64	79.94	4.30	95.16	96.85	1.69	75.41	74.82	-0.59
UT	92.05	97.51	5.46	82.70	97.61	14.91	97.09	99.02	1.93	80.71	92.61	11.90
VT	91.23	94.76	3.53	82.64	83.56	0.92	94.15	97.03	2.88	78.64	88.42	9.78
VA	93.19	92.29	-0.90	84.49	72.96	-11.53	96.65	96.40	-0.25	81.86	67.52	-14.34
WA	92.89	97.41	4.52	86.10	92.11	6.01	95.73	99.24	3.51	86.93	90.72	3.79
WV	87.33	89.02	1.69	81.15	79.54	-1.61	91.80	95.54	3.74	74.97	66.93	-8.04
WI	96.02	96.78	0.76	90.42	88.90	-1.52	98.04	95.10	-2.94	90.53	91.86	1.33
WY	89.02	95.46	6.44	79.32	84.19	4.87	98.23	97.04	-1.19	73.43	89.46	16.03

## **(B) Results for States Having an FCC Approved Lifeline Program**

Households in California, which is the only state to have only an FCC approved Lifeline program available showed the largest average gains in telephone subscribership in total and for low income household population subgroups. The data for the Lifeline category show the following:

1. California had the largest average increase, 2.8%, in total subscribership of the groupings of states by program type. At the end of the study period, it also had the second highest average level, 95.3% of telephone subscribership. This average level of subscribership exceeded the national average of 93.6% by 1.7%.
2. Households reporting less than \$15,000 annual income in this group had the largest average gain, 2.4% in subscribership. The gain for this group exceeded the national average gain for low income households of 0.7% by 1.7%. At the end of the study period, low income households in the state with the Lifeline program had an average subscribership level of 87.8%, which exceeded the national average level for low income households of 84.3% by 3.5% and also exceeded the average subscribership levels of most other state groupings.
3. For the Lifeline state, elderly households reported similar results. They reported the second highest average subscribership level, 97.6%, which is 0.3% higher than the national average for elderly households. The 0.7% gain is about half the gain realized by the elderly in states with other plans.
4. Households receiving public assistance in Lifeline states showed a small but positive gain, 0.7%, in average subscribership levels as well as the highest level, 85.5% of average subscribership at the end of the study period.
5. For the state which has an FCC approved Lifeline program, the average gain in subscribership for low income and households receiving public assistance exceeded the average gain in subscribership for those categories of households nationally.

**(C) Results for States Having an FCC Approved Link-Up America Program**

There are fifteen states which comprise the category of states having an FCC approved Link-Up America program. This group experienced the third highest gain in total average subscribership levels of 1.8% (the highest average gain was experienced by the Lifeline category). Data on the Link-Up America category show the following:

1. Total average subscribership for this group increased 1.8% to 93.4%. This was a smaller gain than the national average. Because the average subscribership level for the Link-Up America state grouping was lower than most state groupings at the beginning of the study period (91.6%), the gain was insufficient to raise the total average subscribership for this group up to the national average by the end of the study period.
2. For low income households in this category, an average gain of 0.7% was reported. This again is the third highest average gain (the highest being in the Lifeline grouping), and although the average subscribership level in 1984 was low for this category, the gain was sufficient to bring the average slightly above the national average for low income households during the study period.
3. The elderly householders experienced a gain of 1.6%, but because the initial average subscribership level (95.5%) was the second lowest of all the categories, the 1991 results where there are Link-Up programs are slightly below the national average.
4. Households receiving Public Assistance declined in subscribership levels in this category as well as nationally and in states where no FCC plans are in effect. The 1.5% decline was slightly larger than the national decline (1.0%) but significantly less than the 12% decline seen in the "no plan" areas. This seems to indicate that for these households, continuing rate assistance is even more important to continued subscribership than assistance for initial connection charges.

#### **(D) Results for States Having Both FCC Approved Programs**

There are thirty-one states in the category which includes both an FCC approved Lifeline and Link-Up America program. This category experienced an above average gain, 2.2% in total subscribership. All demographic groups studied experienced gains in subscribership where both plans are offered. Results for this category are as follows:

1. The total average subscribership in this category rose 2.2% to 93.6%. This is equal to the national average. It is 0.2% higher than the average for states which offer only Link-Up programs.
2. The average subscribership level for low income households increased 1.6% to 84.7%. It is 0.4% higher than the national average for low income households. It is the second largest gain for this demographic group.
3. Average telephone subscribership in elderly households rose 2.0% to 97.2%. This is the largest gain for the elderly group.
4. Those states which offer one or both programs show an increase in average subscribership levels for households receiving public assistance. States offering both programs showed an 1.0% increase to a level of 81.4%. This is the largest gain for public assistance households among the various rate assistance programs. While this average subscribership level is not the highest among all categories, the gain is important because this category had the lowest average subscribership level at the start of the study period.

### (E) Results for States Not Having an FCC Approved Assistance Program

There were two states in the category of states which had neither an FCC approved Lifeline or Link-Up America plan in effect in March 1991. In reviewing the results for these states, it should be noted that they may have implemented some type of low cost options for local service in order to make service universally accessible. Since these low cost options have not been certified by the FCC, it is outside the scope of this report to categorize them separately.

States not having an FCC approved assistance program showed a small loss in the average level of subscribership. However, the total average subscribership level for these states is still the highest among all categories at 95.4%. Results for this category are as follows:

1. Although the total average subscribership level of 95.4% exceeded the national average by 1.8% it is the only category to have a decline in total subscribership. It also began the study period with the highest level of total subscribership.
2. These states showed the smallest gain, 0.2%, in low income subscribership among all categories. However, since they began the study period with a significantly higher level than the other categories, they remained having the highest level in 1991.
3. The elderly experienced a small, 0.1%, gain in the average level of subscribership in these states. The average level of subscribership for this category is 1.3% higher than the national average, but, again, these states had a much higher than average subscribership level among elderly at the start of the study.
4. The largest decline, 12.1% in average subscribership levels for households on public assistance is shown in this category. Both states experienced a decline greater than 10%. The 79.1% average level of subscribership was below the national average, 80.3%, and significantly below all other categories. They had a much higher average level of subscribership among public assistance households at the beginning of the study period (91.2%).

## (F) Results for Low Income Households

There was a gain of 0.7% in average subscribership among low income households at the national level. The most significant gains occurred in states which offer an FCC approved Lifeline program (2.4%) or both a Link-Up America and a Lifeline program (1.6%). In these categories, four states experienced a gain of over 5%. Three states in these categories showed declines greater than 5%.

In the remaining categories, no FCC plan and Link-Up plans, results were positive but lower. Two states had losses in average subscribership greater than 5%. One state had a gain of 5% or more.

In examining the telephone subscribership levels of low income households, the gains are more impressive in states whose assistance programs are directed specifically to low income households. The results are highest for those states offering both programs, as shown below.

### Low Income Subscribership in States with Low Income-Specific Assistance

<u>Type of Program</u>	<u>1984</u>	<u>1991</u>	<u>% Change</u>
Lifeline Only	85.4%	87.8%	2.4%
Link-Up Only	85.1%	87.4%	2.3%
Both Programs	84.2%	88%	3.8%
Average for All Programs	84.6%	87.9%	3.3%

The results where assistance programs are made specifically available to low income households appear as higher average subscribership levels among these households, and larger percent growth.



### (G) Results for Elderly Households

Elderly households gained an average of 1.8% in telephone subscribership nationally. In all categories, elderly households had a significantly higher average level of subscribership than national averages (for the entire population) throughout the study period. There were no declines greater than 5% at the state level in any category. Gains greater than 5% were recorded for six states. A higher than national gain was recorded in states where both Lifeline and Link-Up programs are offered. The highest overall subscribership level, however, was in states with no assistance plans for the elderly.

It is not surprising that the largest gain for the elderly was recorded in states which offer both assistance programs. When the states which have programs directed toward increasing subscribership among the elderly are examined, all have both Lifeline and Link-Up programs. Details are given below.

#### Elderly Subscribership in States with Elderly-Specific Assistance

<u>Type of Program</u>	<u>1984</u>	<u>1991</u>	<u>% Change</u>
Both Programs	95.9%	96.8%	0.9%

## (H) Results for Households Receiving Public Assistance

At the national level, the public assistance household group experienced a loss of 1% in average subscribership levels during the study period. A loss of 1.5% was seen in those states offering Link-Up America programs. A statistically significant loss of 12.1% was seen in the states offering no FCC certified assistance programs. Gains were seen in those states offering Lifeline (0.7%). Lifeline with Link-Up programs experienced a small gain of 1%.

Where Lifeline programs are available, no state realized increases or decreases in average subscribership levels greater than 5%.

In areas where Link-Up America was available, no state showed a gain of over 5%, whereas two showed a loss of over 5%.

Where both programs are available, gains in average subscribership levels of greater than 5% are noted in nine states, while losses greater than 5% are shown in seven states.

Where no FCC approved programs exist, the significant decline of 12.1% in average subscribership was noted. In this category, two states experienced a decline greater than 10% while no states showed a gain.

Nowhere is the effectiveness of residential rate assistance programs more evident than among households receiving public assistance. The results indicate that while these programs help, it is more effective to combine an initial connection assistance program with a recurring assistance program than to offer either alone. This is particularly apparent in households receiving public assistance. From Table 2, it is apparent that the only types of plans not showing a loss in this group of subscribers included recurring rate assistance. When the data is disaggregated to examine results in states which direct assistance plans to these households, the pattern remains although the increases are slightly larger.

### Public Assistance Household Subscribership in States with Specific Assistance

<u>Type of Program</u>	<u>1984</u>	<u>1991</u>	<u>% Change</u>
Link-Up Only	81.6%	80.1%	-1.4%
Both Programs	80.4%	81.6%	1.2%
Average for All Programs	80.8%	81.1%	0.3%

## PART 4: CONCLUSION

The time period from 1984 to 1991 has been affected by some of the most dramatic changes ever experienced in the telecommunications industry. The effect of these radical changes on the residential consumer is of great concern. The Communications Act of 1934 established Universal Service as a public policy objective. Because of the potential harm to this Universal Service goal that might result from the changing telecommunications environment, the FCC and the Joint Board established two assistance programs to help low income or elderly households afford telephone service. The Lifeline program is designed to ensure that subscribers do not discontinue service, while the Link-Up America program is designed to assist non-subscribers in establishing service. The purpose of this study is to assess the effectiveness of these programs in promoting Universal Service.

During the study period, results indicate the most significant growth in average telephone subscribership levels occurred in the categories comprised of those states where an FCC certified Lifeline program or combination of Lifeline and Link-Up programs were available to residential consumers. The growth rate experienced in these states exceeded the national growth rate for the total household population as well as the growth rates for all of the targeted populations studied. Equally as important, the average subscribership level (expressed as a percentage of all households) for these categories exceeded the national average for all populations. From these results, it can be concluded that the FCC certified Lifeline and Link-Up programs are effective in furthering the goal of Universal Service. The study shows that they are most effective when used together. The combination is more effective than the Link-Up or Lifeline program alone. The combination is far more effective than the Link-Up program alone, leading to the conclusion that one time connection charge assistance is not sufficient to insure continued subscribership. The recurring assistance of the Lifeline program is essential.

A significant decline in the average level of subscribership among households receiving public assistance is noted in the category comprised of states which have no FCC approved assistance program available. Some of these states may offer some type of low cost local service plan which could account for the slight increase in average subscribership levels in low income or elderly households.

The study also shows that assistance programs whose eligibility criteria specify a particular demographic subgroup have a larger positive effect on subscribership among the targeted subgroup than the average for that subgroup.



EFFICIENT RATE DESIGN FOR  
LOW USE, LOW INCOME ELECTRICITY CONSUMERS  
by

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INTRODUCTION

For decades, regulators have struggled with the dilemma of balancing equity and efficiency when allocating revenue recovery burdens among customer classes or when designing rates. One objective of some regulators has been to ameliorate the burden of rising electricity rates for lower income residential customers. However, current (accepted) methods for allocating the costs of service do not achieve that goal. Rather, they assign costs to and within the residential class in a way that fosters cost recovery strategies and rates that are particularly burdensome to lower income, low usage customers. Though it strikes many as highly inequitable, this result has seemed to be unavoidable in the absence of preferential rates or special assistance programs for lower income customers. We suggest that it may not be unavoidable.

The issue of ratemaking for low income utility customers has perplexed regulators for the past two decades. The underlying problem with electricity rates is that the residential class of service is usually very diverse. It includes under one tariff a wide range of users with divergent customer profiles and load patterns. It usually encompasses the extremely low user with a small apartment and one or two appliances as well as the extremely high usage customer with central air conditioning and a heated pool. Often a single rate design is implemented to collect revenues from both extremes. For low income consumers who use electricity solely for subsistence, some jurisdictions have provided discounts either in the form of direct rebates or in subsidized rates for low income customers. This paper suggests that in some cases, special measures to provide relief to low income customers may not be necessary.

We suggest that an economically sound allocation of the costs of service within the residential class may be all that is needed to achieve the desired relief for low income and low usage residential customers. The resulting rate structure reconciles seemingly contradictory objectives. By accurately reflecting costs of service while eliminating undue rate burdens on low income and

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<sup>1</sup> Ross Hemphill and David Poyer are both economists with Argonne National Laboratory. Conrad Reddick is an attorney specializing in utility regulation. The views and opinions expressed herein are those of the authors and do not necessarily reflect the views, opinions, or policies of Argonne National Laboratory.

low usage customers, the method described achieves both efficiency and equity. Rate structures should be designed to collect the necessary revenues in a manner that promotes economic efficiency and is fair to subgroups within the rate class. To promote economic efficiency the design should closely reflect the costs of serving the different groups. The rate should be fair in that it does not impose unfounded costs on (or provide unjustified benefits to) any single customer or group of customers within the class.

The small, but significant, revelation presented in this paper is based on an in-depth examination of the interclass revenue requirement allocation and rate design of a large midwestern utility. Several consultants entered the project with the objective of restructuring the company's rates in a manner that permitted significant reductions in the bills of lower income customers. The obvious, easy solution was a separate (lower) rate for the low usage customers.

However, close analysis pointed to an equally effective, but more efficient (and thus more desirable) solution. The analysis revealed that the residential tariff was inefficiently designed. The result was a regressive rate structure that was not justified on cost grounds. A single change in the rate design process -- application of the cost-of-service allocation method used for interclass allocations to the residential class -- produced a rate design that properly reflected costs and provided due rate reductions to low use (mostly lower income) customers.

This paper demonstrates the important role rate design plays in distributing the burden of revenue collection among residential customers in various usage level and socioeconomic status groups. At a minimum, the method employed to distribute intra-class revenue recovery should be structurally consistent with the methods of interclass revenue allocation.

A fundamental premise in using rate design to provide relief for low income customers is a positive relationship between usage and household income. Residential energy consumption information, provided by the U.S. Department of Energy, is used to show that there is a strong correlation between usage levels and income class. Efficiency and equity shortcomings are evident when one examines usage levels and attendant costs in the context of the rate structures in place for many major utilities. Intra-class load factor analysis provides evidence that existing rate structures are not only inefficient but also exacerbate inequities between high and low-income customers. Low-income customers, despite having relatively high load factors, still pay a higher average price for electricity.

Load research for the residential class of large metropolitan utilities strongly suggests an inverse relationship between usage level and load factor. That relationship indicates a direct relationship between customer usage levels and contribution to the average and absolute system peak demand facing the utility.

Employing cost-of-service study methods used by electric utilities nation-wide, one can infer that when all relevant costs are considered, in a manner consistent with the method employed for inter-class revenue allocation, the marginal cost of serving a residential customer increases with levels of usage. Methods allocating embedded costs relying on customer load profile information can be expected to yield similar relationships.

This paper presents rate design options that properly represent intra class costs and circumvent the need for separate low usage rates or low income energy programs. Throughout the discussion, the midwestern utility's rate structure is used to illustrate a residential design that exacerbates the low usage, low income revenue recovery problem.

#### **RATE DESIGN AS AN INTRA-CLASS ALLOCATOR OF REVENUE**

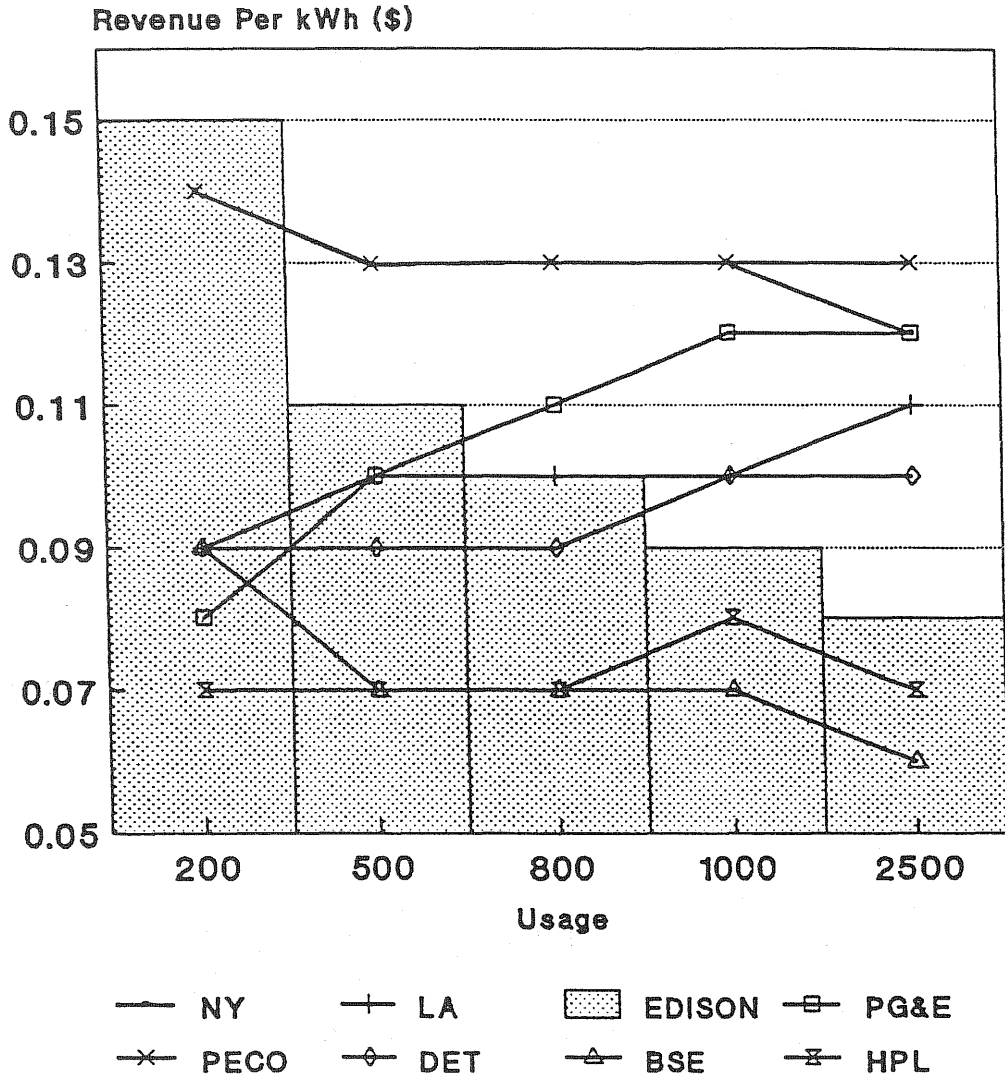
The regulatory process is one of determining total revenues to be recovered by the utility and allocation of that revenue requirement. Once the total revenue requirement is determined, revenue recovery is divided among the different classes of customer, the inter-class allocation. The allocation process involves a zero sum game between all affected parties in the case i.e., consumers become winners or losers depending upon the outcome of the allocation process.

The basis for this allocation process is usually a type of fully distributed cost-of-service study. Allocations of inter-class cost responsibility are usually driven by customer load research. Load research plays this role whether the allocation method is an embedded average and excess approach or a marginal cost study utilizing a single coincident peak allocation method. Uniformly, the responsibility for capacity related costs -- and certain other types of costs -- are driven by the relative load profiles of the classes.

In the regulatory process, representatives (or advocates) for each class of customer contest the allocation process and outcome-- in many cases spending substantial amounts on alternative cost studies. In the end, the commission determines which cost study and allocation method are the bases of its order.

Once the revenue recovery responsibility is divided among the various classes, the rates for each customer class must be designed to recover efficiently and equitably, the assigned revenue requirement from customers within the class. This rate design process is a form of intra-class revenue allocation. The design of the tariff implicitly assigns revenue recovery responsibility to the various usage levels within the class. The effects of alternative rate designs on the intra-class recovery of revenues for the residential class can be demonstrated through comparisons such as Figure 1 shown below.

**Figure 1**  
**Revenue Per kWh At Various Usage Levels**  
**Commonwealth Edison Compared With 7 Metropolitan Areas**



Based on average yearly bills computed at current rates for single family residences.



One can see how the alternative designs can have an impact on the recovery burdens at different usage levels. The bar chart in the background shows the recovery assignments, Commonwealth Edison on an average price per kWh basis across usage levels. It is steeply declining. Compare this to the Pacific Gas & Electric (PG&E) recovery scheme, where average price per kWh increases steeply with increased use. The reason for these different outcomes is the design of the rate.

The Commonwealth Edison rate uses a declining block structure, with a seasonal discount in the non-summer months only for large customers. This is shown below:<sup>2</sup>

Customer Charge

Single Family	\$9.43
Multi Family	\$3.95

Energy Charge

Summer	\$0.11247 per kWh
Non-Summer	\$0.11247 first 400 kWh \$0.07374 over 400 kWh

The rate design for PG&E is quite different. It uses an inverted block structure with a seasonal differential built into the blocking of the energy rate:

Minimum Bill	\$5.00
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Energy Charge

Summer	\$0.08118 first 7.6 kWh per day \$0.12739 over
Non-Summer	\$0.08118 first 8.7 kWh per day \$0.12739 over

The level of cost responsibility placed on low usage levels as compared to higher usage levels is starkly different between these two rate designs. Is this difference cost based? The answer is revealed by an intra-class cost allocation process that is consistent with the method and allocation rules used for the inter-class cost allocation process. Intuitively, low usage residential customers are less likely to contribute to system peaks, since their lower usage reflects a lack of the energy intensive appliances that tend to be used at peak times. As shown below, those lower usage customers are more likely to be lower income households.

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<sup>2</sup> The rate levels shown here may be different from current levels (across the board) due to revenue adjustments of various kinds; however, the design displayed here is accurate.

## RELATIONSHIP BETWEEN INCOME AND USAGE

This section discusses research that was conducted to determine whether there is a relationship between household income and electricity consumption. The research is primarily theoretical, relying on an applied microeconomic theoretic approach, but augmented by innovative use of regional census data and DOE energy consumption surveys. Three models were empirically estimated: a dynamic, long-run, and a conditional long-run model. Each model has its particular strengths and weaknesses. Each model's relevance depends on the particular policy question being addressed.

The analysis of the effect of income on electricity consumption is expressed in a complete demand system framework. A complete demand system is an analytical framework in which the conditions required for the rational consumption of goods are met. There are four conditions: adding-up, homogeneity, symmetry, and semi-negative definitiveness. These requirements are automatically met with the income constrained maximization of a well defined utility function. In this case, electricity demand is determined by solving the set of first order condition equations obtained from the income constrained utility maximization problem.

The demand system used in this analysis is based on the Stone-Geary utility function. The Stone-Geary utility function has been employed extensively in applied microeconomic analysis, and has a rich literary history (see Klein and Rubin 1947; Samuelson 1947; Stone 1954; Geary 1950-51). The utility function used was first derived by Paul Samuelson (1947) and used extensively by Stone (1954) in his analyses of British consumption patterns from which it gained great popularity. Subsequently, in the literature, the function has been referred to as the Stone-Geary utility function.

**The Model:** The dynamic, conditional and unconditional long-run models are obtained by solving the classical utility maximization problem. In equation (1) a simple two-good Stone-Geary utility function is specified. From this equation the long-run equations - - unconditional and conditional - - are derived.

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<sup>3</sup> In this case it is assumed that all of income is consumed. Alternatively, savings (or dissavings) can be assumed to be good with the rate of interest its price. Given an assumption of strong separability, the question of how to address the issue of savings or intertemporal consumption is easily confronted.

$$u_t = (q_{elt} - \gamma_{el})^{\beta_{el}} (q_{ct} - \gamma_c)^{1 - \beta_{el}} \quad (1)$$

where:  $u_t$  = utility in period  $t$ ;  
 $q_{elt}$  = electricity consumption in period  $t$ ;  
 $q_{ct}$  = non-electricity consumption in period  $t$ ;  
 $\beta_{el}$  = marginal electricity expenditure share;  
 $\gamma_{el}$  = non-discretionary electricity expenditures;  
 $\gamma_c$  = non-discretionary non-electric expenditures;

The unconditional and conditional demand systems, are distinguished by varying assumptions pertaining to the non-discretionary electricity demand parameter. In the conditional model  $\gamma_{el}$  is specified as a function of appliance-type, household, demographic, and climatic characteristics. The purpose of the conditional model is to describe how households constrained by factors that are relatively fixed over time will behave in response to income and price changes. It also provides an illustration of how differences in electricity use by end-use category affect the income-electricity consumption relationship (the Engel curve).

The distinction between the unconditional and conditional demand model, as mentioned earlier, is based on the specification of the non-discretionary demand for the electricity parameter,  $\gamma$ . In the unconditional model, the parameter is assumed constant and embodies the influence of all extra-economic variables on electricity demand.

In the conditional model, the non-discretionary demand parameter is assumed to be an explicit function of end-use appliance, household, and demographic characteristics and is specified as:

$$\gamma_{el} = a'x \quad (2)$$

where:  $a'$  = vector of coefficients;  
 $x$  = vector of variables.

The vector of coefficients are explicitly specified and empirically estimated. The explicit expression for the conditional demand model for electricity is:

$$q_{elt} = (1 - \beta_{el}) a'x + \frac{\beta_{el} (m_{et} - p_{ct} \gamma_c)}{p_{elt}} \quad (3)$$

The dynamic electricity demand equation is derived from the use of equation (4). The only thing that distinguishes this function from the unconditional utility function given in equation (1) is the presence of a state variable, the carryovers of which are intended to capture the effect of various contemporaneous factors on electricity consumption.

$$u_t = [q_{elt} - (\gamma_{el} + \alpha s_t)]^{\beta_{el}} (q_{ct} - \gamma_c)^{1 - \beta_{el}} \quad (4)$$

where:  $\alpha$  = dynamic effect parameter;  
 $s_t$  = state variable.

An intuitive interpretation of the dynamic version of the Stone-Geary utility function is that over time the level of non-discretionary electricity consumption changes in response to technological and structural changes, which either augment or diminish the demand for electricity. The dynamic process is either augmenting or diminishing depending on the sign of  $\alpha$ . If  $\alpha$  is positive the dynamic process is considered quantity augmenting. If  $\alpha$  is negative, it is quantity diminishing. The unconditional demand for electricity, derived from the income constrained maximization of equation (1), is:

$$q_{elt} = (1 - \beta_{el}) \gamma_{el} + \frac{\beta_{el} (m_{et} - p_{ct} \gamma_c)}{p_{elt}} \quad (5)$$

In this study, two separate dynamic models were estimated: one for urban; another for non-urban households.

The dynamic version of the model is derived from the income constrained maximization of equation (4). The dynamic electricity model is:

$$q_{elt} = (1 - \beta_{el}) (\gamma_{el} + \alpha s_t) + \frac{\beta_{el} (m_{et} - p_{ct} \gamma_c)}{p_{elt}} \quad (6)$$

where:

$$s_t = (1-\theta) p_{elt-1} + \theta s_{t-1} \quad (7)$$

where:  $\theta$  = dynamic adjustment parameter;  
 $p_{elt-1}$  = electricity price in period t-1;  
 $s_{t-1}$  = state variable in period t-1.

In the steady-state, the mathematical expression for the income elasticity is the same for each of the models. The actual numerical values will, however, vary depending on the magnitude of the marginal expenditure share and the electricity expenditure share of income.

**Data and Estimation:** Each of the three models was estimated using a nonlinear estimation procedure (SAS, 1988; Amemiya, 1977). Panel data for the Midwest Census region was constructed by using the Department of Energy, Energy Information Administration's *Residential Energy Consumption Survey* data series. The dynamic model was estimated using a form derived from the difference of  $q_{elt}$  and  $\theta q_{elt-1}$ . The equation estimated is:

$$q_{elt} = (1-\theta) (1-\beta_{el}) (\gamma_{el} + \alpha p_{elt-1}) + \beta_{el} \left[ \frac{y_t - p_{ct} \gamma_c}{p_{elt}} - \frac{\theta (y_{t-1} - p_{ct-1} \gamma_c)}{p_{elt-1}} \right] + \theta q_{elt-1} \quad (8)$$

From this equation the dynamic effect and adjustment parameters are estimated, as well as the associated marginal income share and non-discretionary demand parameters. Estimates for each of the three models are shown in Table 1. Before discussing the estimated models, one technical point must be mentioned. There is strong evidence (see Dubin and McFadden, 1984) that the estimates are biased, in that both prices and end-use choices are treated as endogenous variables. Therefore, follow-up work should be conducted to ensure the efficiency of the models presented in this paper. Despite this concern, however, the empirical estimates are consistent with results reported in relevant literature.

The signs and relative magnitudes of the estimated parameters are as expected. The relative magnitudes of the marginal expenditure share parameter across models are intuitively appealing. All the long-run estimates are larger than the short-run estimate and of the long-run estimates the unconditional long-run estimate is the largest. This result is expected, in that one would anticipate that the longer the adjustment period and the less constrained the household is with respect to end-use choices the

larger the expenditure elasticity.

These estimates indicate that electricity expenditures claim a larger share of additional amounts of income in the long run. In particular, the share is larger in those cases where the household is not constrained by prior appliance selections. In cases where the household's consumption of electricity is conditioned by a fixed portfolio of end-use choices, the household's electricity response to income changes is smaller than in the case where demand is unconditioned. This empirical finding is expected and seems plausible.

In the short-run model, the estimated marginal expenditure share parameter is substantially smaller than the measured values in the long-run models. The estimated adjustment parameter implies a rather long time horizon - - about ten years - - over which households adjust electricity expenditures to changes in income. Furthermore, it is interesting to note that the estimated non-discretionary demand for electricity in the short-run model is much larger compared to the long-run model estimates. Intuitively, this is what one would expect -- that in the short-run a larger share of total electricity expenditures would be made to cover nondiscretionary electricity expenses. On the other hand, in the long-run a larger share of electricity expenditures would shift from the non-discretionary to discretionary expenditure side of the ledger as income increased.

The estimated models, shown in Table 1, also reinforce the strength of the relationship between income and electricity consumption in another subtle way. In the conditional long-run models, despite the weaker statistical relationship between income and electricity consumption, a stronger positive relationship between income and electricity is inferred by the sign of the estimated coefficients of the variables which constitute the scale factor,  $\gamma_{el}$ . Variables, such as number of televisions, home type, home vintage, and central air conditioning, are related to electricity consumption such that the proposition that electricity consumption is positively related to income is reinforced. For example, low-income households are disproportionately concentrated in older multifamily homes; the estimated relationship between these variables and electricity consumption is negative. On the other hand, the presence of central air conditioning, which is more likely to be present in a higher-income home, is of course positively related to electricity consumption.

All of the statistical evidence indicates a rather strong and positive relationship between electricity consumption and income in the Midwest Census region. In the next section, this relationship is simulated for a number of hypothetical cases.

**Income and Electricity Consumption:** The income/electricity consumption relationship is illustrated in this section by simulating changes in electricity consumption with respect to

changes in income (1987\$) after holding other factors constant. Two cases are depicted: the first uses the conditional long-run model to present long-run Engel curves under two different electricity price assumptions; the second uses the dynamic model to present time profiles under six separate electricity price/income cases.

In Figure 2 two long-run Engel curves are shown. They represent two cases in which the relationship between income and electricity are presented. The cases are identified by two different electricity prices: the low-price case, \$0.034/kwh, simulates the income-electricity consumption relationship for an all-electric home; and the high-price case, \$0.085/kwh,

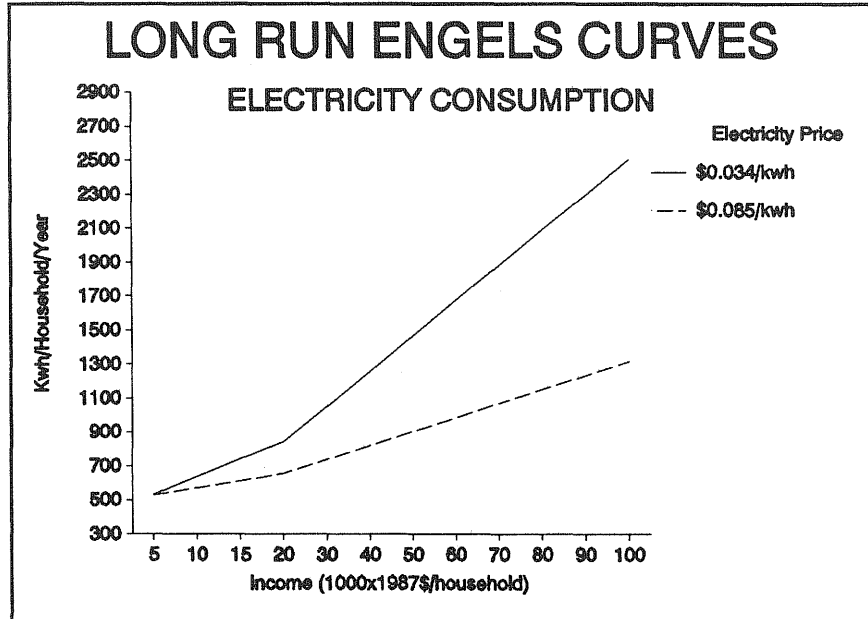


Figure 2

simulates the relationship for a baseline-electric home. For the sake of illustration electricity consumption is assumed equal in both price cases at the household income of \$5000/year.

The figure, which was derived from estimates generated by equation 5, shows a sharp increase in electricity consumption with increases in income. Moreover, the consumption paths for the low- and high-price cases diverge as income increases. This implies that the electricity consumption gap that exists between all- and baseline-electric homes, with similar demographic profiles, widens as income rises.

The presence of this phenomenon and the fact that higher income-households in general hold more electricity consuming durable goods reinforce the link between income and electricity consumption. Not only is there a marginal increase in electricity consumption as household income increases, but also electricity consumption increases by a larger amount as income rises for high-electricity-consuming households. Therefore, both the level of electricity consumption and its rate of change are positively influenced by household income.

TABLE 1. MIDWEST ELECTRICITY DEMAND MODELS

PARAMETERS	LABELS	CONDITIONAL LONG-RUN		SHORT-RUN	UNCONDITIONAL LONG-RUN
		CITY	NON-CITY		
BEL	MARGINAL EXPENDITURE SHARE	0.002695	0.003283	0.000422	0.008493
		(0.00091)	(0.00051)	(0.00039)	(0.00052)
THETAEL	DYNAMIC ADJUSTMENT PARAMETER	NA	NA	0.819881	NA
		NA	NA	(0.01569)	
ALPHAEL	DYNAMIC EFFECT PARAMETER	NA	NA	-0.52544	NA
		NA	NA	(0.32865)	
GAMMAEL	NON-DISCRETIONARY ELECTRICITY CONSUMPTION	12.15172	9.123863	41.87862	21.78608
		(3.32801)	(2.10785)	(6.78371)	(0.70168)
A1	HDD X EL HEAT	0.000386	0.00049	NA	NA
		(0.00012)	(0.00012)	NA	NA
A2	CDD X CENTRAL AIR	0.000662	0.000939	NA	NA
		(0.00027)	(0.00029)	NA	NA
A3	EL COOKING	0.071367	0.338273	NA	NA
		(0.12914)	(0.14853)	NA	NA
A4	EL H2O HEATING	0.774169	1.038981	NA	NA
		(0.30644)	(0.29861)	NA	NA
A5	EL DRYER	0.448747	0.565933	NA	NA
		(0.18759)	(0.18923)	NA	NA
A6	NUMBER OF TELEVISIONS	0.184378	0.218198	NA	NA
		(0.08120)	(0.09019)	NA	NA
A7	NUMBER OF ROOM AIR CONDITIONERS	0.102168	0.198648	NA	NA
		(0.08355)	(0.09898)	NA	NA
A8	SINGLE FAMILY DETACHED	0.200505	0.405494	NA	NA
		(0.26007)	(0.24625)	NA	NA



**TABLE 1. MIDWEST ELECTRICITY DEMAND MODELS**

PARAMETERS	LABELS	CONDITIONAL LONG-RUN		SHORT-RUN	UNCONDITIONAL LONG-RUN
		CITY	NON-CITY		
A9	MULTIFAMILY<4 UNITS	-0.06333	-0.44712	NA	NA
		(0.23519)	(0.23042)	NA	NA
A10	MULTIFAMILY>=4 UNITS	-0.35798	-1.09281	NA	NA
		(0.21925)	(0.22880)	NA	NA
A11	HOME BUILT<1950	-0.30026	-0.20962	NA	NA
		(0.18292)	(0.15041)	NA	NA
A12	1950<=HOME BUILT<1974	-0.41167	-0.09694	NA	NA
		(0.19966)	(0.13701)	NA	NA

How electricity consumption changes for a household with a given income and electricity price is also of interest. Assumed price differences are intended to capture actual variations in the prices paid by various electricity consumption blocks in many rate designs. Higher average electricity prices are paid by households which consume smaller amounts of electricity. To determine the dynamic profile among households with varying incomes, paying high and low electricity prices, equation 8 was transformed into a difference equation. The resulting equation is:

$$q_{elt} = (q_{el0} - \frac{K_0}{1-\theta}) \theta^t + \frac{K_0}{1-\theta} \quad (9)$$

where:

$$K_0 = (1-\theta) [ (1-\beta_{el}) (\gamma_{el} + \alpha p_{elt}) + \frac{\beta_{el}}{p_{elt}} (y_t - p_{ct} \gamma_c) ] \quad (10)$$

and

$q_{el0}$  = electricity consumption in the base year.

Six cases were developed using equation 9. There were three income (1987\$) classes -- low (\$10,000/household-year), middle (\$30,000/household-year), and high (\$50,000/household-year) -- and for each class a dynamic profile of electricity consumption was developed for a low- (case 2) and high- (case 1) electricity price case.

The rate of increase in electricity consumption is higher in every case where households pay a lower electricity price. Therefore, households located on a higher electricity consumption block (or maybe more accurately, for households which will windup on a higher electricity consumption block) will increase their consumption of electricity faster (or more simply households which pay less for electricity will increase their consumption of electricity at a faster rate).

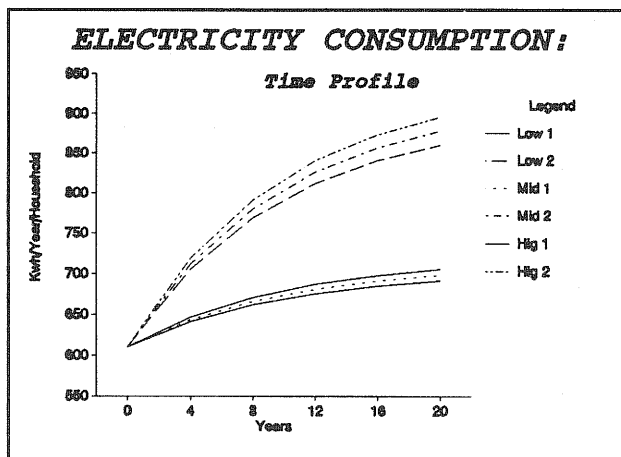


Figure 3

The positive relationship between income and electricity consumption is also portrayed in Figure 3. In each of the two electricity price cases, the rate of increase in electricity consumption is larger for higher income households. Finally, the figure demonstrates rather clearly that the variation in the electricity growth rate among income-classes increases in the low-electricity price case. This research demonstrates the strong likelihood that low income households are also low usage residential customers. It follows that rate design objectives that favor low usage customers will ultimately benefit the lower income households. The next part of this paper describes the type of information that is necessary to examine the cost incurrence patterns across usage levels within the residential class.

#### **COST-OF-SERVICE DATA AND RATE DESIGN**

Rate design is often described as more art than science. However, the economic efficiency of a rate design can be maximized by obtaining and using the best information practicable, and by full disclosure and analysis of the judgmental criteria used in the study process. We emphasize that the methods employed in conducting a cost of service study are fundamental for determining whether the results of the study are effective for implementing regulatory policy. Inappropriate methods result in misleading information that ultimately motivates inefficient rate design. We have reviewed situations across the country where utility companies are ordered by regulatory agencies to perform various cost of service and load research studies. However, the studies often lack analytical rigor and lead to conclusions which are in the self interest of the utility companies. In other words, studies which are ordered by regulatory agencies are frequently designed to justify the status quo. On the other hand, if the analytical framework is carefully specified in terms of structure and methodology, the study can be very useful.

In this section we describe an analytical design which we believe would lead to an effective residential cost of service and rate design study. We identify the type of residential cost of service information needed to conduct the study required and discuss the analytical steps in producing a cost-justified rate design. This suggested procedure for conducting the cost of service study for the residential class can easily lead to a constructive debate about efficient residential rate design within the regulatory process. The framework presented is divided into two parts: the cost of service study and how rates should be designed to reflect the cost of service by usage level.

**Residential Cost of Service By Usage Level:** A detailed residential cost of service study is necessary to obtain the appropriate, current information for the design of efficient rates. Unavoidably, in conducting such a study, subjective decisions are required at many steps of the process. Because of this, objective conduct of the study and presentation of the study for regulatory review requires that the criteria and rationale for each such decision be disclosed in detail. The following discusses in some detail the steps in determining the cost of service by usage level.

**Customer Cost:** The cost attributable to individual customer accounts should be determined on both an average embedded and a marginal cost basis. The marginal customer cost should be computed by aggregating those costs related to new customer accounts that do not vary with usage or demand. Also, because a typical new account will not require installation of the full complement of customer premises facilities, customer costs should not include the cost of installing such equipment. Use of a minimum distribution study is inappropriate in determining customer costs. The minimum distribution system approach to estimating customer-related costs assumes that the utility planner designs and builds the distribution system based on the number of connections that will be made within some specified geographic area. This is a highly biased manner of assigning residential customer costs because it assumes that the distribution system would be built in a similar manner regardless of customer size. Use of the minimum distribution system concept for estimating customer costs results in larger individual customer costs for smaller users than what reasonably reflects the fixed cost of service.

The issue of what should be included in customer cost is usually strongly debated. Therefore, all individual components included in the calculation of the customer cost should be identified and described, and the amount of the component stated. Only in that way can regulators make informed decisions on the rate structure ultimately approved. The annualized customer related plant-in-service component of the customer cost should be fully documented -- including the rationale and methods used to allocate plant to the residential customer. In addition, the rationale for all other full or partial cost allocations should be provided. The explanation should always address the question "Why is this (expense or plant) related to the customer account, and not to demand or the level of usage?"

**Conduct or Assemble Residential Load Research :** Adequate current residential load data are indispensable to an accurate allocation of capacity and energy costs across usage levels in a manner consistent with the allocation across different customer classes. The required load research involves evaluating demand and usage levels for a representative sample of consumers. (Sampling is unquestionably necessary in residential load research because it is not economically feasible to demand meter every customer in the class.) The sampling process must be carefully designed to capture load and energy use behavior (by usage subclass) economically and

with statistical confidence. The sample is developed by installing special meters on a stratified random sample of residential accounts. The meters should record for each customer the maximum level of demand in each measurement time interval, as well as total monthly usage. In developing the load research, the following items should be addressed.

- The sampling methods used to assure an adequate sample size for each level of usage should be documented and available for review.
- The study should demonstrate that the sampling technique is efficient and accurate in representing the population of electricity users.
- The rationale for selecting the particular increments of usage to be evaluated (e.g. 100 kWh per month increments) should be documented.
- The data should be presented in a manner that permits ready determination of which consumers have demands that are coincident with the system peaks.
- All statistical analyses used in deriving implications from the sample data should be provided, including regression equations and diagnostics. Without this information (which is usually collected for interclass allocations) it is impossible to reflect cost of service for residential customers in rates accurately and consistently with interclass rate design procedures.
- Demographic and end use data on the households in the sample should be collected (data on type of housing, addresses, zip codes, or FIPS codes, head of household, appliances, etc.). The load research necessary for the cost of service study presents a unique, economical opportunity to collect such data which is unavailable in demand-side management activity. Without such data, meaningful review of program effectiveness by socioeconomic stratum is very difficult if not impossible.

**Determine Energy Cost by Usage Level:** The load research should be used to determine the energy cost by usage level in a manner consistent with the method of determining energy costs across customer classes. For example, if usage for different rating periods is used to allocate energy costs across customer classes, the same method should be used to allocate energy costs among usage levels within the residential class.

**Determine Capacity Costs By Usage Level:** As with the energy cost, the load research data should be used to determine the capacity cost by usage level. Capacity cost for a given subgroup of customers is related to that subgroup's demand levels and to the coincidence of demand with the levels of system demand. Allocation of the capacity costs across usage levels should be consistent with

the procedures used to allocate costs across customer classes (e.g. residential, commercial, industrial); the same methods can be applied to subclasses (e.g. usage levels) when load research data are available (see above). The load research should be utilized to divide the residential class into subgroups e.g., ranges of usage, and to apply each step of the cost-of-service allocation process on the subgroups just as is done across the classes of service.

For example, capacity costs may be allocated to various periods based on the system loss of load probability in the period. Using this method, the relative demand levels during periods where loss of load probability is greater than zero are used to allocate capacity costs across customer classes. If this approach is used, the relative demand levels by usage level (as derived from the residential load research) in the loss of load probability periods should be used to allocate capacity costs.

As another example, if contribution to the system peak is used for allocation, the residential load research should be used to derive estimates of each usage level's contribution to the peak. Similarly, if coincident load factor is used to allocate costs across customer classes, the same method can be applied to the usage categories.

**Design of Residential Rates Based On Cost of Service Across Usage Levels:** The objective of this part of the paper is to explain how the residential cost of service information can be used to derive an efficient rate design for summer and non-summer billing seasons. The explanations will be easier with the help of a table like the following.

RESIDENTIAL COST OF SERVICE RESULTS BY USAGE LEVEL				
Usage Level (Kwh)	Customer Cost (\$/Mo.)	Energy Cost (\$/kWh)	Capacity Cost (\$/kWh)	Total kWh Cost
0 - 250				
251 - 500				
501 - 750				
751 - 1000				
1001 - 1250				
1251 - 1500				
1501 - 1750				
1751 - 2000				
> 2000				

Workpapers should detail the individual components of each major cost element. The table lays out the components of the cost-of-service study in a manner consistent with the design of residential rates. Residential rates are usually a two-part design with a flat customer charge and an energy (per kWh) rate. The calculated energy charge must capture both the energy cost component and the capacity cost component. In an efficient two-part design, the energy charge across usage levels will change in a manner consistent with the capacity cost causation characteristics of the usage category. The following paragraphs discuss using cost results to design the rate.

**Set Customer Charge Based On Appropriate Cost:** Many economists would argue that, from a marginal cost standpoint, the customer charge should be eliminated. Others maintain that the customer charge should include, at the most, the carrying charge on the drop, meter, and any other equipment needed to provide service to the customer beyond the customer's property line. Both marginal and embedded cost information should be provided in defense of any proposed customer charge, in the detail specified above. The customer charge should be desegregated into individual cost components for regulatory review purposes. In addition, evidence should be provided demonstrating that each component of the customer cost does not vary with usage or demand levels. For example, many utilities include bad debts expense as a customer cost: is there empirical evidence that the "bad debts expense" does not vary by usage or demand levels?

**Determine the Appropriate Energy Cost Portion of the Seasonal Energy Charges:** Using the production cost modeling process, determine the energy cost for the residential class for the summer and non-summer billing periods. If appropriate, examine any differences between energy costs across usage levels and properly incorporate them into the rate structure. Complete the table for the energy cost by usage level.

**Determine the Capacity Charge Portion of the Seasonal Energy Charges:** Using the cost of service method discussed above, determine the capacity cost for each usage level on a per kWh basis for each billing season. The determination of capacity charges by usage level should be in a manner consistent with the allocation methods used in the cost of service studies for interclass allocations.

**Add the Energy and Capacity Cost Columns to Determine the Total Variable Portion of the Residential Rate Design:** Adding the energy and capacity columns provides an informed basis for two steps in the rate design process: 1) determining the magnitude and direction of the energy charge; and 2) determining the blocking structure. Looking at the "Total" column will answer questions regarding whether the energy charge should be declining, flat, or inverted. It will also give the rate designer a clear signal regarding where rate blocks should be broken (i.e. whether the structure should be 0 -400kWh for the first block or 0 - 250kWh, etc.).

**Allocate Revenue Requirements in Excess of Marginal Costs:** In many jurisdictions marginal cost of service studies are required; yet, interclass revenue allocations and intra-class rate designs must be set to recover the embedded cost based revenue requirement. The reconciliation of marginal cost rates to revenue requirements should be done for the intra class allocation of revenue recovery consistent with the manner in which it is accomplished across customer classes. If the interclass allocation is accomplished by using the equal percentage marginal cost method, this should be used for reconciling marginal costs to revenue requirement for usage categories within the residential class.

#### SUMMARY

The techniques for load research data collection and analysis are available to address one of the longest standing dilemma's of the regulator -- the balancing of equity and economic efficiency objectives in residential rate design. This paper examines two very different rate designs in use by different large utilities with demographically diverse customer bases to suggest that both objectives can sometimes advance simultaneously. Further, an innovative application of well tested modelling techniques establishes a correlation between income level and electricity usage. That relationship provides options to regulators and utilities in areas where legal restrictions or political constraints preclude special programs on rates for low-income persons. Finally, a procedure for utilizing these tools is presented to create an objective, efficient and equitable rate structure for all levels of usage and income.



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**3. UTILITY MERGERS AND REORGANIZATIONS AND PUHCA REFORM**

**Chairperson: Dan Johnson**

**Public Utilities Commission of Ohio**



**'TWAS A MARRIAGE MADE IN HEAVEN  
TILL THE FAMILIES CAME TO TOWN-  
THE PELODRAMA OF THE POST-MERGER PROBLEMS OF PACIFICORP**

BY  
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**Author's Note.** A pelorus was a mid-1800's navigation device resembling a mariner's compass, but without magnetic needles and having two sight vanes by which bearings are taken. (I have a hard time imagining a compass without magnetic needles, but that's what the book says.) That image of having no needle pointing North but two different sight vanes is so parallel to the experience of regulators in trying to resolve Pacificorp post-merger problems (as you will soon see) that I have taken the liberty of turning the word "melodrama" into "pelodrama" wherein two points of view are presented.

**Introduction:** In the fall of 1987, Pacific Power & Light (PP&L) proposed marriage to UP&L and offered a little gift, a bride-price if you will, to her parents. Utah Power & Light (UP&L) blushed and simpered a little and then agreed. It seemed to be a marriage made in Heaven; by pooling their assets the marriage was far stronger and more efficient than either partner alone.

As is traditional in marriages, the couple took on the groom's name, although he modified it slightly to make it more pleasing to the bride and her relatives, as well as the civil authorities. On the other hand, the bride was very modern in that she kept her name in all the circles in which she was used to traveling.

They agreed to take each other just as they were, with all their belongings as their dowry. With this agreement, all they needed was permission from the civil authorities. They anticipated a few problems from the authorities because they were, after all, related, because the marriage united their fortunes and made them very powerful, and because they both had jilted suitors and others who had wanted to share their favors, even some who had (oh, whisper it oh, so softly) shared their favors in the past.

These anticipated problems were overcome and even some unanticipated ones and in January of 1989, the marriage was consummated. The happy couple perhaps thought that their problems were over. Unfortunately, the problems were just beginning, as relatives and neighbors far and wide began to fight over the benefits of the marriage.

The tale of this marriage, its woes and its successes is a cautionary tale to others who might want to marry, and to those who might be concerned about such a marriage. The obstacles are probably not unsurmountable, but they are formidable. Heed ye and learn!

**The Happy Couple:** This marriage did indeed seem to be a marriage made in Heaven. The couple were very complimentary. Even their builds were complimentary. He peaked in the winter and she peaked in the summer and when they were in each other's arms, they fit so nicely together. While two really couldn't live as cheaply as one, they could share a lot of overheads, like insurance, with a lot of savings. Their diversity made their energy go further bringing large additional savings. They forecast savings of \$50 million in just the first year they were living together, up to near \$200 million annually by the fifth year.

PP&L had connections throughout the Northwest and down the West route to California. UP&L had her own vast connections to the Southwest, to Arizona and New Mexico and Nevada, as well as east to Colorado and Wyoming. PP&L had some Northwest hydro power of its own and access to more. UP&L had thousands of tons of low-sulfur, high-BTU coal reserves.

They also had a complimentary financial picture. One had lots of assets, but was a little short on cash. The other had some extra cash to share. In every way that counted, they were an ideal couple.

**The Anticipated Problems:** The groom, PP&L, was a tall skinny gent, involved at least a little in six states. The bride, UP&L, was a slightly chunky lady with most of her weight in Utah, but also stretching out to include two of the groom's states. Between them, they would have to get pre-approvals from two sets of parents (shareholders), seven states and three federal agencies. When the judge said, "Does anyone have any reason why this couple should not be joined?", they wanted no protests.

The groom's parents liked the marriage. The bride's were not so sure, but the pre-nuptial gift of a high stock price apparently persuaded them. Like engaged couples everywhere, they made certain commitments to themselves and their families. They promised the Northwest families that there would never be a rate increase due to the marriage. They made the same promise to the UP&L families but added a promise that rates would go down 5-10% within four years.

That seemed to satisfy most of the relatives, but it soon became apparent that the Utah PSC and FERC still had some concerns.

After completing its own detailed studies, Utah finally agreed with the marriage, if FERC didn't impose inappropriate restrictions. But FERC, there was the rub.

#### **The Unanticipated Problems:**

**The Phantom Toll-booths:** FERC seemed made to order for jilted suitors, cousins, second cousins, even third cousins. Other private utilities, REA's, municipals and Independent Power Producers all lined up to object to this marriage. Even some large retail customers objected. While some opposition had been contemplated,

particularly from the public power groups who didn't like anything that their private cousins did, the couple were surprised by the attempts of the private power companies and the retail customers to gain some advantage from the merger. This seemed like the cousins setting up toll booths along the route to the marriage, to extract a toll as the condition for approval of the marriage.

The primary grounds for objection used by the objectors was that the efficiency of the marriage made them too competitive for the favors of others. While that was the primary grounds, every means possible was used to delay or destroy the marriage, or to add so many conditions and restrictions to it that the couple would give it up as a bad deal. One representative of the couple was cross-examined for nearly five full days at FERC.

One of the restrictions proposed at FERC was that the merger shouldn't go forward until a decision had been made on how the couples relatives would share in the benefits of the merger, how the benefits would be allocated. The objectors said that making the allocation decisions would be so hard as to be effectively impossible, thereby invalidating the marriage. A witness from the Utah PSC, trying hard to protect their authority in the face of FERC encroachment, stated that while allocation is always a difficult process to get multi-state agreement on, it was possible to do and should be left in the hands of the states to resolve post-marriage.

The twosome recognized that this marriage would have a price and so private contracts were negotiated with the private utilities and some public agencies to solve their particular problems. The couple decided to take their chances on winning out over the other objectors on the unfair competition issue and the benefits allocation issue. After some troublesome false starts by an Administrative Law Judge, the FERC finally ruled in the case.

To solve the competition issue as they saw it, they required that the couple provide access on their street and driveways (transmission lines) to private and public power groups as they demanded it. The utility had to define its remaining excess capacity, REC, on the transmission lines and make it available to competitors under a fairly complex tiered structure. The FERC did not include the second cousins in the deal, the IPP's and retail customers.

These cousins appealed the FERC order. After all, they hadn't gotten their share of the toll. The Court of Appeals said that the FERC decision was not well based in the findings and remanded the issue of mandatory wheeling for IPP's and retail customers back to FERC. FERC held an additional hearing and issued two orders, one on each issue, supporting their original position. Each of these have now been appealed and the fight continues at this time.

The FERC order did not mention the allocation issue, so it apparently agreed that the states would handle it on their level.

**Slaughtering the Goose for its Golden Eggs:** The Utah PSC decided that it could go along with the FERC conditions, so all the approvals were in place (notwithstanding the appealed decisions) and the marriage went forward. Now it was time to figure out how to divide the benefits that resulted from the marriage.

The Northwest group of relatives had previously had family reunions to get together and gab about how to handle the groom. The bride's relatives had done the same. Obviously, all that had to be done was get the two groups together in a super reunion, present them with the couple's plan for sharing the benefits and live happily ever after. In the naivety of their youth, the couple had not reckoned with the private agendas of all the relatives.

The Northwest relatives had not asked for nor gotten a promise of lower rates as a part of the pre-nuptial agreement, only a promise of rate stability. However, it soon became apparent that they expected to share in the lower rates promised to the bride's family. As a matter of fact, because the groom was larger than the bride, they wanted more than half of the benefits.

In addition, they expected the groom's rates to remain below those of the bride, with no true merger of pricing for the couple who were now one. They also expected the groom to hold back his own bed (low cost hydro power) from the marriage for their own private use.

On the other hand, the bride's relatives suggested that since most of the efficiencies were occurring in the bride's costs, she should have the majority of the benefits. And if the groom got to keep his bed, she should keep the benefits of her driveway (the transmission line capacity) that she brought to the marriage and the tolls that she charged for it. They also concluded that unless the two divergent rates were ultimately rolled in to one set of rates, less than fully efficient decisions by the couple might result. Everyone recognized in the back of their minds that if they got too greedy, resulting in sharing more than there was to share, the couple would pack up their bags and benefits and move to another jurisdiction like FERC, thus effectively slaughtering a goose that promised to lay golden eggs, to mix a metaphor. Some recent court rulings indicated that in such cases the states would have to live with whatever FERC ruled. This was not an attractive alternative, nor did the couple ever threaten this, but nonetheless it was clearly a possible consequence of too much greed. In spite of that, the two sets of relatives couldn't agree on what was a fair distribution of merger benefits. They each seemed to expect the others to give in.

**Allocation Problems:** Obviously, the first problem had to do with defining what a fair share of the marriage benefits was. A second related problem was "How do you measure merger benefits?" The third key question was "Should hydro and transmission line benefits be reserved for the source?" The fourth question was, "What allocation method will accomplish all this?" Buried within all these questions was two troubling facts: 1) you can't allocate benefits, all you can allocate is revenues and costs, and 2) these relatives (state staffers) had no authority under law to reach



an agreement. All they could do was see if they could agree among themselves and then attempt to persuade their Commissions as to a wise course. Undaunted by all of these problems, the relatives agreed to meet jointly and frequently to attempt to resolve these problems. As you might expect, the happy couple were also very anxious that a mutually beneficial result be found.

**Measuring Allocation Benefits:** The most direct way of measuring the benefits of the marriage would be to compare the costs each partner within the marriage to what the costs would have been if the marriage had not taken place. Unfortunately, guessing what those Stand Alone costs would have been takes a crystal ball of the finest quality. Both the bride and groom had forecasts of their own costs before the marriage, but the forecasts were not based on the same assumptions, or on the realities found at the time of the marriage and after.

If the Stand Alone cost estimates were inaccurate, then the estimated split of merger benefits would be inaccurate. As time passed, these Stand Alone estimates would become more and more inaccurate. All the relatives seemed to understand this, but no good alternative was found at the time, so this became the basis of fairness decision making on allocations. Considerable effort was spent by some of the parties to make each of the Stand Alone's as accurate as possible and to base them on the same assumed future.

**Deciding on Fairness:** The concept of fairness was a new concept in this type of business. Oh, the word had been used before, in the economic sense. In that case everyone agrees that fairness is best achieved when prices are set based on costs. Now, however, we are talking about what should happen when a low system cost groom married a higher system cost bride, with obvious benefits to all concerned. If the couple fully operated with just a joint bank account, most of the savings were flow to the bride's family, whereas in reality, if both partners had not agreed to the marriage, their would be no benefits occurring.

The relatives were finally able to agree that a 50%-50% sharing of marriage benefits between the two sets of relatives was reasonable and fair. After all, if they had not both agreed, no marriage would have occurred, so they each had a 50% responsibility for making the marriage a success. They also decided that each of the individual relatives (states) should have some (undefined) share of the savings, with a guarantee of no price increases anywhere, anytime. Even with this agreement, their problems weren't over. Because the bride had higher costs at the time of the marriage and a higher projected growth rate, most of the savings over Stand Alone costs would tend to occur on her side and her share would tend to increase over time.

An initial agreement was hammered out for one year. Everyone used that time to try to reach an agreement that would last longer. The couple suggested an allocation method that was largely rooted in traditional cost allocation, but had some adjustments to achieve an approximate 50-50 sharing of the benefits between 1990-92. The bride's family would get less than 50% the first year and more than 50% the last

year, so the average would be reasonable. In future years the bride's share got even larger and that was not acceptable to the groom's family, so the parties negotiated a three-year agreement consistent with what the couple recommended. This agreement came to be known as the "Consensus Agreement." Everyone realized that such an agreement was not binding on anyone, particularly any Commission, but they all agreed to try to promote it in their individual states.

The Consensus Agreement differed from traditional cost-based allocation schemes in about a half dozen ways. Foremost among these was the allocation of pre-merger houses and driveways (generation and transmission plant) to the one that owned it before the merger, with the understanding that the plant would ultimately fully depreciate and all costs would be merged. All new plant was treated as a joint resource and all current expenses treated as joint expenses and both were allocated under traditional methods.

Another significant departure from usual allocation schemes was reserving to each side a significant keepsake that they had when they were single. They each kept their own bed (existing hydro system) recognizing that the groom's was much bigger and nicer. They also each kept their own driveway extra capacity (transmission lines), recognizing that the bride's was collecting more tolls and that the bride's tolls would grow faster than the groom's. These retentions became known as "endowments," and seemed to carry the flavor that they were gifts from a beneficent God and they weren't going to be shared with anyone, anytime.

Some of the relatives tried to point out that the same financial sharing of benefits could be achieved without resorting to these endowments, but it soon became apparent that the problem was emotional and political and thus not readily amenable to common sense.

The bride's relatives, although generally disliking the endowments, agreed to Consensus expecting that when the transmission endowments began to outweigh the hydro endowments that endowments could be forgotten. These foolish people had not reckoned on human nature, for the groom's family immediately began looking for more endowments that they could reserve for themselves. As they did, the bride's family found endowments of their own to counterbalance them. The endowment war has waxed hot and cold at various times since Consensus was reached, but is still an open and emotional issue. No agreement has been reached on the inclusion of endowments for the post-1992 period.

**Additional Problems:** While every relative wanted to share in the benefits of the marriage in terms of lower utility bills, no one wanted any negative impacts. The marriage allowed benefits from lower employment, expenses and investment in rate base, but none of the major states wanted any reduction in employment, or expenditure or investment in their state. At the same time, no one wanted any new pollution-producing power plants in his state.

Utah approved the merger only with conditions that the relative balance between the states be maintained, and that the bride would continue to live in Utah. The bride and groom each maintain separate households even though household expense has gone down appreciably by sharing of some facilities. The groom has the bathroom and living room and the bride has the kitchen and den. (Interpret those how you will.) This is still an issue of concern to regulators and state government in the broader sense, and is being carefully monitored on a regular basis.

The couple have asked recently that everyone agree that the marriage is in the past now and that all covenants of the marriage have been fulfilled. They want to get on with life together without enforced separateness. But the relatives are still concerned and so have not made that agreement.

**Where Goes the Marriage?:** As the end of 1992 and the Consensus agreement approaches, the relatives have been meeting to try to find some new agreement. Unfortunately they are still having the same old problems. They can't agree on how to measure fairness, they can't agree on what fairness is, they can't agree on an allocation method to accomplish fairness, and at least some of the groom's relatives still want to keep their endowments. To make matters worse, Consensus as practiced in the real world has not resulted in the level of sharing that was forecast in the models. The bride's family have not yet received 50% of the benefits in any year, as measured against Stand Alone estimates.

There are a few areas of agreement between the couple and the families. They have agreed that Consensus is not adequate for any long term future, and that any new allocation method adopted ought to be simpler and more consistent with traditional allocation methods than Consensus.

**Measuring Fairness Revisited:** Another area of agreement between the relatives is that measuring fairness against estimates of what the Stand Alone Companies might have done is not very valid. No one knows what the bride or groom's fortunes might have been as singles in the years to come. Forecasts made in 1989 could not anticipate the fish problem in the Northwest, or the clean air problems of coal plants or any other of dozens of changes that have happened in the last four years. Also, any state that has studied the Stand Alone estimates comes away with a concern about their validity even with the assumptions they had at the time.

Several other methods have been proposed to measure benefit sharing. The most simple is a comparison of the allocated revenue requirement under a proposal to the fully rolled-in revenue requirement. If a goal is to move toward rolled-in rates, then this measure tells the families how well they are doing. Unfortunately, the families can't even agree that rolled-in rates is a good idea.

Another approach is to use statistics to develop some type of indexing to forecast the bride and groom's Stand Alone revenue requirements. If, for example, historically the groom's revenue requirements had a fixed relationship to the Industrial Price Index,

or some other magic number, then the future Stand Alone's could be forecast from a forecast of the Industrial Price Index. This approach has two problems. First, if we use this, we are using someone else's guess of the future to replace our own. Some of the family are concerned about that assumption. Second, the bride had made some significant reductions in her living expenses in the last few years before the marriage. That would tend to invalidate long term trends. Additional work is now being done on indexing to try and resolve these problems.

The most recent approach to measuring fairness is now called the Merger Accumulated Savings approach. In this method, the future revenue requirements of the members of the family are first discounted back to 1990. Then they are compared to the 1990 Stand Alone and the reduction in revenue requirement represents the present worth of merger savings. Then the year-by-year savings are accumulated to determine the total impact on each family member since the merger, on out to various forecast periods.

Two concerns have been expressed about this method. First, there is disagreement over the proper discount rate to use. Second, by using a single discount rate for both families, the method does not take into account that the bride was faster growing and thus has more savings resulting from the merger. Work is also now being done to try to refine this method and get agreement.

**What is Fairness Revisited:** The families are still dancing around the issue of what is a fair division of the marriage benefits. The bride's family is tending towards insisting that an allocation method should tend toward a long-term 50%-50% sharing of discounted, accumulated savings in revenue requirements. This requires a measurement method that is not yet agreed to, and thus the groom's family is hesitant to accept such an approach. Some of them are still murmuring about how they were bigger in the first place and so should get a bigger share of the benefit. No agreement has been reached to date on what fairness is, or how to achieve it, either as another interim solution or as a permanent solution.

**Conclusion:** The amazing thing about all of these problems is that in spite of them, the marriage has gone ahead and benefits are flowing to all the family members. The actual benefits experienced are slightly ahead of the forecast by the couple at the time of the marriage and are now approaching \$100 million a year.

A second amazing thing is that in spite of all the theoretical disagreements, twice now the families have been able to agree on at least a temporary split of the benefits. Even though they can't agree on how to measure fairness, or what it is, they have agreed on an allocation method that delivered some significant bottom line marriage benefits to them.

We now seem no closer to a permanent agreement on fundamental issues than we were four years ago, but we may well agree on yet another stop-gap solution before time runs out. This speaks well for the system of grass-roots-up regulation where

concerned regulators can sidestep seemingly irreducible problems and reach solutions that benefit everyone.

Contrast this with the other possibility. If FERC or anyone else had insisted that allocation problems be resolved before the marriage went forward, the marriage would still not be consummated, would in fact probably long since have been abandoned and the families involved would be some \$300-400 million poorer.

Though such marriages of unequals can sometimes bring friction, they can also bring the most growth and savings. Although it is hard to imagine a navigational instrument like the pelorus with no directional needle and two sighting vanes providing any clear direction, obviously it must work. So too, state regulators from two systems, in spite of politics, vested interests and concern for their ratepayers, can work together to resolve the problems without eliminating the benefits. The local families can work together successfully to get the job done; we don't need any help from our uncle back East.



MANAGEMENT-IMPLEMENTED DOWNSIZING

A WINNING COMBINATION

BY

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The City of Norwich (Connecticut) Department of Public Utilities recently undertook a downsizing and reorganization effort in response to severe economic pressures preceding the current recession. The process involved a planned approach controlled and directed by Senior Management Staff. The experience indicates that a management-implemented downsizing plan can achieve economic goals while maintaining management control of the process, without the need for major outside consultant involvement.

Background.

Norwich is a community of 40,000 in southeastern Connecticut. The City has owned the Gas and Electric Utility since the turn of the century, later adding Water and Wastewater Operations. Total annual revenues for the utility are \$40,000,000. The recent recession was preceded in southeastern Connecticut with an economic down-turn signaled by flatened sales and loss of industrial base. These economic conditions had a dramatic effect upon utility revenues requiring the consideration of annual rate increases, affecting all four utilities - most acutely natural gas.

To maintain competitive rates, the NDPU undertook a senior management-driven self-assessment leading to downsizing which "trimmed" forty-five positions, and reduced annual operating expenses by more than \$2.3-million per year, or 25% of employee-related costs.

The key to effective downsizing is sustaining the reductions for the long-term. Downsizing has been epidemic in recent years. Typically, it is done with a "slash and burn" mentality. Too often, across the board percentage cuts are prescribed as a short term relief. Inevitably, numbers creep back up as the economy improves. Norwich was determined to take a planned approach and sustain the reductions while, at the same time, improving service and customer focus.

Four distinct stages were utilized to move through the downsizing process: training, team building, decision making/implementation, and rebuilding. The last stage proved to be the most important in terms of providing better levels of customer service while sustaining the reduction in cost and improvements in efficiency.

Why downsize? Downsizing was undertaken in response to economic pressures, involving a mandate to lower costs. During the process, however, the emphasis shifted to one of repositioning the agency to remain price competitive for the future.

The goals set by the Norwich Management Team for downsizing involved: (a) price competitiveness, (b) reduction of costs through efficiency improvements, (c) a need to sustain the reduction for the long term, and (d) a pledge to maintain or improve customer service quality. The process was driven through planning and information.

Training. Before beginning the downsizing work, effort was devoted to training Management Staff in up-to-date management techniques. The work of building skills, involved basic management training, communication skills, people skills, group problem solving, and an emphasis on the participation of the entire Management Team in the decision-making process. The participatory management change was the biggest cultural difference which an outsider would see in the before and after "snapshots" of the NDPU. Building management communication and people skills also helped raise confidence within the Management Team, convincing team members that the employee reductions were possible without reliance upon an outside party to lead the way. In areas where senior management did not have specific technical skills, the NDPU utilized outside consultants as team members to provide information and participation in the decision-making process.

Selecting the right team members proved to be an early key to success. At the beginning of the process, team selection was directed at the implementation and rebuilding stages. The right team members are those who will have to make the process and the changes work, remembering that the focus must be on improved efficiency, lower costs, and improved service quality. Viewing the selection of team members from the vantage point of the end of the process made the selection easy. The right individuals, in our case, were senior managers with organizational clout, wide-ranging knowledge of the operations, and skills to implement the resulting decisions. Some realignment was necessary to "put the right people in the right places", and those left out of the process were not necessarily happy. Be that as it may, those involved must be able and constitutionally capable to implement the results.

Team Building. The team-building stage capitalized on the newly developed management skills by focusing the team on the issues of competitiveness and improved customer service. Management training was offered to all NDPU personnel down through the first line supervisors. This involved a group of some thirty individuals, too large for the group's decision-making process. The right managers for the decision-making/implementation stage were brought together and built into a decision-making team. Each individual was encouraged to focus on the overall company needs without turf protection concerns.

The Senior Management Team developed short term business plans, set overall goals and targets, and developed the necessary information and management systems to effectively measure the proposed changes. In order to assess the effectiveness of potential changes, cash accounting and budgeting systems were developed, including forecasting methodology and the necessary software to provide "real time" information to assess possible changes.



Decision Making/Implementation. The NDPU Management Team developed a unique process for the downsizing review. The basic tool was a breakdown of job functions in every position within the organization. With this information in hand and beginning at the bottom, the approach involved asking three questions of each job function:

- ° Does it need to be done? If no, eliminate it.
- ° If yes: Can the function be subcontracted at a lower cost? If the answer is yes, search out specifics on subcontracting.
- ° If the answer is no: Is someone else in the organization also doing this, or a similar function? If the answer is yes, can the position, or at least the functions, be combined?

This third question provided most of the savings generated. Many positions were found to include job functions similar to those found in other positions.

#### Position Combinations:

System Construction Inspector  
Collector/Meter Installer  
Gas Meterman/Gas Serviceman  
Watch Engineer/Gas Plant Operator  
Maintenance Superintendent/Operations Superintendent  
Engineering Management/Operations Management  
Accounting/Customer Service  
Generic Accounting Positions  
Gas/Water/Sewer Clerical Staff

#### Subcontracting:

Janitorial Service  
Energy Audits

The process resulted in the complete reorganization of the NDPU from ten distinct "divisions" to three functional areas. All underground utilities were combined into one division, electric operations were left as a second division, and all other administrative functions were grouped under a third manager. This resulted in three sub-teams being formed within the NDPU, and has brought like functions together in terms of planning and control. Staffing was initially reduced by some forty-eight positions. An additional eight positions have been eliminated through attrition since the initial downsizing.

After decision-making was completed, implementing the changes was done quickly so that the organization could move on to the rebuilding phase. Employees heard from top management first what the changes involved, both good and bad. The press was brought in for a full briefing before they heard about the process and demanded information. Press releases were provided with good factual information and the reasons behind the downsizing effort. The press was supportive because the key reason behind the changes was the need to remain competitive and to keep control of rates.

Employees unions suggested alternatives to layoffs and position losses. Management listened to viable alternatives which provided the same level of savings. At the same time, Management was firm on the need for change and cost reductions. Top managers were required to develop "thick skins". Anger was directed at them, as individuals. Had they reacted with anger, the rebuilding process would have been that much more difficult. We simply accepted the fact that anger is a reasonable reaction from employees who had little or no part in the process. We also found that the storm of protest and anger continued for some time.

Rebuilding. The last stage in the process involved rebuilding trust within the organization so that new challenges could be met, and the organization could move forward. During the process, employees were laid off and many others were displaced or given new job duties. The entire organization was directly affected in the downsizing effort. Managers had to learn to deal with the entire employee population, not just groups which appeared to have been hit the hardest.

Positive steps in the rebuilding process were:

- ° Visibility. Managers did not hide after the downsizing was announced and implementation began. They let employees know that their leaders within the company were not ashamed of the decisions they had made.
- ° Share data. Senior Managers were willing to discuss the changes with employees, answer their questions and share data concerning the savings, while remaining steadfast that the decisions were reasonable and well planned.
- ° New environment. The key to the rebuilding effort involved the recognition that employees had gone from a safe environment to an unsafe, uncertain future.
- ° The future. Employees had gone from an environment where they felt in control to one in which they felt no control. They needed to be involved in the control of their future. Participation at all levels in the organization is absolutely essential in the rebuilding process. This was achieved by involving employees in issues such as safety, equipment selection, project planning, annual budgeting, and work practices. Employees rose to the occasion when given the opportunity to help control and set the parameters for their future.

#### Summary.

The Norwich downsizing involved the four stages of training, team building, decision-making/implementation, and rebuilding.

Training of management personnel was required to build people and team work skills.

Team building, after proper selection of team members, developed the working relationship within senior management for open, honest discussion and decision-making without the hindrance of turf protection.

Decision-making was accomplished through a functional analysis and a restructuring of the organization along functional lines. Functions and positions were combined wherever possible, unnecessary functions eliminated, and subcontracting employed as a means of cost-savings. Implementation was swift and started with good press coverage and immediate information about the changes imparted to employees first. Rebuilding involved employees in the participatory process of regaining trust by planning and building the future together.



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**ACQUISITION PREMIUMS AND THE SELLING UTILITY;  
LEGAL AND POLICY ANALYSIS USING THE  
CENTEL/UTILICORP MERGER AS A CASE STUDY**

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## I. INTRODUCTION

This paper provides two opposing analyses, one from a Utility perspective and one from PSC perspective, of ratepayer rights to gain in the value of a utility enterprise. The paper draws from the Centel-UtliCorp electric utility acquisition in Kansas as a case study to analyze economic, legal and regulatory policy issues in allocating gains. The paper is divided into four sections. The first section is a factual summary of the Centel-UtliCorp acquisition proposal. The second section gives a PSC perspective of how gains in utility value should be allocated between selling shareholders and ratepayers, the third section provides an analysis from a utility perspective, and the fourth section is a summary comparison of the two analysis.

## II. THE CENTEL-UTILICORP MERGER PROPOSAL

Centel is primarily a telecommunications company, but it also provided electric service to ratepayers in Kansas and Colorado. On February 15, 1991, Centel and UtliCorp made a joint application to the Kansas Corporation Commission (KCC) to transfer Centel's electric utility assets in Kansas to UtliCorp, an electric and natural gas utility with operations in eight states, including Kansas. UtliCorp proposed to step into Centel's shoes in the sense that it would continue providing electricity to all of Centel's ratepayers, using the same power sources and generating and distribution systems which had been used by Centel. The only issue before the Commission was the approval of the transfer, no request for recognition of the acquisition premium or increase in rates was included in the application. UtliCorp acquired, at book value and for cash, all of the assets and liabilities of Centel's electric properties in Kansas, except for its eight percent (8%) interest in the Jeffrey Energy Center (JEC) generation station. In order to acquire Centel's generation assets, UtliCorp proposed to pay a \$50 million acquisition premium to Centel. However, the proposal did not call for a direct, cash acquisition premium payment for the asset. Instead, according to the proposal, Centel would sell the generation assets directly to Wilmington Trust Company at a purchase price estimated to be \$50 million in excess of book value. UtliCorp would then lease the assets from the trust company at a lease payment reflecting the purchase price, less a share of tax savings made possible by the transaction.

The net effect of the entire transaction is for UtliCorp to pay, and Centel to receive, an acquisition premium for the sale of the utility, that is, the amount by which market value exceeds book value of all utility assets less liabilities. The effect of the transaction on ratepayers will depend on how the acquisition premium is treated in the next rate case.

Because time was of the essence on regulatory approval, parties to the case crafted a settlement agreement which allowed the Kansas Commission to approve the transaction. The settlement agreement allowed the sale, but deferred until the next rate case the issue of whether ratepayers are entitled to maintain a share of the gain reflected in the sale of Centel to UtliCorp for an acquisition premium over the book value of the Centel assets.

### III. A PSC PERSPECTIVE

#### A. Broad Overview

Retail markets for electric power tend to be monopolistic and must be regulated; capital markets, on the other hand, are generally considered to be workably competitive and capable of producing optimal allocations of assets without direct regulatory control. However, for assets used in the production of a regulated output, this efficiency producing feature of the capital markets is dependent on appropriate investor expectations of regulatory action. Regulators can facilitate the market process and encourage transactions to take place which are truly in the public interest by providing proper output pricing parameters and rules. This is because the value of a production asset or a firm to an investor is the discounted value of future cash flows the assets or firm will generate. And, in industries where output prices and quality are regulated, commission regulatory policies regarding recovery of utility investment, including acquisition premiums, will largely determine the value of the production asset or firm.

The policy issue we wish to address in this paper is which party - shareholders, ratepayers, or both - is entitled to the gain that accrues when the market value of utility assets rises above the book value and utility investors are paid an acquisition premium on the sale of the utility. When a purchasing utility pays an acquisition premium for its utility investment, it is paying out at least a portion of the gain in value of utility assets to selling shareholders. For selling shareholders, this payment amounts to a windfall profit on the book value of their utility assets. If, in spite of the acquisition premium, utility rates continue to be based on the original book value, then ratepayers will also continue to enjoy the benefits of market value increases over book value which they enjoyed prior to a sale. However, the difficulty with this analysis is that the purchasing utility would essentially pay out the benefits twice; once to selling shareholders and again to ratepayers. Thus, with rate base value set at original book value it will be more difficult for purchasing utilities to earn a fair return on the acquisition premium portion of their investment. Also, any synergies from the acquisition which are flowed back to ratepayers through a decrease in rates may lead to higher consumption than would otherwise occur at the higher rate level. Assuming demand for electricity is not perfectly inelastic ratepayers will consume more electricity at the lower rates than they would have at the higher rates. This increased consumption will lead to excess profit for the purchasing utility during a period of regulatory lag. It is this elasticity induced excess profit through rate reduction that may enable purchasing utilities to pay something higher than BV and still earn a fair return on their investment.

If, on the other hand, utility rates are adjusted to reflect the acquisition premium then ratepayers have lost the benefits of paying rates based on book value for the use of assets whose market value has increased.<sup>1</sup> Ratepayers could theoretically be compensated for this increase in rate base (or lease expense) by requiring selling shareholders to flow back the excess profit from the acquisition premium paid on the

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<sup>1</sup>Even in the case where the acquisition creates synergies that produce cost savings equal to or greater than the acquisition premium, if utility rates are not reduced to reflect the entire cost savings, ratepayers will not achieve all the benefits which they may be entitled to from the increased value of the utility assets.



sale. Such a policy may be appealing from the standpoint of fairness: purchasing shareholders would be able to earn a fair return on their entire investment, ratepayers would maintain the benefit of market value increases over book because the rate base increase would be entirely offset by the flow back of gains, and selling utility shareholder profits would be cut back to the fair return on book value. However, as utility representatives argue, a policy requiring selling shareholders to flow back gains has serious flaws from an economic standpoint, and possibly fatal flaws from a legal perspective.

**B. Regulatory Policy Should Ensure that Ratepayers are Allocated the Gain on Utility Property**

**1. Gain Should be Allocated to the Party that has Traditionally Borne the Risk of Loss and Gain**

When there are gains from the sale of utility assets, whether just one asset or the entire enterprise, they should be allocated between shareholders and ratepayers according to which party has traditionally borne the risk of loss or gain on the assets. This is because traditional regulatory policy regarding the allocation of losses or gains in the past has formed expectations regarding allocation in the future. The party that expects to be allocated any loss or gain that may occur in the future is compensated for the risk of these allocations occurring. Historically, there is a "risk/reward" expectation between ratepayers and shareholders in regulated enterprises. One party bears the risk of change and the other party compensates them for undertaking it.

If a regulatory commission randomly shifted the allocation of loss and gain between shareholders and ratepayers, there would be no rational basis for expectations of future allocations. Risk, in general, would increase. A party would need to be compensated for the risk of an allocation of loss or gain even though it may turn out that party will not be allocated a loss or gain when one does occur. For example, as we will argue in more detail below, in most jurisdictions ratepayers almost always bear the risk of loss or gain in the market value of utility assets. Because ratepayers bear this risk, shareholders are generally protected from exposure. Ratepayers are "compensated" for bearing this risk by paying shareholders a lower return on equity than they would otherwise. If a regulatory body randomly shifted the allocation of gains and losses, shareholders would have no basis to predict future allocations of gain or loss. Shareholders would thus expect ratepayers to pay a higher return on equity to compensate for risk of loss, even though it may turn out that the regulatory body allocates the entire loss to ratepayers.

Such a regulatory induced heightening of risk in the utility industry is unnecessary and would be inefficient. A predictable pattern of "risk/reward" should be followed for maximum efficiency and lowest utility rates.<sup>2</sup> The pattern, or risk/reward expectation,

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<sup>2</sup>See, Bruce C. Greenwald, 1984, "Rate Base Selection and the Structure of Regulation", *Rand Journal of Economics* 15 (spring): 85-95.

could change in some ways without affecting efficiency<sup>3</sup>, but changes should be reasonably predictive, deliberate and well published in order to prevent uncertainty and keep expectations reasonable.

Maintaining a risk/reward pattern has legal as well as economic support. In the 1989 *Duquesne Light Company*<sup>4</sup> case, the U. S. Supreme Court stated that:

A state's decision to arbitrarily switch back and forth between methodologies in a way which required investors to bear the risk of bad investments at sometimes while denying them the benefit of good investments at others would raise serious constitutional questions.

## 2. In Most Jurisdictions, Ratepayers have Traditionally Borne the Risk of Loss and Gain

In most states, it is the ratepayers that have traditionally borne the risk of gain or loss on utility asset value. To understand this fundamental regulatory concept, it is helpful to review exactly what a gain and loss is in this context. A gain or loss arises when the competitive market value (CMV) of an asset deviates from its book value (BV). CMV is whatever the utility's assets would be worth at long-run competitive equilibrium. Assuming a competitive market for the materials used to produce an asset, and for the assets themselves, the CMV of any "new" asset is simply its purchase price, or, in accounting terminology, its original cost.<sup>5</sup> For "old" assets, CMV is the "replacement" cost of the asset, where replacement cost is defined as "the current cost of the most efficient alternative method for satisfying the current required demand."<sup>6</sup> Recall that the BV of an asset is its original cost less accumulated accounting depreciation. The difference between CMV and BV can be summarized as the difference between original cost less true economic depreciation (CMV) and original cost less accounting, or book, depreciation (BV). Thus, CMV will deviate from BV where economic depreciation does not equal book depreciation. Because CMV is a current economic value dependent on today's costs of duplicating existing service, and because BV is an accounting convention based on an allocation over time of an asset's historic value, it would be by pure coincidence that the two would ever equal.<sup>7</sup>

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<sup>3</sup>Ibid.

<sup>4</sup>488 U.S. 299, 315 (1989).

<sup>5</sup>Steward C. Myers, 1972, "The Application of Finance Theory to Public Utility Rate Case," *Bell Journal of Economics*, 3 (Spring) p. 58-97.

<sup>6</sup>Bruce C. Greenwald, 1984, *Rate Base Selection and the Structure of Regulation*; the *Rand Journal of Economics*, 15 (spring) 85-95 at p. 94.

<sup>7</sup>We will explain below that it is also unlikely for CMV to equal the bid or stock market value.

In any case, it seems clear that a regulatory agency cannot simply attach its seal of approval to an ADR outcome without making some independent evaluation of the appropriateness of the result. Such uncritical rubber-stamping would both run afoul of limitations on agency delegation of decisional authority and fail to satisfy the agency's obligations to articulate the bases for its decisions. In adopting ADR procedures, therefore, a regulatory agency must assure itself that it will have adequate bases for fulfilling its statutory duties as well as an administrative record sufficient to withstand judicial review.

At the very least, parties presenting a widely applicable ADR result for agency approval should include a report describing in some detail the factual bases and policy justifications for the recommended outcome.<sup>7</sup> The agency should make the report available to the public and invite comments. If adverse comments are filed, the agency should conduct whatever investigation is necessary to permit a reasoned response. Even if there are no adverse comments, the agency must conduct a critical evaluation of the ADR report sufficient to satisfy itself that the recommended outcome conforms to statutory criteria.

Of course, the value of ADR procedures will be undermined if regulators regularly or even frequently reject proposed ADR outcomes. Therefore, although regulators retain the obligation to ensure that ADR results are consistent with statutory criteria, regulators should be prepared to afford significant deference to consensual outcomes that are within the statutory framework.

**Agency Authority to Impose or Override Use of ADR Procedures:** The limits of an agency's legal authority with respect to the use of ADR may be tested by examining two scenarios at opposing ends of the issue. First, does an agency have the authority to impose ADR on parties where one or more of the parties object to ADR procedures? Conversely, under what circumstances is an agency free to override an agreement by parties to engage in ADR procedures?

As to the first question, we are not aware that the courts have provided guidance with respect to an agency's authority to impose ADR on a party to an administrative

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<sup>7</sup>The degree of detail necessary for such a report is likely to be inversely related to the scope of the ADR outcome in question. For example, agencies routinely approve settlement agreements among some or all of the parties to regulatory litigation. Although all such agreements must satisfy the public interest standard, a lower degree of agency scrutiny is appropriate where such an agreement disclaims any precedential effect and does not purport to bind other parties. Similarly, the ADR Act allows arbitration with the consent of all parties, 5 U.S.C. § 585, and specifies that, unless the agency provides otherwise by rule, the arbitrator's decision "shall include a brief, informal discussion of the factual and legal basis for the award, but formal findings of fact or conclusions of law shall not be required," 5 U.S.C. § 590(a)(1).

proceeding who objects to such procedures.<sup>8</sup> Our view is that an agency may not require parties to engage in binding, dispositive ADR procedures (e.g., binding arbitration) unless all parties consent to that procedure. This view is reflected in Section 585(a)(1) of the ADR Act, which states that "[a]rbitration may be used as an alternative means of dispute resolution whenever all parties consent." [emphasis added]<sup>9</sup> This provision, in turn, is consistent with the general principle that arbitration is a voluntary procedure which "can validly take place only if the parties have specifically and expressly agreed to use this method for the settlement of their disputes." Domke, Commercial Arbitration §1:01 (Rev. Ed.). Requiring an unwilling party to submit to binding and dispositive ADR procedures would likely be viewed by the courts as an abuse of the agency's discretion and an inappropriate delegation of authority.

This is not to say, however, that an agency might not have the authority to require even an unwilling party to engage in non-binding ADR procedures such as mediation, fact-finding before an expert or panel of experts, or other non-traditional procedures.<sup>10</sup> In particular cases, an agency may find that the use of such methods would facilitate a full or partial settlement of issues, or that such procedures would enhance the agency's fact-finding. In such cases, an agency probably has the authority to require even a protesting party to engage in a non-dispositive ADR procedure, so long as the agency retains full control over the ultimate (i.e., binding) disposition of the case. That authority derives from the broad discretion generally given to an administrative agency to fashion its own procedures in discharging its statutory responsibilities. See Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519 (1978).

More challenging is the question of when an agency may override an express agreement by parties to engage in ADR procedures as a way of resolving their disputes. The decision of the U.S. Court of Appeals for the District of Columbia Circuit in the Duke Power case, supra, offers some guidance, but does not necessarily provide all the answers.

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<sup>8</sup>Section 582 of the ADR Act provides generally that, "An agency may use a dispute resolution proceeding for the resolution of an issue in controversy that relates to an administrative program, if the parties agree to such proceedings." 5 U.S.C. § 582(a).

<sup>9</sup>The Act also makes clear that an agency may not undertake to extract such consent from an unwilling party. Section 585(a)(3) states that "[a]n agency may not require any person to consent to arbitration as a condition of entering into a contract or obtaining a benefit."

<sup>10</sup>The ADR Act expressly provides that the presiding officer in an administrative proceeding may compel attendance at "conferences for the settlement or simplification of the issues by consent of the parties or by the use of alternative means of dispute resolution ..." 5 U.S.C. § 556(c)(6) and (8).

Briefly, the facts presented in Duke Power are these. Two parties had entered into a power supply contract that was filed with the Federal Energy Regulatory Commission in 1978 as a rate schedule subject to the Commission's jurisdiction under the Federal Power Act. The contract included a broad provision calling for the arbitration of disputes by a knowledgeable person to be selected by the parties for that purpose. In the early 1980's, a dispute arose as to whether Duke Power had violated the contract by charging certain expenses that were not among the recoverable expenses listed in the contract. Rather than pursuing arbitration, the aggrieved party filed a complaint at FERC, alleging that Duke was violating the terms of the filed and effective rate schedule (the power supply contract). Duke argued that FERC was bound to dismiss the complaint and direct arbitration of the dispute. FERC agreed with the complainants that Duke had violated the rate schedule and summarily ordered Duke to make refunds with interest.

On review, the Court of Appeals upheld FERC's action, including its refusal to direct arbitration of the dispute. The court was careful to caution that it was not giving FERC a license to disregard mandatory arbitration clauses, noting the importance of giving effect to private agreements subject to the Commission's jurisdiction. However, a key factor in the court's decision to affirm FERC's action was its finding that "the Commission's acceptance for filing of an agreement that contains an arbitration clause does not legally disable the Commission from resolving disputes at the core of its enforcement mission." The court found that FERC has "an independent interest as a regulatory body in prohibiting utilities from charging other than their filed rates," and that Duke's violation of the rate schedule in question had "effectively converted the . . . dispute from one between Duke and the complainants to one between Duke and the Commission." <sup>11</sup>

While no doubt instructive, the Duke Power decision does not draw precise boundaries around the discretion of a regulatory agency to override an agreement by parties to engage in ADR. Certainly, the case makes clear that an agency is not bound by such provisions where the actions at issue strike at the heart of the agency's statutory "enforcement mission."<sup>12</sup> The decision also hints that an agency would not act properly were it to ignore a mandatory arbitration clause in order to resolve a "routine contract dispute." Between those two goalposts lies a very broad field, however, where many (if not most) of the issues confronted by regulatory agencies on a daily basis would lie.

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<sup>11</sup>In affirming FERC's action in the Duke Power case, the Court of Appeals for the District of Columbia Circuit expressly adopted reasoning applied by the Third Circuit in an earlier case involving the violation of a certificate of public convenience and necessity issued to a natural gas producer, Gulf Oil Corp. v. F.E.R.C., et. al., 563 F.2d 588 (3rd Cir. 1977), cert. denied, 434 U.S. 1062 (1977).

<sup>12</sup>Indeed, another question is whether there are categories of disputes that are so charged with the public interest (prudence issues, for example) that the agency would violate its statutory mandate if it were to fail to override an arbitration clause between parties.

The D.C. Circuit recently suggested a rather expansive reading of the Duke Power decision in A/S Ivarans Rederi v. United States, 938 F.2d 1365 (D.C. Cir. 1991) ("Ivarans II"). In the Ivarans II case, as in Duke Power, the court upheld a determination of an administrative agency (the Federal Maritime Commission, or "FMC," in Ivarans) to resolve a dispute itself, without submitting it to arbitration, notwithstanding a mandatory arbitration provision in the filed contract. As in Duke Power, the Ivarans II court emphasized the FMC's "public duties" to enforce filed rate schedules. 938 F.2d at 1367. The Ivarans II court, however, went on to approve the FMC's stated policy of deciding disputes "...without forcing the parties to resort to arbitration, ... when the dispute involves purely legal questions, not factual ones, and when arbitration would be a waste of time." 938 F.2d at 1368. The Ivarans II decision thus suggests a broader degree of agency discretion to override mandatory arbitration provisions than a strict reading of Duke Power would imply. In short, the tension between the "sanctity" of private arbitration agreements and the public duties vested in regulatory agencies is one that is still largely unresolved, but that may grow in importance as the ADR "movement" gains adherents in the regulated industries.

**Trade-Offs Between Procedural Protections and ADR Flexibility:** It is by no means inevitable that ADR procedures will achieve an outcome more quickly or at less cost than traditional litigation procedures.<sup>13</sup> ADR procedures such as arbitration, for example, can be every bit as formal and potentially as prolonged as regulatory litigation. Arbitration can allow the parties to supplement regulatory resources, to seek the input of a neutral expert with technical knowledge of the matters at issue, or to fashion procedures that suit their needs more closely than the traditional regulatory procedures. But if the chosen procedures include rights to conduct discovery, present evidence, cross-examine opposing witnesses, and brief factual and legal issues, there may be little difference in the costs, to the parties at least, of arbitration versus litigation.

**SUMMARY OF SUGGESTIONS REGARDING  
APPLICATION OF ADR METHODS IN  
ADMINISTRATIVE ADJUDICATIONS**

The considerations discussed above suggest that use of ADR procedures in the context of administrative adjudications may require more fine-tuning than would be necessary in a non-regulated commercial dispute. We offer the following suggestions for regulatory agencies who are interested in pursuing the potential benefits of ADR:

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<sup>13</sup>The Duke Power case, discussed above, is an apt example. FERC in that case concluded that enforcing the arbitration clause in the power supply contract with respect to the particular contention at issue would result in a waste of time and resources, rather than any savings. See North Carolina Municipal Power Agency No. 1 v. Duke Power Co., 40 F.E.R.C. ¶ 61,138 at 61,404, reh'g denied, 41 F.E.R.C. ¶ 61,060 (1987).

- 1) Consider carefully the nature and scope of the matters at issue in evaluating whether to pursue ADR methods and in fashioning ADR procedures in particular cases. The foremost virtue of ADR is flexibility; there should be equal flexibility in evaluating whether and how to apply ADR techniques.
- 2) If ADR procedures seem promising in a particular case, consider inviting interested parties to participate in the formulation of ADR procedures.
- 3) Formulate procedures that will involve staff advocates in the ADR processes but avoid direct involvement of agency decisionmakers.
- 4) Assure that all interested parties receive adequate notice of and opportunities to participate in ADR processes.
- 5) Where disputed issues have generic implications or involve matters of widespread public interest, fashion any ADR procedures to assure an adequate administrative record and clear articulation of agency policy.

Applied properly, ADR methods can improve the regulatory process. But used without caution, ADR procedures may simply lead to additional drains on the resources of agencies, regulated companies, and consumers.





The Minnesota Transportation Regulation Board's  
Alternative Dispute Resolution Program

by  
Mary Sarazin Timmons, Staff Attorney

Introduction

Rather than purporting to be a scholarly treatise on Alternative Dispute Resolution in the abstract, this paper is intended to be a "hands on" description of the experience of the Minnesota Transportation Board in using ADR for approximately one fiscal year (July 1, 1991) through June 30, 1992).

I. BACKGROUND OF THE PROGRAM

A. Regulation in Minnesota

Minnesota has regulated motor carriers and railroads since the 1920's, starting with the Railroad and Warehouse Commission. Two successor agencies, the Public Service Commission and the Public Utilities Commission, in addition, regulate telephone, gas and electric utilities. The Transportation Regulation Board, (or TRB or Board), was created by the Legislature in 1980 and began functioning in 1983 as a separate agency. It is a three-member board, with no more than two members of the same political party. The staff, at full complement, consists of three clerical person, three technical persons, and one half-time attorney plus a Special Assistant Attorney General assigned half-time. For budgetary reasons, vacated positions are often left unfilled for long periods of time.

The Board has jurisdiction over railroad matters and motor carrier rate matters, but most of its time is spent on motor carrier authority matters.

The Board's mission statement, in relevant part, reads as follows:

The mission of the Minnesota Transportation Regulation Board is to guarantee the general public of the state a reliable, safe, efficient and reasonable motor carrier service. This is accomplished through fair and equitable regulation of rates and granting of authority to operate based on fitness, ability and need.....

Focusing on the Board's quasi-judicial function, the TRB receives petitions (which have been filled with the Minnesota Department of Transportation or (Mn/DOT) for new authority,

Focusing on the Board's quasi-judicial function, the TRB receives petitions (which have been filled with the Minnesota Department of Transportation or (Mn/DOT) for new authority, extensions of existing authority, and for sales, leases, or ex parte transfers of authority. Notice of these petitions is published in the Board's weekly Calendar, along with the applicable protest date. The Board accepts timely filed protests. Based on a ruling from the Minnesota Court of Appeals, unprotested petitions are generally granted. The Board's enabling statute, Minn. Stat. § 174.04, mandates that protested cases go to a contested case hearing before an administrative law judge (ALJ) from the Office of Administrative Hearings (OAH). The ALJ writes a report which includes findings of fact, conclusions of law, and recommended order. Before the Board issues the final Order, the parties have the opportunity to file exceptions to the ALJ's report, where they can point out what they feel are errors of fact or law. They can also request an Oral Argument before the Board. By the time the Board hears Oral Argument, it has read the ALJ's report, exceptions, replies, and the transcript, if there is one. The complete file, including tapes of the hearing, is available to the TRB. No new evidence is presented. The Board has the opportunity to ask questions. Deliberation can be held immediately or set for a later time.

The Board, thus, does not aggressively pursue issues. It is like a Court; it decides the cases brought to it. The same is true for complaints filed with the Board. If the Board issues an Order to Show Cause or a Cease and Desist Order, it is because it must know the facts in order to apply the law or because the facts and the law are such that the Board must order a party to stop an illegal action.

The Board does not prosecute cases and the Board does not enforce compliance with its orders. Those are the functions of Mn/DOT. The Board's predecessor agencies had their own hearing examiners; now they are supplied by a separate agency.

### B. Continuing Problems

Eleven years ago, the Public Utilities Commission was struggling with many of the same problems the Board faces today. Based on written materials from a 1981 Transportation Seminar Committee, tightening up the regulatory process has been a recurring issue. This Committee was searching for ways to speed up the process and lessen the regulatory lag. Too much time was elapsing between the time of application and when a decision was made.

This Committee also was considering the idea that Rules might cut down some of the case by case decisions.

### C. Push for Deregulation in Minnesota

The problems discussed above continued into the 90's. In addition, there was a push in the Minnesota Legislature for deregulation.

The 1990 Transportation Lawyer's Association Survey (their 7th annual) showed that in the 42 states that regulate motor carriers, shippers in 27 states have little or no interest in deregulation. In no states did small shippers favor deregulation.

The study, for the first time, included safety, and showed increased cooperation between state commissions and state police.

This survey showed that in Minnesota, the advocates of deregulation was generally limited to large shippers with leverage from substantial volume of traffic.

The Board's position has been that consumers and carriers benefit from a responsible and prudently administered regulatory structure. The issues discussed in "Deregulation: A Decade Later", Transportation Law Journal, Vol. 17, 1988, are relevant to Minnesota; as paraphrased:

It is a myth that deregulation is an environment of perfect competition. These are distortions that are created by the size and power of shippers. Large shippers can unilaterally dictate price discounts below established rates. They can selectively tender or withdraw their vast volumes of freight, thus extorting extremely low rates from carriers. If unsophisticated carriers price below cost, it can cause eventual bankruptcy. Others, who are made desperate for freight by over-capacity in the industry, use marginal cost pricing.

In order to pay their fixed costs, carriers then charge a higher rate to their small shippers. This resulting price discrimination affects mainly small business, small towns and rural areas.

Prudently administered regulation can encourage efficiency by avoiding over-capacity problems caused by unlimited entry. Flooding the market with empty trailers merely drives the prices down to noncompensatory levels.

Carriers earning a reasonable return on their investment provide adequate service to their territory, pay labor a fair wage, and properly maintain their equipment.

The TRB has attempted to responsibly and prudently administer regulation in Minnesota. The Board, understaffed and under-funded to fulfil its mandated responsibilities, was looking for innovative ideas.

#### D. Suggestion for Alternative Dispute Resolution

In the summer of 1991, after conversations with a transportation attorney who has extensive experience practicing before the Board, one of the Board members proposed dispute resolution as a means to expedite processing the case load and keeping the docket clear.

The Board acted quickly on the suggestion. They had pending a complaint by one motor carrier against a company that had no operating authority of its own, but was providing "destination management services".

The respondents in the case were making arguments in support of a motion to dismiss the complaint at a Board meeting asserting that the Board lacked jurisdiction. The Board decided then and there to try dispute resolution, and I was directed to set up a program. The lawyers directly involved were present so we were able to immediately select a mutually available date for a prehearing conference. This case was my "Baptism by Fire". To prepare, I determined that there were twenty legal and eight factual issues that had to be disposed of in some fashion before there could be a resolution.

Although it came close, that case did not settle but went to OAH. A hearing was set, then continued, and I don't know the status other than that no report has yet come back to the Board for final disposition.

Most cases are not that complicated, nor have so many possible options, such as waiting for the Legislature to deal with the issue, the parties going to District Court instead, or the Board going through a rule-making procedure. Narrowing and focusing the issues made that case more manageable.

#### II. GOALS OF THE PROGRAM

In a classic case of the cart before the horse, I had held my first prehearing conference, just described, before I had a chance to set goals for the program and design a format.

Congress had just established a federal policy favoring substantial public sector use of mediation, arbitration and similar methods. The Society of Professionals in Dispute Resolution (SPIDR) summarized the new Administrative Dispute Resolution Act, P.L. No. 101-552 in its SPIDR News, Vol. 15, No. 3 (Summer, 1991). The article, entitled "Administrative Conference Seeks to Aid Agencies in Implementing Federal ADR Law" stated that when the federal Administrative Procedure Act (APA) was passed in 1946, it was intended to place some minimal procedural criteria under federal agency processes, while preserving the essential benefits of administrative action, namely: speed, low cost, informality, and agency expertise. Over the years, the processes had often

taken on formality, complexity, and rigidity.

In passing the ADR Act, Congress sent a clear signal to agencies, reviewing courts and persons dealing with the government that using less adversarial processes would be encouraged and supported. The same considerations that make alternatives to litigation attractive to state agencies, courts, and the private sector were likely to render them useful in many cases in which federal agencies now participate.

The Legislative history of the ADR Act under "1. Purpose" has the following definition:

"...ADR procedures are informal, consensual procedures which can be used by parties in a dispute to obtain a resolution in lieu of formal litigation. These procedures include settlement negotiations, conciliation, facilitation, mediation, fact-finding, mini-trials and arbitration or any combination..."

Increasing the number of dispute resolution methods available to government officials would enhance the operation of the government and better serve the public, according to SPIDR's analysis.

The goal set by the Administration Conference of the United States in its 1986 Recommendation of Agencies' Use of Alternative Means of Dispute Resolution was to promote more efficient, effective administrative procedures through the use of voluntary, informal procedures.

Similarly, the TRB borrowed concepts from the Federal Act and set four goals for the dispute resolution program:

1. to explore the possibility of settlements;
2. to do fact-finding;
3. to narrow and focus the issues; and
4. to save costs for the agency and the parties.

### III. IMPLEMENTATION OF THE PROGRAM

As staff attorney, I was responsible for the design of the program. I was given approximately fifteen files - all cases that had been protested. I drafted a form letter to be sent to the parties which stated that the TRB had started holding prehearing conferences. It referenced the federal law and explained that although the law didn't apply to a state agency, the TRB was supporting the concept.

The letter pointed out that litigating a case in a contested case hearing was always an option and that sometimes it was the appropriate choice.

The letter emphasized, however, that the Board supports alternatives. The parties to a case - the petitioner for authority and the protestant(s) have always had the choice to work out a settlement between or among themselves. The TRB directed the petitioner to contact the protestant(s) for purposes of settling the case. If asked, the transportation specialists would discuss possible amendments that might encourage withdrawal of protests.

After a case was referred to the Office of Administrative Hearings, negotiation was encouraged, but there was an assumption that the case would go to hearing. There was no required meeting for settlement.

The purpose of the Board's new program was to provide a timely and fair opportunity to screen out the cases where a petitioner only wanted to haul potatoes and the protestant really was concerned only with a potential competitor hauling onions. This kind of case need not be handled in a formal and rigid manner.

In 1990, the TRB received 413 petitions related to "for hire" motor carrier authority. At the end of the calendar year, 334 had reached a final disposition and 79 were still pending. This did not include rate matters or railroad matters. Statistics were not available for 1991.

The Board believed that resolving some cases early on would preserve some of its scarce resources.

All of the ALJ costs are billed to the TRB. Any involvement by the Attorney General's Office is billed back to the TRB. The Board, thus, has a financial incentive to attempt to control these costs.

The Board recognized, additionally that the program could save money for the trucking industry. Often the potential or actual competitors have an ongoing relationship of some kind. They may be neighbors in a rural area or business people who cooperate in ways not directly related to the route or commodity in issue. They may choose to negotiate a compromise because of the impact on their broader dealings with each other. In any kind of dispute resolution, the neutral must be cognizant of whether the parties are like labor and management who must deal with each other on a daily basis before and after the dispute or whether they are like two drivers in a car accident who have no relationship outside of a particular incident.

The reality is that some petitioners petition for authority without realizing what is involved in the process. Sometimes they have been advised to ask for more than they need so that they have a bargaining chip.

Some protestants appear to protest petitions without being selective about what is important to their operation.

The form letter sent to parties contains the following paragraphs:

Meeting in the same room with a neutral can help the parties see their own case through the eyes of the opponent. Removing the trial-type atmosphere can make it easier to look at alternatives. Eliminating one town from the proposed route to be served or one contract from a long list of accounts to be served might mean getting a final order from the Board without going through a lengthy and expensive process. That would be a cost-effective choice. Settling a case also removes the risk of a contested case, for example, the unpredictable supporting shipper witness who doesn't testify as strongly or clearly as expected.

Any decision made by a third party can be a win/lose proposition. A negotiated settlement, however, should provide that each party gains something.

The Board occasionally has cases which it dismisses either because one party did not show up for a contested case hearing or because a petitioner has not met his/her burden of proof. In other words, the petitioner presented a case without testimony from supporting shippers that shows need for the proposed service. These kinds of cases should be weeded out early.

The mailing of the form letter also included a calendar to be returned with available dates for a conference.

I modeled the calendar after the one used by the American Arbitration Association for no-fault automobile insurance arbitration.

The times available for conferences were 9:30 a.m. or 1:30 p.m. on Tuesdays or Thursdays. I offered the option of teleconferences for those outstate and the possibility of scheduling a second conference at 10:30 a.m. if someone could arrange two on the same day. The calendars offered only two months at a time to discourage procrastination.

There was an automatic backlog starting up. There was also some resistance from the clerical staff to the addition of secretarial work. With a computer, the work is minimal, however. If the caseload volume were large, it would be helpful to have someone functioning as a calendar clerk. Because the same attorneys appear frequently, printing labels for envelopes would cut the work time.

For a short period of time, it was necessary to send a follow-up letter. Typically, this went to an attorney representing a protestant who was causing a delay. A tickler system would help here.

Many in the field of mediation believe that a mediator should

have someone to take scheduling questions because sometimes in a routine telephone conversation, parties want to discuss the merits of the case.

I send a final letter setting the time and date for the hearing. I'm still waiting to get a PC, and currently using a typewriter so ancient that it doesn't have a correction key. The risk of getting bogged down in the clerical aspect of the job has to be balanced against having control of the docket. Working with the file does bring some familiarity with the people and issues involved.

#### IV. NUMBER OF CASES FOR WHICH CONFERENCES HAVE BEEN HELD

The conference on the Complaint case discussed above was held on July 23, 1991. In August, I began sending out letters. I held the next conference on September 5, 1991, and the Order granting authority issued October 8, 1991. Some cases settled after the parties received a letter. In preparing the statistical data, I found backup information for forty conferences held between July 1, 1991, and June 30, 1992.

Of those forty, seventeen had settled; twenty-one had been referred to OAH for a contested case hearing, and two were pending at the time this was written. The Board had set a modest goal of 10% for settlement, based upon an observation of an ALJ. The approximately 40% settlement rate, thus, exceeded expectations.

#### V. COST BENEFITS

During the prior fiscal year, OAH billed the TRB \$132,084. For the fiscal year being considered here, the actual costs from July 1 through June 30 was \$119,894. This figure includes \$6,633 for Rulemaking, not a part of contested case hearings. The Board had discretion to choose the fiscal year; deducting the Rulemaking costs, representing a savings of \$18,823. The Attorney General costs were \$28,000 with an estimated total in the range of \$25,700 to \$26,700 for the fiscal year in question. It would be harder to trace a savings, but it is clear that settled cases do not involve Oral Argument, deliberations, memoranda or Appeals.

#### VI. QUALIFICATIONS OF THE STAFF PERSON CONDUCTING CONFERENCES

There are several qualifications that I think are appropriate for the person conducting conferences. Not surprisingly, they happen to be the same qualifications that I have. First, it helps to be an attorney. Originally, this didn't seem too important, but it seems that there are always legal questions. My experience practicing before OAH and the PUC has been useful, especially with attorneys who are new to administrative law.

My arbitration experience with the Better Business Bureau,



American Arbitration Association, Hennepin County District Court, and Ramsey County District Court gave a broad range of dealing with negotiation tactics and intransience. An attorney acting as a facilitator is familiar with the tactics sometimes used by attorneys to intimidate each other or the opposing party. Inappropriate behavior can be recognized and not tolerated. Our dispute resolution program does not require representation by an attorney. The Board's Rules of Practice and Procedure, however, do require that for Oral Argument before the Board following a contested case hearing, an individual can represent him/herself, but a corporation or other entity must be represented by an attorney or the one individual who has been "grandfathered in" as an ICC practitioner.

For both parties and their attorneys who are new to the process, an attorney as mediator can give some direction if a petitioner doesn't understand what the burden of proof will be in a contested case hearing. If there is reluctance to name specific shipper witnesses, it can be helpful to make known what discovery is available at the next stage.

There is often a perception on the part of small carriers that they are in a David and Goliath situation. Sometimes they are. The time to determine this is before time and money is expended on a contested case hearing, so that an appropriate strategy can be adopted.

If the parties reach an impasse, those new to administrative law often have questions about what the contested case hearing will be like - how it differs from a trial or how it's similar to one. Someone who has practiced before ALJ's can answer general questions.

A frequent example is a protestant's raising the issue of fitness and ability. Under Minn. Stat. Sec. 221.071, the statute governing certificates of public convenience and necessity, and 221.121, the statute governing permits, a petitioner must be fit and able. Minn. Rules, part 7800.0100, Subp. 4 defines the term:

The term "fit and able" shall mean that the applicant is financially able to conduct the proposed business; that the applicant's equipment is adequate and properly maintained; that the applicant is competent, qualified, and has the experience necessary to conduct the proposed business; that the applicant is mentally and physically able to comply with rules and statutes of the commission.

A new petitioner often is angry and insulted when it is alleged that he/she is not fit and able. A neutral can deflect some of that anger by explaining or allowing the protestant's attorney to explain that the issue is raised routinely because some ALJ's will not allow it to be raised at a hearing if it is not in the original protest or petition to intervene. Protestants try to protect themselves from the rare case where something negative

surfaces during discovery or later.

The prehearing conference is a safe place for the petitioner to vent his/her anger and for the protestant's attorney to explain the rationale for including the allegation of unfitness. The petitioner may or may not be angry after this discussion. The possibility exists that having discussed that issue, the way can be cleared for less heated dialogue. (This, of course, does not address the issue of whether it would be better for ALJ's to allow amendment of the petition if fitness becomes an issue.)

## VII. RESPONSE FROM THE LEGISLATURE

### A. Comments

Minnesota has a bicameral legislature. The dispute resolution program was described in writing to legislators on the Senate and House Transportation Committees. The response is anecdotal. The Chair of one house committee told one of the Board Members that he liked the description and that it was well written.

The three Board Members were asked to testify at one hearing on the Motor Carrier Modernization Act. The dispute resolution program was discussed as part of the overall operation of the Transportation Regulation Board. In the discussion, a hypothetical example was given which was based on a fact situation in which the parties negotiated a settlement on their own, and the petitioner gave up the opportunity to pursue certain authority as a trade off for not having to go through a hearing. One of the legislators misinterpreted this situation to be a case that went through the program. Her concern was that parties were being coerced into giving up rights. This person had had a bad experience with a mandated dispute resolution program in a marriage dissolution setting. It was not clear to me whether her experience was personal or as an attorney. I asked to be able to respond to that concern. Clearly, the Board's program is voluntary; no one is forced to go into it. Going directly to a contested case hearing is still an option.

Once in mediation, petitioners only agree to restrictions which amend their petitions if the trade off appears to have equal value to getting authority faster and less expensively. There is no coercion to settle.

### B. New Law

The dispute resolution program did not get a lot of attention from the legislature because it was overshadowed by Chapter 600, the Motor Carrier Modernization Act which was enacted April 29, 1992.

This was the final product of a conflict between regular and

irregular carriers. Over time, irregular route carriers tend to become regular if they don't police themselves. The legislature was sending signals that it would listen to the advocates of deregulation if the industry did not come up with some compromise to solve the problem of illegal operations. An ad hoc committee was formed to do that. After months of meeting, the group's proposed legislation was introduced, discussed, and amended. The Motor Carrier Modernization Act that was enacted raises many issues. The effort to get legislation and the rush to interpret the new law before it goes into effect, over shadowed most of the other issues in transportation.

The Board will be receiving petitions to convert permits and certificates to the new classes. There will still be Petroleum Carriers and Regular Route Carriers of passengers. There will be a new Class I certificated carrier. The old permit carriers: livestock, contract, charter, courier service, and local cartage carriers will still exist. In addition, there will be: Class II-T (truckload), Class II-L (less than truckload), Household Goods Mover, and a permit for Temperature-Controlled Commodities. The Board has to have in place an expedited procedure for handling the conversions; the applications must be received by Mn/DOT by September 1, 1992. The staff is working on boilerplate Orders for the conversion.

#### VIII. RESPONSE FROM INDUSTRY

Minnesota Trucking Association published an article announcing the prehearing conferences in its monthly publication in November 21, 1991, Vol. 91-15.

Although there was some discussion at the Board about sending out a survey about the program, there was no agreement about whether it should be a broad survey about total interaction of the Board and staff with the public. With the Conversion pending, the idea did not go anywhere.

#### A. Negative Comments

Again, the information is anecdotal. Originally, there were fears of delay in the process. Every ADR program that I have been involved in has had a delay at the beginning. Those that are annexed to an existing structure, such as a District Court, have to go through a process of design, selection of neutrals, rulemaking, and so on. The motivation is to speed up the process and clear the docket, but there is an inevitable delay at the outset. The TRB is much smaller than the District Courts so the start-up time of a few months was unavoidable, but not as burdensome as where the caseload is larger.

Some participants would like the neutral to have authority to compel discovery or to dismiss cases. Specific rules for ADR would be helpful because it isn't clear if all the powers that the ALJ's

have is necessary for a voluntary program or whether all the Practice and Procedure Rules recently adopted by the Board are applicable to the program.

Some attorneys feel that they are experienced negotiators and don't need any help settling. Often, they are the ones who come to the conference without their clients or without the authority to settle.

Some attorneys are used to the caucus method where the mediator meets separately with each side, often but not always, where a settlement is mandatory. I see my role as facilitator, however, not someone who forces a settlement. (I do, however, offer the option of caucusing. So far, no one has requested it.)

One attorney skipped the dispute resolution process for two cases because all the carriers were represented by legal counsel and they had engaged in discussions. They were both set for hearing in January but have been postponed indefinitely. It is hard to imagine that trying dispute resolution could have had a worse impact.

#### B. Positive Feedback

In October, 1991, one person told me and two Board members that he had settled four cases with people who previously would not negotiate with him. He expressed a belief that it was because we had the dispute resolution program.

In May, 1992, I received a letter stating: "I have circled six dates on the Prehearing Conference calendar which you sent me. I do not know whether this will be successful but I am encouraged that the Transportation Regulation Board is trying alternative approaches like this."

Another recent letter stated: "...I have had some communication with the sole protestant in this matter and we are still in the process of negotiating a settlement to this matter. However, I do feel the Board's mediation services could be helpful in this matter and therefore request that the Board set up a time for a dispute resolution meeting at your earliest convenience..."

#### IX. VISION FOR THE FUTURE FROM THE VANTAGE POINT OF THE NEUTRAL

If there were no new legislation, I would predict that the future would look strikingly like the present. Small businesses would support the dispute resolution process because it can save them money by eliminating a contested case hearing.

Large carriers who file protests frequently would also be

supportive because they can find out early in the process whether the perceived conflict is real and whether the volume of traffic being proposed is large enough to warrant continuing the case. Parties or attorneys who are litigious will still prefer the trial-type setting.

Some people will be negative about the process without ever trying it. Some will be frustrated with the cooperative spirit it fosters.

The new "conversion" statute, however, changes everything. The conversion process itself does not specifically allow for protests. It is unclear at this time, however, whether some attorneys believe that the right to protest has been preserved even though the conversion amendment is silent. Once the conversion period is over, petitions for new authority, extensions, or transfers will be subject to protest. These disputes are susceptible to a dispute resolution process.

The vision for the future is a little cloudier than it was six months ago, but I believe that alternative dispute resolution is here to stay in Minnesota intrastate regulation. Even the ICC has now adopted ADR rules.

MT:ba:ch



**Evaluation of Innovative Administrative Procedures  
and Traditional Adjudicatory Ratemaking Procedures  
as Substitutes for Competitive Economic Markets**

David W. Wirick, NRRI<sup>1</sup>

Since the emergence of administrative procedures, which began with the enactment by Congress of the Administrative Procedures Act in 1946, a variety of innovative alternatives to traditional dispute resolution has been devised, and fairly wide use has been made of those techniques in areas as varied as labor negotiation, environmental rule making, contract dispute resolution, and as an alternative to formal judicial mechanisms. In the regulation of the nation's public utilities, alternative dispute resolution (ADR) techniques have been applied in some states, and negotiated settlements and stipulations are becoming more common, but ADR has not gained widespread acceptance as a substitute for traditional adjudicatory ratemaking. Although the informal use of alternative dispute resolution techniques by public utility commissions is difficult to measure, few states have developed ADR statutes, and in many states, the application of ADR is still under study.<sup>2</sup>

As government agencies, including public utility commissions, have considered the adoption of ADR, they have applied a variety of criteria to determine whether innovative processes are preferable to more traditional adjudicatory processes. Miriam K. Mills argues that alternative dispute resolution techniques should be more expeditious, less formal, less technical, and more economical than adjudicatory techniques.<sup>3</sup> In the regulation of the public utilities, Bob Burns identifies alternative procedures intended to streamline the regulatory process and procedures intended to improve the quality of regulatory policy making.<sup>4</sup> Other authors, including Roger Fisher, William Ury and Bruce Patton in their ground-breaking book, *Getting to Yes*, have cited the positive, long term effects of working in collaboration.<sup>5</sup>

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<sup>1</sup>The views and opinions of the author do not necessarily reflect those of the NRRI, the National Association of Regulatory Utility Commissioners, or their contributors.

<sup>2</sup>Rick Harris, "The Legal Implications of Regulation," *Commission Operations and Management*, forthcoming (Columbus, Ohio: NRRI, 1992).

<sup>3</sup>Miriam K. Mills, "Overview and Implications of Alternative Dispute Resolution," *Policy Studies Journal*, Vol. 16, No. 3 (Spring, 1988), p. 494.

<sup>4</sup>Robert Burns, *Administrative Procedures for Proactive Regulation*, (Columbus, Ohio: NRRI, 1988), p. 1.

<sup>5</sup>Roger Fisher, William Ury, and Bruce Patton, *Getting to Yes* (Boston: Houghton Mifflin, 1981).

It is my hypothesis that those who attempt to "sell" ADR to state public utility commissions because it is faster, simpler, and less disputatious are missing the boat. Although efficiency is a goal of state public utility commissions, a proper and more important goal is that they operate effectively, i.e., that they protect the consumer from the abuses of monopoly power.

Though the regulation of public utilities has addressed social issues (like universal service and economic development), its primary purpose is to provide a substitute for the price setting operation of competitive economic markets (i.e., ratemaking). Indeed, Charles Phillips, in his classic text, asserts that the first goal of public utility regulation is the prevention of "excessive (monopoly) profits and unreasonable (inequitable) price discrimination..."<sup>6</sup> A better criterion, therefore, for the establishment and evaluation of ADR for the regulation of public utilities might be the extent to which negotiated solutions are better able than traditional adjudicatory processes to replicate the results which would have been obtained by the operation of competitive markets.

This report will review the advantages obtained by consumers through the operation of competitive markets and determine in a regulatory context which type of procedure--formal adjudicatory processes or ADR--holds the better potential for duplicating those results. In order to do so, it will be necessary to identify the benefits obtained by consumers and producers through the operation of competitive markets, identify the relevant characteristics of both adjudicatory and negotiated processes, and make comparisons between the two.

### **The Virtues of Competition**

In these days of rapid and near-cataclysmic economic restructuring, competition is touted by some as a panacea for nearly all of the economic dilemmas of regulated utilities. Simply find a way to infuse competition into utility markets, they assert citing Adam Smith, and our problems will vanish. Critics of competition, though they are difficult to hear above the clamor for deregulation, reduce competition to MEGA, mutually exclusive goal attainment. Simply put, I win only if you lose, a state of affairs not at all conducive to promotion of the general welfare.<sup>7</sup> The truth lies somewhere in between.

Any elementary economics text will identify the characteristics of competitive markets. Among those characteristics are:

1. A large number of buyers and sellers.
2. A homogenous or standardized product.
3. Free entry into and exit of firms from the market.
4. The existence of perfect information.

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<sup>6</sup>Charles F. Phillips, Jr., *The Regulation of Public Utilities*, (Arlington, Virginia: Public Utilities Reports, 1988), p. 164.

<sup>7</sup>For an interesting criticism of competition see Alfie Kohn, *No Contest: The Case Against Competition*, (Houghton Mifflin, Boston: 1986).



5. No control over prices by buyers or sellers.
6. No non-price competition.

No public utility commission could hope to duplicate all of those characteristics for most utility markets. But those characteristics of competitive markets interact to create four important benefits for consumers, benefits which should be replicated by effective regulation. Those benefits are:

1. Open exchange of information. In competitive markets, consumers have available to them all of the information necessary to make decisions between products. In purely competitive markets, there is no need for proprietary information.
2. Consumer sovereignty. In competitive markets, the consumer drives the market. The needs of the consumer are easily and quickly communicated to the producer who immediately adjusts production to those needs.
3. Efficient allocation of resources. In simple terms, because of the rapid communication of consumer needs, little is wasted. The "right" amount of product is produced and purchased. In more technical language, the firm sets prices at the marginal cost of production, and in the long run, price equals the minimum average cost. The result is economic efficiency, an objective Charles Phillips suggests may have been shortchanged by public utility regulators.<sup>8</sup>
4. Inducements to innovation. Because firms in competitive markets must be responsive to consumer needs, they must constantly improve their product offerings and innovate. They must develop and test alternatives and anticipate changes in demand.

These are the criteria against which ADR and traditional adjudicatory ratemaking should be evaluated since replication of these conditions will provide a substitute for the operation of competitive markets. But before evaluating ADR and traditional ratemaking against these criteria, we should pause to distinguish between the two.

### **Traditional Ratemaking and ADR Defined**

The traditional method of regulating the nation's public utilities has its roots in the establishment of the Interstate Commerce Commission in 1887. Adjudicatory procedures, as they are employed for setting rates, usually include the filing of a rate request, discovery, a prehearing conference, oral and written testimony, cross-examination, rebuttal testimony, the opinion of an administrative law judge, and a formal commission order or decision.<sup>9</sup> Adjudicatory proceedings are adversarial, pitting the best efforts of attorneys against one another with the commission sitting as judge.

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<sup>8</sup>Phillips, p. 193.

<sup>9</sup>Burns, p. 2.

In recent years, the adjudicatory process has come under considerable criticism by knowledgeable observers of regulation. And that process has been complicated by Government in the Sunshine Acts, which according to Charles Stalon, "strengthen an already strong adjudicatory bias."<sup>10</sup> In addition, Stalon identifies five characteristics of quasi-judicial decision making.<sup>11</sup> Those characteristics are:

1. A respect for passivity. Judges, or commissioners, are expected in adjudicatory processes to remain above the fray, to limit their involvement in discovery or settlement, and to render decisions only after observing the airing of contestant's positions.
2. The discouragement of operational objectives. Commissions, operating under adjudicatory processes, are tempted to limit findings to interpretation of existing law rather than the formulation of objectives.
3. A reluctance to accept deadlines.
4. A respect for settlements. Given the passivity tradition, a bias for settlements exists.
5. An emphasis on the direct impact of decisions. Of most concern in an adjudicatory hearing is the impact on direct participants rather than on others who may not have directly participated.

In making comparisons between adjudicatory regulation and ADR, care must be taken to avoid comparisons between the current state of adjudicatory regulation and an idealized notion of ADR, or vice versa. There are those who believe that traditional, adjudicatory regulation has its flaws but that improvements can be made, such as modification of sunshine requirements. For example, Chairman Steven Fetter of the Michigan Public Service Commission sees problems with the current state of adjudicatory regulation. His response, however, is not to throw the baby out with the bath water but to implement administrative, legislative, and organizational modifications.<sup>12</sup>

ADR, on the other hand, is in part the outgrowth of new techniques of negotiation developed by the Harvard Negotiation Project and detailed in Roger Fisher, William Ury, and Bruce Patton's book, *Getting to Yes*. Their book introduced Principled Negotiation,

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<sup>10</sup>Charles G. Stalon, "Decision Making, Information Overload and the Pursuit of Legitimacy," *Proceedings of the 103rd Annual Convention and Regulatory Symposium of the National Association of Regulatory Utility Commissioners*, (Washington, D.C.: NARUC, 1991) p. 87.

<sup>11</sup>*Ibid.*, pp. 87-90.

<sup>12</sup>Steven M. Fetter, Untitled Remarks, *The Proceedings of the 103rd Annual Convention and Regulatory Symposium of the National Association of Regulatory Utility Commissioners*, (Washington, D.C.: NARUC, 1991), pp. 75-80.

a process that replaced the traditional "gamesmanship" associated with negotiations with a process that concerned itself with interests instead of positions, mutual benefits instead of rigid adherence to demands, and the reliance on objective standards for crafting solutions.<sup>13</sup>

In his seminal work on the use of ADR by state public utility commissions, *Administrative Procedures for Proactive Regulation*, Bob Burns identifies a variety of techniques which fall under the general ADR rubric.<sup>14</sup> They are:

Arbitration: the use of an unbiased third party to settle a dispute.

Mediation-Arbitration: the use of a third party to mediate aspects of a dispute and arbitrate others.

Mediation: the use of a trained person to help the parties come to an agreement.

Summary Proceedings: an abbreviated hearing in which the decision is based on the written filings.

Substantive Streamlining: changes in the substance of what is decided (e.g., automatic fuel adjustment clauses).

Negotiated Rulemaking: the issuance of proposed rules to allow public comments and consideration of those comments prior to determination of final rules.

Workshops and Technical Conferences: the use of workshops and technical conferences to gather information and reach a consensus on issues.

Commission Task Forces: the bringing together of representatives from all major interested parties to recommend a solution.

Consumer's and Scientific Advisory Committees: similar to but less formal than task forces.

These techniques have in common a desire for mutually acceptable solutions, the elimination of adversarial processes, an expansion of the set of solutions, and minimizing formality. Critics of ADR point to the relative lack of a formal record and the difficulty of drawing precedents from ADR-generated solutions. Critics also suggest that ADR is best limited to comprehensive rulemaking rather than specific rate cases.

### Comparison and Evaluation

In the following sections of this paper, traditional adjudicatory regulation and ADR will be compared and evaluated against the four criteria identified earlier.

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<sup>13</sup>Fisher, Ury, and Patton, p. xviii.

<sup>14</sup>Burns, pp. 35-84.

## Information Exchange

Two varieties of information exchanges are associated with state public utility regulation. The first is the flow of information outside the process to those who have not been a party to the proceedings, a flow which has its parallel in financial accounting. In financial accounting, standardized statements transmit the financial status of the firm to outsiders, including potential investors. In public utility regulation, the external flow of information provides the basis for the application of precedent to subsequent and similar issues and examination of the record for those reviewing its results.

The second information flow is the information exchange internal to the process, which can be likened to management accounting. The goal of management accounting is to provide information so that correct decisions can be made. Within the regulatory process, the internal information flow serves the same function.

With regard to external information exchanges, ADR falls short of traditional adjudicatory ratemaking. As was indicated earlier, one of the most often cited shortcomings of ADR is the lack of a formal record. When rate cases are settled by some form of negotiation or mediation, there is no record other than the final settlement or stipulation, and it is difficult to determine, therefore, if precedent has been established or broken.

Formal adjudicatory ratemaking certainly can provide a voluminous, formal record. But that information may not best serve the needs of decision makers (i.e., the necessary internal flow of information). According to Carl Pechman, "In an adversarial proceeding the process of obtaining information is made as painful as possible to increase an opponent's transaction costs."<sup>15</sup> He further argues that administrative decisions must be based on valid information and that adversarial procedures impede the development of that necessary information. Negotiated solutions, on the other hand, allow an expansion of behavior, from the "claiming" behaviors inherent in adversarial proceedings to creative behaviors which allow for better information flow.<sup>16</sup>

As Paul Joskow indicates, there exists both a formal and an informal regulatory process.<sup>17</sup> The formal process includes formal hearings while the informal process consists of all of the interactions between firms and regulators outside the formal process. Undeniably, both processes create information flows and exchanges.

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<sup>15</sup>Carl Pechman, "The Regulator as a Mediator/Negotiator," *Proceedings of the Sixth NARUC Biennial Regulatory Information Conference*, (Columbus, Ohio: NRRI, 1988), p. 634.

<sup>16</sup>Ibid., p. 634-635.

<sup>17</sup>Paul L. Joskow, "Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation," *The Journal of Law and Economics*, Vol. 17 (October 1974), p. 296.

Traditional adjudicatory processes attempt to eliminate or at least truncate the informal flows during the hearing process. Although ADR may seek to regularize the information flow, it probably provides better recognition of the informal and internal flows and may provide an environment within which more open and useful dialogue may take place.

### Consumer Sovereignty

In competitive markets, consumer preferences drive the market. In either adjudicatory proceedings or ADR, consumers can only participate by representation. The issue at hand, therefore, is to determine which regulatory style, traditional adjudicatory ratemaking or ADR, has the capability to provide the best representation of potentially varied consumer interests.

If ADR is to provide a real alternative for the substitution of regulation for competitive markets, three conditions must be met. Those conditions are:

1. Consumers must be well organized and capable of their own self-defense. In an adjudicatory proceeding, the commission can act on behalf of the consumer even if the interests of the consumer have not been articulated well. (That, of course, presumes that commissioners are able to accurately elicit the real interests of consumers from the positioning inherent in an adversarial proceeding.) Under ADR, consumers must be able to bargain effectively with utilities. ADR requires "adequate representation of each interest at the table so that no one will be overpowered or overpowering."<sup>18</sup> If the interests of consumers, including both industrial and residential customers, are well articulated and if those who represent them are competent and well-prepared, ADR can be effective.
2. There must be significant common interests between the parties. If a legitimate binary choice exists (your position or mine with no room for compromise), an adjudicated solution is clearly best. In addition, ADR cannot be effective if any party is required to compromise "on any issue fundamental to its existence."<sup>19</sup>
3. Consumers must understand both their short-run and long-run interests and not be able or willing to shift costs to other, unrepresented consumers. If only short-run interests are understood (and defended) by parties involved in ADR, long-run externalities requiring public policy solutions may be created. The same situation is created if costs can be shifted to other jurisdictions (e.g., acid rain). In those cases, commissions representing the wider, long-run public interest may provide better solutions than those

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<sup>18</sup>Lavinia Hall, "Bending the Rules: Negotiating Rules in Administrative Agencies," *Policy Studies Journal*, Vol. 16, No. 3 (Spring, 1988), p. 536.

<sup>19</sup>*Ibid.*, p. 537.

negotiated by the parties to ADR (presuming, of course, that commissions are able to recognize and prevent the development of negative externalities).

Can consumers be better represented by ADR than adjudicatory proceedings and, thereby, better able to shape outcomes? According to William Cowan, the answer may be yes. Consumer representatives, he says, have been suspicious of ADR and dubious of their ability to be treated fairly in negotiations with well-funded utility interests. Within the structure of adjudicatory ratemaking, they felt secure in their ability to at least state their case. But, as Cowan continues,

...equality, which all of us in the hearing business strive to achieve, nevertheless may be more apparent than real. In terms of available resources, ratemaking in administrative hearings is plainly not conducted on a level playing field. Consumer representatives may have at least as good a chance--and probably better--of influencing the result of a negotiated rate settlement than of prevailing on the issues in a contested litigation.<sup>20</sup>

### The Efficient Allocation of Resources

One of the most commonly accepted virtues of competition is its ability to efficiently allocate economic resources. Traditional regulatory processes, however, have been criticized for their inability to drive efficient economic outcomes. The now famous Averch-Johnson model concludes that firms under regulation will produce at other than minimum cost and overinvest in capital.<sup>21</sup>

Paul Joskow also criticizes the ability of regulation to produce economically efficient outcomes. He argues that relatively passive regulatory commissions do not adjust the utility rate of return to reflect market forces but, instead, undertake regulatory review only when utilities attempt to raise prices.<sup>22</sup> The result is that utilities are over-compensated if profits can be increased without increasing prices and penalized when increasing factor prices require increased prices to the consumer.

And Clair Wilcox criticizes the ability of current regulatory models to produce economically efficient outcomes. He states:

Regulation cannot set prices below an industry's costs however excessive they may be. Competition does so, and the high-cost company is compelled to discover means whereby its costs can be reduced. Regulation does not enlarge consumption by setting prices at the lowest level consistent with a fair return. Competition has this effect. Regulation fails to encourage

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<sup>20</sup>William J. Cowan, "Remarks," *Proceedings of the 98th Annual Convention and Regulatory Symposium of the National Association of Regulatory Utility Commissioners*, (Washington, D.C.: NARUC, 1986) p. 86.

<sup>21</sup>Joskow, p. 294.

<sup>22</sup>Joskow, p. 298.

performance in the public interest by offering rewards and penalties. Competition offers both.<sup>23</sup>

But would ADR produce any better outcomes? There is little within the structure of ADR, aside from the potential to generate more creative outcomes, to suggest that negotiated, non-adversarial techniques applied with the same regularity as traditional adjudicatory techniques would perform better. One option, however, discussed within the larger rubric of ADR, would change the frequency of interactions and might combat the passivity tradition cited earlier.

Bill Spratley, the chairperson of this session, argued in a 1986 BRIC paper for the establishment of annual regulatory reviews as an alternative to episodic rate cases. According to Spratley,

The current structure of the regulatory process in Ohio provides a forum to microscopically look at each piece of the puzzle: to study in-depth the independent operation of each piece and to make sure each piece operates according to rules specified for its operation. However, the process has become so fragmented and specialized that it does not allow for a clear view of the interrelationship of each to piece to either other pieces of the puzzle or to the puzzle in its entirety. This would be somewhat like putting together a puzzle blindfolded.

Our solution is an annual review of all the pieces at one time on one plain.<sup>24</sup>

Spratley concludes that these periodic reviews would:

...allow the regulator to fully judge the effects of their independent decisions regarding each piece...allow them to balance their decision regarding each piece with their objectives...allow them to question whether a decision based on a microscopic review be as sound when all the ramifications of that decision are tested against sound regulatory objectives...(and) provide a new, practical forum for rate reductions, if necessary, and give a good look at service complaints and the performance of the utility consumer education programs.<sup>25</sup>

By creating an ongoing dialogue, they might also end the passivity tradition of regulatory commissions and establish a partnership between the utilities and regulators

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<sup>23</sup>Clair Wilcox, *Public Policies Toward Business* (3d ed.: Homewood, Ill.: Richard Irwin, Inc., 1966) p. 476-477 cited in Phillips, p. 799-800.

<sup>24</sup>William A. Spratley and Kenneth N. Rosselet, "Annual Regulatory Reviews: Solving Ohio's Puzzle," *Proceedings of the Fifth NARUC Biennial Regulatory Information Conference*, (Columbus, Ohio: NRRI, 1986), p. 40-41.

<sup>25</sup>*Ibid.*, p. 42.

that might better allow for the replication of market forces. They might also allow for the sequential resolution of the complex and evolving problems, which are typical of utility markets today.

### Inducements to Innovation

When we speak of innovation for regulated utilities, we refer to two interrelated concepts. The first is innovation by the utility itself into alternative technologies or methods of service.

Competition provides inducements to innovation of that variety. When a firm in a competitive market raises capital, it is required to seek out ways to earn a return on investments at the cost of capital or higher. If it fails to do so, a vicious cycle is initiated which forces the firm, driven by the inability to raise capital at low rates, to generate higher, and usually unattainable, rates of return. For firms in competitive markets, therefore, innovation is a way of life.

Regulated firms are guaranteed a rate of return and argue that the rate of return should be increased if they are to innovate. Not surprisingly, utilities have been criticized for their reticence to innovate, and it has been argued that much of the technical enhancements to utility service delivery have come from suppliers and those peripheral to the industry. To quote Wilcox again on the shortcomings of regulation:

It cannot prescribe quality, force efficiency, or require innovation....It does nothing to stimulate change, seeking to maintain order on the basis of the old technology.<sup>26</sup>

Once again, however, it is not adequate or fair to simply recant the alleged failures of the current regulatory regime. Would the adoption of ADR make a difference? The answer, I think, is yes if one adopts two arguable propositions. The first proposition is that incentive regulation, which allows the utility to keep at least some of the fruits of its innovation, provides the best mechanism for inducing investment in innovative technologies. The second proposition is that ADR can accommodate incentive regulation better than adjudicatory ratemaking. Although it is possible to create incentive systems within an adjudicatory framework, the negotiations inherent in reaching the agreements necessary for the implementation of incentive regulation could be better accomplished under ADR.

The second aspect of innovation in the regulated utilities, which is related to the first, is the extent to which non-traditional solutions to regulatory problems can be implemented (including incentive regulation). When a commissioner or administrative law judge hears a case, he or she is constrained by the "four-square" of the record, which is defined by the range of ROR and cost of service options proposed by the utility and the consumer advocates. And the decision rendered must be supported by the record.

The same constraints do not apply in ADR. For better or worse, ADR is not as

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<sup>26</sup>Wilcox as cited in Phillips, p. 800.



concerned with maintenance of a detailed and comprehensive record nor does it limit the range of potential solutions. In fact, one of the goals of principled negotiations, one of the bases of ADR, is the development of a wide range of creative options of mutual benefit.

In short, if our goal is simply to induce regulated utilities to invest in innovative technologies, the key is the provision of incentives rather than regulatory coercion. ADR may better accommodate incentive systems than traditional adjudicatory ratemaking. And if our goal is to create comprehensive solutions that benefit all parties, ADR is clearly superior.

### Summary and Conclusion

In general, ADR matches up against adjudicatory ratemaking as follows:

Information Exchange: For creating a formal record and external flow of information, adjudicatory ratemaking is superior. For creating the internal and informal flows, which support decision making, ADR is the better alternative.

Consumer Sovereignty: Consumers can be better represented by ADR if 1) they are well organized and capable of self-defense, 2) common interests exist between the parties, and 3) consumers understand their short-run and long-run interests and are not willing to shift costs to unrepresented parties.

Efficient Allocation of Resources: It is doubtful that ADR would significantly improve the performance of adjudicatory regulation if it continued to rely on episodic interactions between the parties. An alternative that might create more efficient economic outcomes is the establishment of annual regulatory reviews.

Inducements to Innovation: ADR is superior to adjudicatory ratemaking in inducing utilities to invest in innovative technologies to the extent to which it better accommodates incentive regulation. For creating innovative solutions to regulatory dilemmas, ADR also holds promise.

It has been the objective of this paper to establish an effectiveness criterion for the evaluation of ADR as a replacement for traditional adjudicatory ratemaking. While the analysis used here was informal and not rigorously scientific, it does indicate that ADR on net holds substantial promise of protecting the interests of consumers from the abuses of monopoly power. Clearly there will be no overnight revolution overthrowing decades of regulatory practice. If, therefore, ADR is to continue to be used to improve the practice of regulation of public utilities, it will progress through the efforts of open-minded regulators to carefully apply ADR as local conditions permit and those who continue to hone the critical details of the ADR process.



**6. PRIVACY, INCLUDING TECHNOLOGICAL ASPECTS**

**Chairperson: Rohan Samarajiva**

**National Regulatory Research Institute**



## CURRENT PRIVACY ISSUES IN UTILITY REGULATION

By Daniel J. Kucera and Christopher J. Townsend\*

*The intensity and complexity of life, attendant upon advancing civilization, have rendered necessary some retreat from the world, and man, under the refining influence of culture, has become sensitive to publicity, so that solitude and privacy have become more essential to the individual; but modern enterprise and invention have through invasions upon his privacy, subjected him to mental pain and distress, far greater than could be inflicted by mere bodily injury.<sup>1</sup>*

These words, written over one hundred years ago by legal scholars Samuel D. Warren and Louis D. Brandeis, are increasingly appropriate in today's world of rapidly intensifying technology and regulatory change. Privacy issues pervade the world of utilities, often in ways which are not readily apparent. Regulatory commissions, ratepayers and utilities all are becoming more sensitive to a variety of issues relating to the right of privacy.

### I. INTRODUCTION

Legislators, regulators and utility companies will have to confront various privacy issues as new technology, deregulation and competition all make privacy issues more apparent. Caller ID, of course, currently is a prominent topic which has required regulators and industry officials to address the issues raised by privacy concerns. Many states have already adopted a preliminary policy to handle that technology. However, other privacy issues have not been as fully explored. Specifically, the topics of informational privacy and the privacy of property have not been examined broadly in the utilities context.

In recent years, information technology and "networking" have made it significantly easier to compile all kinds of personal information once thought to be private.<sup>2</sup> Utilities often obtain personal information about their customers in the ordinary course of business, perhaps not even recognizing the extent of information they have compiled. Applications for service, customer inquiries and usage data all provide potential sources of private information. Although none of this information individually may seem intrusive, a compilation of all these bits of information, from these and other benign sources, may provide a fairly complete portfolio of a person. What may be most troublesome is the fact that individuals may not realize that any such portfolio is being compiled.

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<sup>1</sup> Warren and Brandeis, "*The Right to Privacy*," 4 Harv. L. Rev. 193, 196 (1890).

<sup>2</sup> One report estimated that more than 6 billion records about Americans have been compiled by computers. Editorial, "*Build Solid Walls Around Our Privacy*," Bus. Wk. Sept. 9, 1989, p. 122.

What duty, if any, is imposed upon utilities to protect the privacy of this information? Certainly a utility company may use the information to target the specific needs of its customers or its operations. But is a utility free to provide that information to someone else? Can creditors of the utility's customers obtain payment information? Must a utility release customer information to law enforcement officials? Should a company demand that a warrant be served for the information? What types of information can regulators demand from the utility? Can a regulatory commission require a utility to disclose to it personal data on its customers? If a release of information may violate the customers' right to privacy, can a utility company assert that right as a reason to not provide the requested information? All of these questions are distinct and important issues that relate to the protection of "informational privacy," an area of the law which has just begun to develop.<sup>3</sup>

Yet another area that has not been fully explored is that of the right of privacy of property. Though once it was common to think of private property as being completely free from intrusion, now it is apparent that there are exceptions to that general rule and the exceptions appear to be growing. If a customer consents, either explicitly or implicitly, a utility may come on to the property to inspect the premises. Additionally, when there is an overriding public interest, the courts have seemed willing to allow some inspection of the premises, especially when dealing with corporations. Another trend appears to be the tendency of Congress and state legislators to make utilities responsible for testing and occurrences on customer premises, *e.g.*, USEPA's "lead" rule.

## II. ROOTS AND BASIS FOR RIGHT OF PRIVACY

The "right" of privacy is not expressly stated in the Constitution, yet its boundaries are being defined by the developing law. One hundred years ago, the "right" of privacy was not recognized. Now the right of privacy is a well-established, although not well-defined, area of the law. There is a constitutional right of privacy, as well as various state and federal statutes which are designed to protect the right, and a common law right.

Initially, it is important to draw a distinction between the federal constitutional right to privacy and the common-law right to privacy. Generally federal constitutional rights are rights that individuals have against the federal or state government.<sup>4</sup> In order for a person to claim a violation of federal constitutional rights against a business entity, it is necessary that the individual prove a "nexus" or working relationship between the government and the

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<sup>3</sup> See Trubow, "Protecting Informational Privacy in the Information Society," 10 N. Ill.U. L. Rev. 521, 521 (1990) (Claiming informational privacy is "a development of the 1970's").

<sup>4</sup> The Fourth Amendment to the United States Constitution provides: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation and particularly describing the place to be searched, and the persons or things to be seized." U.S. Const. amend. IV. By reason of the fourteenth amendment, the fourth amendment is applicable to states. U.S. Const. amend. XIV § 1.

business entity.<sup>5</sup> The common-law right of privacy, on the other hand, may be asserted against any private individual or business entity without having to prove any nexus. Dean Prosser established four categories of potential violations of this common-law right: unreasonable intrusion upon the seclusion of another; publicity given to one's private life; appropriation of another's name or likeness; and publicity that places another in a false light.<sup>6</sup> Both the federal constitutional right to privacy and the common-law right to privacy have given rise to various statutes designed to protect an individual's privacy.

The common thread throughout the constitutional, common-law and statutory rights to privacy is a protection of the condition of privacy -- the right to be left alone.

#### A. THE CONSTITUTIONAL RIGHT OF PRIVACY

When the Supreme Court first recognized a constitutional right to privacy, it had difficulty in articulating the precise source of the right. The Court stated that the right comes from constitutional guarantees that "have penumbras, formed by emanations from those guarantees that help give [the guarantees] life and substance."<sup>7</sup> The law on the constitutional right to privacy has evolved with similar clarity.

The Supreme Court has recognized that the due process clause of the constitution protects two separate interests: "decisional autonomy" and "informational privacy."<sup>8</sup> Decisional autonomy protects the interest in independence in making certain kinds of fundamental decisions. The cases involving decisional autonomy range from abortion to education. Informational privacy is the right of persons to choose freely under what circumstances and to what extent to expose information about themselves, their attitudes and their behavior.<sup>9</sup> The cases which affect utilities are those involving informational privacy.

The touchstone of the fourth amendment informational privacy analysis is whether a person has a constitutionally protected reasonable expectation of privacy.<sup>10</sup> The test is twofold. First, there is an inquiry as to whether the person has demonstrated an expectation of privacy in the related information. Once that has been established, the court is to inquire whether society is willing to recognize that expectation as reasonable. Under the second

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<sup>5</sup> See e.g., *Southern Bell Telephone and Telegraph Co. v. Hamm*, 409 S.E.2d 775 (S.C. 1991) in which the court refused to find a nexus between the phone company and the government. See also, Crook, "Sorry Wrong Number: The Effect of Telephone Technology on Privacy Rights," 26 Wake Forest L. Rev. 669, 673 (1991).

<sup>6</sup> Prosser, "Privacy," 48 Calif. L. Rev. 383 (1960).

<sup>7</sup> *Griswold v. Connecticut*, 381 U.S. 479, 484 (1965).

<sup>8</sup> *Whalen v. Roe*, 429 U.S. 589 (1976).

<sup>9</sup> Westin, *Privacy and Freedom* 7 (1967) cited in Flaherty, "On the Utility of Constitutional Rights to Privacy and Data Protection," 41 Case W.Res. L. Rev. 831, 832 (1991).

<sup>10</sup> *Katz v. United States*, 389 U.S. 347, 360 (1967) (Harlan, J. concurring).

prong of this analysis the test of legitimacy is not whether the individual attempts to conceal the information, but rather whether the government's intrusion infringes upon personal and societal values.<sup>11</sup>

Thus, in order to find that a utility has violated an individual's constitutional rights, there must be a "nexus" or connection between the government and the utility company; the person must demonstrate a desire to keep the information private; and there must be a finding that the information involved is "personal". Courts generally have been unwilling to find a sufficient nexus in cases where a state regulatory commission has merely approved of a private company's action.<sup>12</sup> Indeed, for most conduct by public utilities that might involve privacy issues, none of these requirements can be satisfied.

## B. THE COMMON-LAW RIGHT OF PRIVACY

Difficulty in defining the scope of the common-law right of privacy has existed since the right was first recognized.<sup>13</sup> The common-law right of privacy, or the tort of invasion of privacy, is tied to societal expectations; as those expectations change, so does the scope of this right.<sup>14</sup> Controversy has arisen regarding society's expectation about whether the flow of information should be restricted, the purposes for which information is gathered and what restrictions should be placed on the dissemination of information. In 1890 the concerns centered around isolated complaints about press publicity of private facts.<sup>15</sup> Since the 1960s, the concerns have mainly centered around issue of individual autonomy. Cases of the 1990's and beyond are likely to focus on individuals' right to informational privacy.

In many respects, the common law of privacy is very old, rooted in the prohibitions against trespass and defamation. Although traditionally courts have limited the application of the tort of invasion of privacy, recently courts, fueled by legal scholarship, have begun to recognize a broader, more general right.<sup>16</sup>

For most legal changes, the courts have lead the way, fashioning new common-law remedies to meet the needs created by evolving societal conditions and technological

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<sup>11</sup> *Oliver v. United States*, 466 U.S. 170, 181 - 83 (1984).

<sup>12</sup> See Crook, *supra* note 5, at p. 675. *But see, Public Utilities Commission v. Pollack*, 343 U.S. 451 (1952), in which the Supreme Court found that there was a sufficiently close nexus between the District of Columbia Public Utilities Commission and a private railway company regulated by the commission.

<sup>13</sup> Grossberg, "Some Queries About Privacy and Constitutional Rights," 41 Case W. Res. L. Rev. 857, 858-59 (1991) (definitional issues have pervaded the privacy debate since the nineteenth century).

<sup>14</sup> *Id.* at 859.

<sup>15</sup> *Id.*

<sup>16</sup> Turkington, "Legacy of the Warren and Brandeis Article: The Emerging Unencumbered Constitutional Right to Informational Privacy," 10 N. Ill. U. L. Rev. 479, 487 - 90 (1990); Flaherty, *supra* note 9, at pp. 837-41.



advances.<sup>17</sup> However, the issues involving informational privacy pose a unique problem for the courts. The difficulty that courts have in dealing with the effects new technologies have on individual's privacy rights is that privacy is based upon *expectations*.<sup>18</sup> Since its creation, the common-law of privacy law has lagged behind technology. Although technological advances were the initial impetus for recognizing the right to privacy, the law has not kept pace with technological advances. Since new technology, by definition, has no track-record courts are left to speculate as to what reasonable expectations *should* be.<sup>19</sup> Thus, the rulings of today lay the groundwork for the reasonable expectations of tomorrow.

Nevertheless, precisely because the definition of privacy changes with time as culture changes, the courts provide the best way to refine the boundaries of privacy.<sup>20</sup> Privacy, under the common law, therefore is a "living" concept. Courts are continuously called upon to make decisions based on society's evolving beliefs. The system of case law and precedent is flexible enough to let courts make the difficult, fact-dependent judgments necessary to determine the scope of privacy.<sup>21</sup> If the courts understand that all privacy rights are designed to protect human dignity, they may relax their interpretation of the elements of these torts.<sup>22</sup>

### C. THE STATUTORY BASIS FOR THE RIGHT OF PRIVACY

Legislatures at both the state and federal level have dealt with privacy issues on an industry-specific, if not a case by case, basis. The focus of the legislation often overlooks the broader problems associated with the collection of data, the collection of unnecessary data, the accuracy of data, the use of the information and length of storage of the information.<sup>23</sup> And then, rather than granting rights to the individual to protect privacy interests, the legislation almost invariably restrains the industry, without a corresponding

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<sup>17</sup> Note, "Privacy, Computers and the Commercial Dissemination of Information," 65 Tex. L. Rev. 1395, 1425 (1987).

<sup>18</sup> Grossberg, *supra* note 13, at p. 858.

<sup>19</sup> Cass, "Privacy and Legal Rights," 41 Case W. Res. L. Rev. 867, 872 (1991)(the problem with privacy cases is that they cannot be resolved until a clear structure already exists). *See also Re Southern Bell Telephone and Telegraph Co.*, 123 PUR 4th 73 (Fla. PSC 1991)(adopting a case-by-case method of reviewing issues involved with Caller ID to better handle the rapidly evolving technology).

<sup>20</sup> Note, *supra* note 17, at p. 1426.

<sup>21</sup> *Id.* The author suggests the courts apply appropriation tort to protect dissemination of an individual's profile. The intrusion tort could be used to prevent commercial dissemination of private facts. Public disclosure of private facts may also prevent computer distribution of private information.

<sup>22</sup> Note, "The Constitutional Protection of Informational Privacy," 71 Bost. U. L. Rev. 133, 154 -55 (1991)(arguing that the Supreme Court should recognize a broad fundamental right to privacy); Note, *supra* note 17, at p. 1419 (when privacy is viewed as unified interest, it becomes easier to protect informational privacy).

<sup>23</sup> *See* Note, *supra* note 17, at p. 1422.

recognition of individual rights. In order to fully address the issue of informational privacy, legislation also would have to limit the amount of personal information to be collected, limit the circumstances under which someone can examine the personal information and clearly state how the personal information is protected.<sup>24</sup>

The current piecemeal approach has led to incongruous legislative results: the federal government cannot combine information from its data banks to generate a composite picture of a person, but a state or local governmental agency could compile such a portfolio<sup>25</sup>; consumer credit reporting agencies are required to assure the accuracy of the information that they disseminate about a person's credit worthiness while other corporations are free to buy and sell that information without any such requirement<sup>26</sup>; USEPA can take aerial photographs of a chemical company's plant, though a competitor might be prohibited from taking the exact same pictures.<sup>27</sup>

Nevertheless, much of the current legislation recognizes the importance of privacy, the need to place safeguards on some personal information and the potential destructive uses of such information. State and federal statutes, though perhaps not ideally crafted, do provide a backdrop to any discussion of privacy issues. Additionally, although these statutes may not be directly applicable to all aspects of the utility industry, they provide some guidance for what types of information utilities reasonably *should* protect.

1. *Statutory Protections of Individuals From Governmental Invasions of Privacy.*

Three federal statutes are the principal means for protecting the privacy of information obtained by the federal government: The Privacy Act of 1974 (the "Privacy Act"<sup>28</sup>), the Computer Matching and Privacy Protection Act of 1988 (the CMPPA<sup>29</sup>), and

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<sup>24</sup> *Id.* at p. 1397.

<sup>25</sup> The Computer Matching and Privacy Act of 1988 prohibits the federal government from incorporating unrelated computerized files to create a single file. 15 U.S.C. § 552(a). State and local governments, however, are not covered under the Act, and states have failed to pass similar legislation to restrict such practice. Trubow, *supra* note 3, at p. 524.

<sup>26</sup> The Fair Credit Reporting Act requires "consumer credit reporting agencies" follow certain procedures to assure the accuracy of data they collect. 15 U.S.C. § 1681e(b). The definition of "consumer credit reporting agencies" limits the applicability of the Act. "[A consumer credit reporting agency is] any person which, for monetary fees, dues or on a cooperative nonprofit basis, regularly engages in whole or in part in the practice of assembling or evaluating consumer credit information or other information on consumers for the purpose of furnishing consumer reports to third parties." 15 U.S.C. § 1681a(f). *See also* *Rush v. Macy's New York, Inc.*, 775 F.2d 1554 (11th Cir. 1985)(store that provided information not considered to be a credit reporting agency).

<sup>27</sup> *See, Dow Chemical Co. v. United States*, 476 U.S. 227, 231 - 233 (1986).

<sup>28</sup> 5 U.S.C. § 552(a).

<sup>29</sup> 5 U.S.C. § 552(a).

the Freedom of Information Act (the FOIA<sup>30</sup>). The Privacy Act provides the predominate source of privacy protection. The Privacy Act regulates the information practices of federal agencies preventing agencies from collecting information for one purpose and using it for another. The CMPPA was enacted to close a loophole in the Privacy Act which allowed computer matching programs between the agencies. The CMPPA establishes a mechanism to monitor such matching activities. The FOIA, though designed to increase public disclosures of documents, excludes from disclosure records or information compiled for law enforcement purposes “to the extent that the production of such law enforcement records or information . . . could reasonably be expected to constitute an unwarranted invasion of personal privacy.”<sup>31</sup>

Other protections come from such sources as Title III of the Omnibus Crime Control and Safe Streets Act (the OCCSSA<sup>32</sup>) which provides protection for oral and wire communications. The OCCSSA provides that if an eavesdropping device is to be used by the government, there must be a showing of probable cause of the commission of a crime, supported by an affidavit describing the alleged crime and the place to be eavesdropped. If a “wire communication” is to be tapped, the authorities must first obtain a court order. If, on the other hand, the device is going to be used only to listen to oral communications, the communications are protected only if there is a “reasonable expectation” of privacy. The OCCSSA has been expanded by the Communications Act of 1984 and the Electronic Communications and Privacy Act of 1986 (the ECPA<sup>33</sup>) to provide protection for phone calls made over cellular telephones. Under the ECPA, only when one of the parties consents to disclosure of the contents of a private communication can the contents be disclosed. Similar provisions protect the contents of stored messages, such as electronic mail.<sup>34</sup>

None of these acts, however, applies to state or local government actions or to actions by private companies.<sup>35</sup> Although states often enact similar legislation to prohibit such activities, there is no uniform prohibition on wire taps or “matching” of information by government officials.<sup>36</sup> These acts also fail to provide any protection for conversations over

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30 5 U.S.C. § 552(b).

31 5 U.S.C. § 552(b)(7)(C).

32 18 U.S.C. §§ 2510-20.

33 18 U.S.C. §§ 2510 - 20. *See also* 18 U.S.C. §2701-2709.

34 18 U.S.C. § 2702(b).

35 For a general discussion of most of these acts, *see* Reidenberg, “*Privacy in the Information Economy: A Fortress or Frontier for Individual Rights?*,” 44 Fed. Comm. L.J. 195, 209 -219 (Mar. 1992).

36 *Id.*

cordless phones or provide any protection regarding identifying data.<sup>37</sup> A call made by someone from a regular phone to someone on a cordless phone may be monitored; such things as the time, place and duration of a phone call are not protected. Finally, these acts do not prevent the disclosure of the phone numbers called or the phone number from which the call is made, and therefore do not provide a basis for arguments made by the opponents of Caller ID.

2. *Statutory Protections of Individuals From Private Parties Violating the Right of Privacy.*

The Cable Communications Policy Act of 1984 (the CCPA<sup>38</sup>) is one of the few acts that provides protection against private enterprises violating an individual's right of informational privacy.<sup>39</sup> The CCPA addresses most areas of potential violations. The CCPA requires that cable operators<sup>40</sup> inform their customers of (1) the collection of any personal information, (2) the reason why the information is being collected, and (3) the anticipated disclosure of the information. There are also sections of the CCPA which limit the duration of storage of such information and which limit the reasons for which the information may be disclosed. If information is released about an individual in violation of the CCPA, there is a provision allowing for damages to be recovered.

The Fair Credit Reporting Act (the FCRA<sup>41</sup>) was designed to protect violations of privacy in the private sector. The FCRA bars credit agencies from sharing credit information with anyone but authorized customers. Additionally, the FCRA requires that consumers be notified of credit investigations for insurance and employment purposes; it also gives consumers the right to review their credit records. However, the scope of this law is limited in that it does not apply to companies other than credit agencies and allows credit agencies to disclose their information to anyone who has a "legitimate business need."<sup>42</sup> Unlike the CCPA, under the FCRA, there are no limits as to the type of information that can be gathered, the purposes for which the information may be used or the duration that the information may be stored. Companies are increasingly using this data,

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37 See Crook, *supra* note 5, at pp. 687 - 695 (discussing the lack of regulation regarding eavesdropping on cordless phone conversations); Smith, "We've Got Your Number! (Is It Constitutional To Give It Out?): Caller Identification Technology And The Right To Informational Privacy," 37 UCLA L. Rev. 145 (1989)(discussing Caller ID).

38 47 U.S.C. § 521, *et seq.*

39 47 U.S.C. § 551.

40 The term "cable operator" includes "any person or group of persons (A) who provides cable service over a cable system and directly or through one or more affiliates owns a significant interest in such cable system, or (B) who otherwise controls or is responsible for, through any arrangement, the management and operation of such a cable system . . . ." 47 U.S.C. § 522(4).

41 15 U.S.C. § 1681.

42 Unfortunately, the term "legitimate business need" is not defined in the Act.

combined with data collected from a host of other sources, to compile personal portfolios on individuals without the individuals' knowledge.<sup>43</sup>

### III. PRIVACY ISSUES UNIQUE TO TELECOMMUNICATIONS

#### A. CALLER ID

Caller ID poses unique problems for the telephone industry and regulators as they attempt to balance the rights of the person screening the call against the rights of the person calling.

There are obvious advantages to Caller ID. The person receiving the call has the ability to trace the source of allegedly fraudulent, obscene or harassing calls.<sup>44</sup> Additionally, Caller ID can be useful to assist emergency services such as "911" hotlines, when a person in need of assistance is unable to tell the operator the location from which the call is being placed.<sup>45</sup> Proponents of the service also claim that it reduces the number of "false alarm" calls, pointing to decreased fire alarms and bomb scares.<sup>46</sup>

The arguments asserted against Caller ID, however, are several. Opponents claim that the loss of control over private, unpublished numbers represents a serious invasion of privacy. They claim that individuals have the right to be free from telemarketers' repeated calls<sup>47</sup> and that Caller ID invites such calls.<sup>48</sup> To counter the argument that the Caller ID service may assist emergency services, opponents maintain the number of calls to crisis

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<sup>43</sup> Note, *supra* note 17, at pp. 1400 - 01 (discussing the ways in which databases can be combined to provide fairly complete profiles of individuals).

<sup>44</sup> This is often given as a reason to adopt Caller ID. See e.g., *Re Rates and Regulations for Caller ID Service*, 109 PUR 4th 159, 161 (N.C. Util. Comm'n 1989). For all practical purposes, however, this advantage is lost when companies are required to offer per-line and per-call blocking. See *infra* notes 55-56, and accompanying text.

<sup>45</sup> Smith, *supra* note 37, at p. 207.

<sup>46</sup> *Id.*

<sup>47</sup> In *Rowan v. United States Post Office Dep't*, 397 U.S. 728, 737 (1968), the Supreme Court upheld federal legislation permitting individuals to have their names and addresses removed from certain mailing lists. The Court declared that the "ancient concept that 'a man's home is his castle' into which 'not even the king may enter' has lost none of its vitality." Certainly constant "junk phone calls" are just as annoying as a steady flow of junk mail.

<sup>48</sup> The following example details just how far marketers will go to assemble lists for telemarketing:

"During a toy manufacturer's television ad, a clown asked children to place their telephone receivers in front of the TV. The studio then broadcast dialing tones that called an 800 number, which resulted in kids dialing the number. The 800 number called had an automatic number identification service and recorded the children's phone numbers. The purpose was to create marketing lists." Marx, "Privacy and Technology," *Whole Earth Review*, Dec. 22, 1991, p. 90.

centers will be reduced because people will fear losing their anonymity.<sup>49</sup> Law enforcement officers that place calls to suspected criminals also may be at risk.<sup>50</sup> Finally, opponents argue that Caller ID violates many state wire tap laws, which prohibit the transfer of any information without the consent of the parties to the phone call.<sup>51</sup>

Neither side of the debate seems to have the upper hand when discussing privacy concerns. Caller ID can be viewed either as a violation of the privacy rights of the person placing the call or protection of the rights of the person receiving the call. It could be a violation of the caller's privacy in that the caller is giving up a piece of information about the caller which otherwise the caller may not choose to divulge, thus infringing on the caller's right to informational privacy.<sup>52</sup> However, Caller ID also protects the privacy rights of the receiver, who is able to decide whether to be disturbed by the person who is calling, furthering the receiver's right to be left alone.

The right to informational privacy is far from absolute. A person's telephone number is usually easily accessible and not generally considered "private" information.<sup>53</sup> Likewise, there is no absolute right to be left alone.<sup>54</sup> For example, it is difficult to recognize a right to be able to identify the person calling when there is no corresponding right to identify the person who mails a letter.

One solution to these privacy problems that has been adopted in several states is to allow per-line and per-call blocking of Caller ID.<sup>55</sup> This procedure allows persons who do not want their telephone number displayed to block out their number from the display. While this solution has the advantage of protecting the caller's privacy, it reduces the benefit of Caller ID to the person receiving the call. It seems unlikely that telemarketers or persons making obscene, fraudulent, or harassing phone calls would choose to display their number,

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49 See e.g., *Pennsylvania Public Utility Comm'n v. Bell Telephone Co.*, 108 PUR 4th 285, 293 (Penn. PUC 1989), *aff'd on other grounds*, 130 P.U.R. 4th 280, 1992 Pa. LEXIS 242 (Pa. 1992).

50 Crook, *supra* note 5, at p. 672.

51 See e.g., *Pennsylvania Public Utility Comm'n v. Bell Telephone Co.*, 130 P.U.R. 4th 280, 1992 Pa. LEXIS 242 (Pa. 1992)(holding that Caller ID violated the Pennsylvania wiretap law).

52 Smith, *supra* note 37, at pp. 213-17.

53 See Turkington, "Legacy of the Warren and Brandeis Article: The Emerging Unencumbered Constitutional Right to Information Privacy," 10 N. Ill.U. L.Rev. 479, 505 (noting the importance of distinguishing between "intimate" and other information). See also *infra* note 87 and accompanying text.

54 Flaherty, *supra* note 9, at p. 832-33.

55 This is the solution that the Illinois Commerce Commission adopted, and seems to be the popular choice of state commissions. For a brief discussion of various approaches taken by regulators throughout the country, see Nagelhout, "Caller ID: Privacy and Blocking Issues," Public Util. Fortnightly, Mar. 1, 1992, pp. 31-33.

if given the choice. While the person receiving the call could choose not to answer any calls unless the number is displayed, this may be an imperfect solution at best.<sup>56</sup>

Another suggested solution is to allow only select persons access to Caller ID technology.<sup>57</sup> Under this proposal only those who can demonstrate a need for Caller ID would be allowed to use the technology.<sup>58</sup> Thus, Caller ID would be given to emergency hotlines, police and fire departments and individuals who could show the need for such a service. Alternate technologies, such as pen registers, call tracing<sup>59</sup> and answering machines could be used to screen obscene calls and track down offenders. This solution avoids the problems associated with per-line and per-call blocking.<sup>60</sup> Additionally, it protects the privacy interests of the caller. However, it denies the benefits of Caller ID to the population generally.

The feasibility of requiring the various alternatives deserves additional attention of regulators and the courts. Caller ID has just begun to be challenged in the courts.<sup>61</sup> Most state court cases have upheld the use of Caller ID with a requirement that per-line and per-call blocking be made available.<sup>62</sup> At least one court, however, has rejected Caller ID as a violation of the caller's right to privacy under the state wiretap law.<sup>63</sup>

Although it seems unlikely that the Supreme Court will address this issue in the near future, a prior Supreme Court case involving somewhat similar technology provides some insight as to how the Supreme Court might address the problems relating to Caller ID. An individual claiming that a fourth amendment right of privacy was invaded by Caller ID

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56 Although the person would not receive harassing calls, he also would not receive calls from friends who have blocked their number.

57 Smith, *supra* note 37, at p. 209

58 This solution was endorsed by the Commonwealth Court of Pennsylvania in *Pennsylvania Coalition Against Domestic Violence v. Pennsylvania Public Utility Commission*, 568 A.2d 726, 729-30 (Pa. Comw. 1989).

59 Call tracing would allow the customer to trace a call, sending a print out of the called and calling numbers and the time, date, and length of the call. Smith, *supra* note 37, at p. 211.

60 Crook, *supra* note 5, at p. 709.

61 Pennsylvania and South Carolina are the only states in which the highest court has ruled on Caller ID.

62 See e.g., *Re New York Telephone Co.*, 132 PUR4th 525 (N.Y.P.S.C. 1992)(approving Caller ID with blocking features).

63 *Pennsylvania Public Utility Comm'n v. Bell Telephone Co.*, 130 P.U.R. 4th 280, 1992 Pa. LEXIS 242 (Pa. 1992). The court held that under the state wiretap law, the consent of both parties must be obtained before such a device could be used. Although some states have similar requirements in their wiretap laws, most only require one party to consent to its use. See e.g., *Re New York Telephone Co.*, 132 PUR 4th 525, 531 (N.Y. PSC 1992)(holding that consent of the intended receiver of the call is sufficient to waive any rights under the state wiretap law).

would not only have to prove a nexus between the telephone company and the government,<sup>64</sup> but would also have to explain why there is a reasonable expectation that the number from which the call was placed will not be disclosed. In *Smith v. Maryland*,<sup>65</sup> the Supreme Court determined that calling parties have no reasonable expectation of privacy in the disclosure of the telephone numbers they dial. In *Smith*, the police were allowed to use a pen register to trace the calls of a thief who was repeatedly calling his victim. The Court held there was no violation of the fourth amendment and allowed the record of the calls to be used to convict the thief. The Court reasoned consumers have no reasonable expectation of privacy in the numbers they call, since consumers realize they must convey the number called to the telephone company so that their calls can be completed.<sup>66</sup> If the Court follows the reasoning of *Smith*, it is likely to reject privacy challenges to Caller ID. Since the telephone company must know the source of a call in order to bill the caller, there cannot be a privacy interest in that number.

On the assumption that information readily disclosed or available carries no protection, some lower courts have devalued privacy expectations when the information is a matter of public record.<sup>67</sup> The courts reason that since phone numbers are generally available to the public, there cannot be an expectation that the number will be kept private. Opponents of Caller ID may counter that the disclosures which are complained of cannot be obtained in the phone book.<sup>68</sup> For example, a person calling to inquire about a service does not expect that information to be broadcast to telemarketers. Likewise, a person who calls an AIDS hotline does not expect that an anonymous phone call will allow someone to identify the caller. Of course, these expectations can change as the technology becomes more commonplace and society changes.

## B. COMPUTERS

As Warren and Brandeis wrote over a century ago, “numerous mechanical devices” have threatened an individual’s “right to be left alone.”<sup>69</sup> Privately owned and operated computers, including utility computers, contain vast amounts of information concerning the

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<sup>64</sup> The South Carolina Supreme Court in evaluating constitutional challenges to Caller ID held that was not a sufficient nexus between the government and the telephone company. *Southern Bell Telephone and Telegraph Co. v. Hamm*, 409 S.E.2d 775 (S.C. 1991).

<sup>65</sup> 442 U.S. 735 (1979).

<sup>66</sup> By exposing the numbers dialed to the telephone company, telephone users have “assumed the risk” that the company will share that information with others. 442 U.S. at 744.

<sup>67</sup> *Fraternal Order of Police Lodges v. City of Philadelphia*, 812 F.2d 105, 116 (3rd Cir. 1987).

<sup>68</sup> The fact that it is common for telephone companies to permit subscribers to have an unpublished telephone number further supports the argument against Caller ID. *Smith*, *supra* note 37, at p. 200.

<sup>69</sup> Warren and Brandeis, *supra* note 1, at p. 195.



lives of Americans.<sup>70</sup> Unfortunately, legislators, regulators and the courts have tended not to take note of the coming of the Information Age and now are faced with the problem of trying to regulate an industry that has grown at a rate beyond anyone's imagination.<sup>71</sup>

Computers pose unique threats to the informational privacy interests of individuals. Computers can process increased amounts of data, facilitate the inspection of data, prolong the life of data, and allow companies to establish portfolios on consumers. Compounding all of these problems is the fact that computers may contain misleading or inaccurate information.

Computers have made it much easier for anyone interested to obtain and analyze a variety of data concerning individuals and corporations. Rather than having to request information be mailed, many documents can be accessed from any computer with a modem.<sup>72</sup> The ease of access to this data can have a dangerous effect -- nearly anyone can get access to documents most people would think are private, including trade secrets. Thus, any personal information contained within a database could be obtained and shared among the information networks.

Utility companies and even regulators should take extra precautions to safeguard against uninvited intrusions into their databases, not only to protect the privacy of their customers, but also to protect their own privacy interests. Companies never know who might be browsing through their files. For example, a computer hacker recently allegedly was able to breach the security of Bellcore, the research and development branch of the seven "Baby Bell" telephone companies.<sup>73</sup> The hacker then allegedly published detailed instructions on how anyone with a computer could eavesdrop on conversations.<sup>74</sup>

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70 By 1989 the three largest information networks had compiled information on over 160 million individuals. *"Is Nothing Private?,"* Bus. Wk. Sept. 4, 1989, p. 74.

71 Perhaps excepting George Orwell. One direct marketer has claimed, "through the magic of overlay and enhancement and merge, I can build a record about George Orwell's Winston Smith today that would make the Orwellian future vision almost seem real." *quoted in* Note, *supra* note 17, at p. 1401.

72 "When committed to paper and trapped within the confines of a manual file, the utility of information is markedly limited. But, when the information is available in an electronic data base of virtually endless dimension, open to analysis and processing at a rate of many millions of functions per second, and capable of being transmitted through time and space at the speed of light, the computer transforms the character of information itself, let alone the society that employs such technology." Trubow, *supra* note 3, at p. 522. *See also* Gavison, "Privacy and the Limits of Law," 89 Yale L.J. 421, 466 (1980)(tying the increased complaints about invasions of informational privacy to technological advances, since physical access to such information has not changed.)

73 "Computer Hacker Says It's His Constitutional Right," Chicago Tribune, Aug. 3, 1992, Sec. 1 p. 2.

74 The hacker maintained that since he had no relationship with the company, he did not have to obey the company's rules regarding privacy. However, under the Uniform Trade Secrets Act, adopted in 36 states and the District of Columbia, *anyone* who discloses a trade secret is violating the law and may be enjoined and sued for damages. *See e.g.*, Ill. Rev. Stat. ch. 140, ¶ 351, *et. seq.* The hacker also claimed to have first amendment protection, but this may be questionable given the Supreme Court's

Fortunately, the company was able to close the security loophole prior to the article being published. It does not take much imagination to think of the potential effects of outsiders having access to otherwise confidential information contained in utilities' databanks.

Computers also allow data to be kept long beyond the useful life of the information. Retaining information for any time longer than necessary allows the data to be used for purposes other than those for which it was collected.<sup>75</sup> Additionally, it may be difficult for individuals to escape outdated information, even if it is obsolete or inaccurate.<sup>76</sup> Since in most cases, the individuals have no right to inspect their files, and may not even know that the information exists, it is unlikely that inaccurate data will be detected until too late.

Finally, computers also allow for the ability to process increased amounts of data. Information networks are able to piece together bits of information drawn from a variety of sources in order to create portfolios of individuals.<sup>77</sup> When individuals have no knowledge why information is being gathered and do not have the opportunity to refuse disclosure, vast amounts of personal information may be collected and disseminated which the individual otherwise would choose to keep private.<sup>78</sup>

### C. VIDEOPHONES

Videophone no is longer technology of the future. When AT&T introduced its VideoPhone 2500 earlier this year, the company received over 10,000 calls the first day, and has several hundred calls each week since.<sup>79</sup> These calls were placed not to complain about the potential intrusions into personal privacy, but to place orders.<sup>80</sup>

The VideoPhone plugs into a normal phone jack and dials like an ordinary phone. The color picture moves at up to 10 frames per second, though the picture can be slowed to

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ruling in *United States v. Albertini*, 472 U.S. 675 (1985), that publishing matters of purely private concern should receive less weight than a company's privacy right in protecting its reputation.

<sup>75</sup> Reidenberg, *supra* note 35, at p. 206.

<sup>76</sup> A man spent five months in a Marine Corp prison after he was stopped for a routine traffic violation. A computer check on his driver's license number had revealed that he had gone AWOL more than ten years before when in fact, he had been specially discharged. Smith, *supra* note 37, at p.1400.

<sup>77</sup> "The real danger is the gradual erosion of individual liberties through the automation, integration, and interconnection of many small, separate record-keeping systems, each of which alone may seem innocuous, even benevolent, and wholly justifiable." Privacy Protection Study Comm'n, *The Privacy Act of 1974: An Assessment*, app. 4, at 108 (1977).

<sup>78</sup> One report stated that ninety percent of Americans think the collection of excessive personal information is a problem. Reidenberg, *supra* note 35, at p. 203.

<sup>79</sup> "AT&T Phones Ring Off The Hook For VideoPhone," *USA Today*, May 15, 1992, p. 4B.

<sup>80</sup> *Id.*

add clarity. AT &T says that a video call will cost no more than a normal call, though the units themselves are priced at \$1,500.

Visions of an Orwellian society have caused opponents to raise privacy concerns as a reason to reject the new technology.<sup>81</sup> However, videophones should prove to be less of an issue for privacy advocates than Caller ID. In order to initiate a video call, the caller has to press a button indicating that he wants a video connection. Additionally, the VideoPhone has a shutter that folds over the unit's lens if one of the parties wants to maintain his privacy. These protections should allay any fears of unwanted invasions of privacy.<sup>82</sup> Both the caller and the person receiving the call can choose to deactivate the video function at any time.

#### IV. PRIVACY OF INFORMATION HELD BY UTILITIES AND SOUGHT BY THIRD PARTIES

In the ordinary course of business, utilities gather a variety of personal information about their customers, often inadvertently. Even before initiating service, a utility is likely to compile a large amount of personal data regarding its customers. An application for service may contain such miscellaneous information as the customers' social security numbers, their last place of residence, length of residency, marital status, and employment history. A gas or electric company might ask their customers for a list of major household appliances they own. All of this information is then entered into a computer even before service begins. Once service begins, even more data gets entered into the computer. Telephone companies have lists of the toll numbers which have been called.<sup>83</sup> Cable companies have lists of the pay-per-view services ordered by their customers. All utilities have information about usage regardless of the service the utility provides. As noted earlier, these and other pieces of information can be combined by computerized information networks to provide a fairly complete portfolio of an individual and even to predict his future behavior.<sup>84</sup>

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81 "Why Picturephones are a Bad Call," L.A. Times, Sept. 26, 1991, Part D, p. 1; "Unlike Children, Telephone Users Should Be Heard and Not Seen," Wash. Post, Sept. 27, 1991, p. G3.

82 The effectiveness of these protections, however, depends on whether societal expectations change. For example, once videophones are commonplace, an employer might want to see an employee sick in bed to make sure he is not about to head off to the golf course. As the technology becomes more common, however, social expectations for privacy seem to lessen.

83 "[Karen Hochman] told a caller trying to sell long-distance service from ITT that she doesn't make many long distance calls. 'I'm surprised to hear you say that,' she recalls him saying. 'I see from your phone records that you frequently call Newark, Delaware, and Stamford, Conn.'" "Is Nothing Private?," Bus. Wk. Sept. 4, 1989 p.74.

84 Directories exist that collect and disseminate information regarding personal health, insurance claims, driving records, and credit histories. Reidenberg, *supra* note 35, at p. 202. The databases also offer lists detailing such things as marital status, race, age, income, and available credit as well as lists that speculate as to likelihood to purchase a product or chances of going bankrupt. According to the president of a mail order merchandiser, their computer now "not only remembers [consumers] but knows them, understands them, and ultimately predicts their future behavior . . . [W]e can remember not only our customers names, ages and family status, but even something of their attitudes, values, interests and opinions . . ." *quoted in* Note, *supra* note 17, at p. 1401.

There are not many statutory provisions that could be used to prevent utilities from disclosing this type information.<sup>85</sup> Utilities may freely disclose information to credit agencies.<sup>86</sup> The courts have likewise been unwilling to recognize a privacy interest in most information obtained by public utilities.<sup>87</sup> There is little legal authority that would *require* a utility to refuse requests for information, whatever the source.

Nevertheless, a court reasonably may conclude that once a utility company collects this data, there should be a corresponding duty upon the company not to allow others to have access to any sensitive information or provide information to third parties which could be reasonably foreseen would injure a customer. Indeed, the Supreme Court has stated that “The right to collect and use such [private] data for public purposes is typically accompanied by a concomitant statutory or regulatory duty to avoid unwarranted disclosures.”<sup>88</sup> Legal scholars have also suggested that the courts should recognize a tort preventing the commercial dissemination of personal information.<sup>89</sup> But, as of this time, no such protection has been recognized. Utilities are free to share information among each other, with credit agencies and with law enforcement officials. Though individuals might be able to assert that they have some privacy interest in preventing information from being disclosed to law enforcement officials, such an interest must be weighed against the public interest in

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85 The CCPA does limit the disclosure of information by cable companies, but no similar legislation exists to govern any other type of utility.

86 The FCRA only applies to credit reporting agencies, that is agencies that receive a fee for assembling or evaluating credit information for the purpose of distributing it to third parties. 15 U.S.C. § 1681a(f). The focus of the FCRA is on disclosures of information by such agencies, not the collection of the data. Individuals do have a right to inspect such files under § 1681g, but this right is almost meaningless since the agencies do not have to notify individuals that the files exist, much less tell them the procedures necessary to obtain a copy of them. Reidenberg, *supra* note 35, at p. 211.

87 For example, the court in *Nolan v. United States*, 423 F.2d 1031, 1044 (10th Cir. 1970), *cert. den'd* 400 U.S. 848 (1970), held that records of toll calls are no different than any other records kept in the ordinary course of business and, therefore, may be disclosed. *See also Smith v. Maryland*, 442 U.S. 735 (1979)(no privacy interest in the numbers called); *Montinieri v. Southern New England Telephone Co.*, 398 A.2d 1180 (Conn. 1978)(phone company allowed to disclose address of customer with unlisted number). *But see Minnis v. USDA*, 737 F.2d 784, 787 (9th Cir. 1984)(under the FOIA, protecting the privacy interest the names and addresses of applicants for travel permits from the federal Forest Service); *Heights Community Congress v. Veterans Administration*, 732 F.2d 526 (6th Cir. 1984)(social security numbers exempt from public disclosure under the FOIA); *American Federation of Government Employees v. United States*, 712 F.2d 931, 932 (4th Cir. 1983)(noting that employees have “a strong privacy interest in their home addresses.”) The cases under the FOIA are not generally applicable to public utilities, since the FOIA is limited to cases where a government actor is involved.

88 *Whalen v. Roe*, 429 U.S. 589, 605 (1977).

89 Trubow, *supra* note 3, at pp. 538-49. Trubow suggests that if the commercial dissemination of information cannot be prevented under one of Prosser’s four categories of torts, another tort should be created to prevent such invasions of privacy.

disclosure.<sup>90</sup> No warrant is necessary and there is little an individual can do to prevent such disclosures.

## V. PRIVACY OF PROPERTY INTERESTS

Another area of privacy involves the property of customers and utilities. The “legend” that one’s home is one’s sanctuary may no longer be as valid for the 1990’s as it was in the past. For example, federal environmental legislation, such as the Safe Drinking Act, increasingly seeks to make utilities responsible for circumstances within customers’ premises.<sup>91</sup> Similarly, environmental regulation generally subjects utility property to inspection at will.<sup>92</sup> Thus, there appears to be a trend toward “open access” of private premises.

### A. ACCESS TO CUSTOMER PREMISES

The general rule is that utilities have no right to enter upon customer premises to inspect.<sup>93</sup> This rule is founded on the common law of trespass as well as the constitutional prohibition against unlawful search and seizure.<sup>94</sup>

However, several exceptions to this general prohibition have developed:

#### 1. Search Warrant

Although use of a search warrant commonly is associated with law enforcement authorities, it may be appropriate where a utility has cause to believe that circumstances within customer premises may violate significant rules affecting public health and safety or theft of service; *e.g.*, cross-connection of water lines or homemade by-pass of a gas meter.<sup>95</sup>

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<sup>90</sup> “[An invasion of privacy claim] cannot be considered in the abstract [and] . . . must be weighed against the public interest.” *Nixon v. Administrator of Gen. Serv.*, 433 U.S. 425, 458 (1977).

<sup>91</sup> 42 U.S.C. § 300f, *et seq.*

<sup>92</sup> *See e.g.*, 40 CFR § 123.26(c) (granting state officers the right to enter any site or premises that is subject to regulation under the Clean Water Act).

<sup>93</sup> *See e.g.*, *Muniz v. Masco Corp.*, 744 F.Supp. 266 (W.D. Okla. 1990)(customer, not utility, must inspect connections on customer’s property); *Clare v. Bond County Gas Co.*, 356 Ill. 241, 190 N.E.278, 279 (utility has no right to enter customer’s property).

<sup>94</sup> *See e.g.*, *Clare v. Bond County Gas Co.*, 356 Ill. 241, 190 N.E. 278, 279 (Ill. 1934).

<sup>95</sup> *Brooklyn Union Gas Co. v. MacGregor’s Custom Coach, Inc.*, 471 N.Y.S.2d 470 (N.Y.Civ.Ct. 1983)(gas company had statutory authority to inspect for bypass of gas meter). *Cf. Donovan v. Dewey*, 452 U.S. 594, 599 - 600 (1981)(agency does not have to get warrant when Congress has determined warrantless searches are necessary and regulatory authority is clearly defined).

## 2. *Consent*

A customer may consent to inspection, either overtly or by contract. A utility's tariffs are deemed to be an integral part of the contract of service.<sup>96</sup> If tariffs provide for inspection, then it can be argued that customers have consented.

## 3. *Access to Utility-owned Property*

A water meter or an electric service into a building likely is utility property. Access must be assured to read and service the meters and other utility property within customer premises.

## 4. *Recorded Easements*

A form of consent is the easement or license granted utilities to maintain facilities upon private property. Originally granted by an owner of the property, properly recorded easements and licenses are binding upon subsequent property owners.<sup>97</sup>

## 5. *Recorded Covenants*

Similar to easements, recorded declarations of covenants or restrictions which may relate to utility service "run" with the land and are binding upon subsequent owners.<sup>98</sup>

## 6. *Public Health and Safety*

When utility service involves a product which is inherently dangerous, such as gas or electricity, a right of access may be implied. This particularly may be true where the risk of strict liability is on the utility for a casualty occurrence within the premises.<sup>99</sup>

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<sup>96</sup> See e.g., *Illinois Bell Telephone Co. v. Miner*, 11 Ill. App. 2d 44, 136 N.E.2d 1, 8 (Ill. App. 2 Dist. 1956).

<sup>97</sup> *SMB Investments v. Iowa-Illinois Gas and Electric Co.*, 329 N.W.2d 635, 637 - 38 (Iowa 1983).

<sup>98</sup> *Id.* at 638.

<sup>99</sup> See e.g., *Voelker v. Delmarva Power and Light Co.*, 727 F.Supp. 991 (D.Md. 1989)(court rejected plaintiff's attempt to hold electric company strictly liable for casualty caused by power lines).

## B. RESTRICTIONS ON USE

Congress is currently considering a national plumbing code.<sup>100</sup> Already, generic standards of efficiency have been developed for gas and electric appliances.<sup>101</sup> In a real sense, therefore, customer choice as to conduct within the customer's premises is being restricted.

Another example is mandatory conservation, such as limits on use imposed by meters or regulations to conserve water or energy.<sup>102</sup> Such measures, again, can be viewed as infringements upon privacy, particularly as they are enforced by monitoring and disconnection.

## C. ACCESS TO UTILITY PREMISES

The scales of privacy for business property long have been tipped in governmental favor. For example, a utility seeking to do business in a jurisdiction submits itself to public utility statutes and rules of that jurisdiction, which likely include the right to inspect books, records and plants.<sup>103</sup>

Similarly, in environmental matters, the government has the right to inspect the premises of dischargers by reason of consent through the permit process and to aid in achieving compliance with rules intended to protect public health and safety.<sup>104</sup>

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<sup>100</sup> See The National Plumbing Efficiency Act of 1991, H.R. 843, 102nd Cong. 2nd Sess. (1991); The National Plumbing Products Efficiency Act of 1991, S.1273, 102nd Cong., 2nd Sess. (1991).

<sup>101</sup> See 40 CFR § 430.1, *et seq.* (establishing regulations for the energy conservation program for consumer products).

<sup>102</sup> See *e.g.*, Cal. Water Code §10000, *et seq.* (conservation of state water); Public Utility Regulatory Policies Act, 16 U.S.C. § 2601, *et seq.* (establishing a policy which encourages the conservation of energy supplied by electric utilities).

<sup>103</sup> See *e.g.*, Ill. Rev. Stat. ch. 111 2/3, ¶ 5-105.

<sup>104</sup> *Donovan v. Dewey*, 452 U.S. 594, 599 - 600 (1981)(warrant not necessary when agency inspects commercial property to further specific regulatory scheme); *Trustees for Alaska v. E.P.A.*, 749 F.2d 549, 560 (9th Cir. 1984)(allowing permit condition that gave EPA access to premises and a right to inspect permittee's records.)

## VI. CONCLUSION

As the utility industry is forced to face the inevitable technological advances of the future, it is important that privacy concerns are recognized, confronted and discussed.<sup>105</sup> Courts traditionally have had difficulty in defining the boundaries of privacy, limited by having to adjudicate the interests of the parties before the court<sup>106</sup> and having to deal with the issues only once problems have already arisen.<sup>107</sup> Similarly, legislators generally have focused on industry-specific solutions, only addressing privacy issues once a clear problem has arisen.<sup>108</sup> Given the past limitations of the courts and legislatures, it is imperative that utility commissions address these privacy issues in a coherent manner.

Utility commissions are in a unique position, since they are required to assume both legislative and judicial roles. Because of this, commissions are ideally situated to deal with privacy issues. When acting in their rule-making capacity, commissions are free to receive input from a variety of sources and to examine a broad range of issues. After receiving this input, utility commissions should establish forward-looking privacy principles, similar to those adopted by the New York Public Service Commission.<sup>109</sup> These privacy principles can set forth general guidelines to establish a basis for determining what an individual's reasonable expectations currently are and how new technology could effect those interests. The utility commissions themselves can then apply those guidelines in cases which arise.

Once privacy principles have been developed, it is important that the public remain informed of potential disclosures of information. Companies should be encouraged to inform their customers when information is being disclosed; the purpose for which the information is being collected; the duration for which the information will be held; to whom the information is being disclosed; and how the customers can limit its disclosure. Only by making the public aware of these potential invasions of privacy will courts, legislatures and commissions be able to ascertain the public's expectations are regarding the information.

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105 "Unless we recognize how technology can be used to invade privacy and thereafter constrain any invasion, little privacy will survive the 'computer revolution.'" Turbow, *supra* note 3, at p. 542.

106 Since resolving privacy issues requires balancing the rights and interests of various persons, often including those not represented in a particular case, it is difficult for courts to establish broad boundaries of privacy on a case-by-case basis.

107 With each ruling, the courts change the definition of what is reasonable to expect. For example, prior to the Supreme Court's ruling in *Dow Chemical*, it may have seemed reasonable for a company to expect EPA could not conduct aerial searches; now, such an expectation is clearly unreasonable.

108 An excellent example of this is the Video Privacy Protection Act of 1988, 18 U.S.C. §§ 2710 - 11, commonly referred to as the "Bork Bill." The Act was adopted after members of Congress witnessed how easily a newspaper reporter was able to obtain a list of films rented by Judge Robert Bork. *See also* Reidenberg, *supra* note 75, at p. 219 (criticizing the industry-specific approach taken by legislatures).

109 *See Re Privacy in Telecommunications*, 122 PUR 4th 10 (N.Y.P. S.C. 1991), 125 PUR 4th 481 (N.Y.P.U.S.C. 1991)(adopting Privacy Principles).



## PRIVACY ISSUES IN TELECOMMUNICATIONS

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### I. Introduction

Assume you are a parent who abuses your children and you are in search of counselling. Although you want help, you know that Caller ID is available and you fear that your identity will be divulged if you call a social service agency, and that you may be prosecuted. So you do not make the call. This is typical of the many dilemmas that regulatory commissions around the country have been forced to consider in their deliberations over whether to allow phone companies to offer Caller ID.

The field of public utility regulation is not one that ordinarily evokes the emotion that one often finds in other areas of the law or public policy. More often, the debate comprises arguments regarding the impact that increases in utility rates may have on average ratepayers and on the financial integrity of utilities -- the "us versus them" confrontations that pit utilities against their ratepayers. The impact of new telecommunications technologies on individuals and social groups is an issue that has resulted in new parties appearing before regulatory commissions and legislatures throughout the country, promoting concepts such as the ratepayers' right to be free from privacy intrusions resulting from their use of plain old telephone service.

This paper will address the privacy issues that state PUCs have considered in this new world of Signaling System 7, with particular emphasis on Caller ID service. The paper will also summarize how the commissions and legislatures around the country have resolved the Caller ID dilemma.

### II. The Need For Privacy Protection

Although Caller ID display units typically show only the telephone number of the caller,<sup>1</sup> and possibly the time and date of the call, that information enables parties to obtain other highly personal information that is associated with the caller's number.

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<sup>1</sup>The next step in the evolution of Caller ID service, now beginning to occur, is the display of the calling party's name.

Reverse directory services are available, which provide, within seconds, the name and address associated with a particular telephone number. Other databases are also available that can provide this information for unpublished phone numbers. With Caller ID, every call received by a subscriber provides a phone number from which the subscriber can then obtain a name and address.

Aside from the caller's phone number, name and address, Caller ID also transmits contextual information associated with the fact that a person calls a certain phone number. As the introductory scenario illustrates, people may be deterred from seeking help from social service agencies if they are unable to control who has access to their personal information.

Perhaps the most pernicious aspect of Caller ID is that there is absolutely no control over subsequent use of the information that the technology involuntarily extracts. Unlike information that is given to a doctor, or even to the phone company in order to obtain service, the information extracted by Caller ID is released into the public domain without any limitation on how it may be used.

Caller ID may be offered with a form of blocking. Blocking is used to prevent transmission of the telephone number of the caller, and may be effected on a per line basis, in which the calling number is not transmitted with any call made from a particular telephone number, or on a per call basis, in which the caller dials a short prefix prior to dialing a telephone number to prevent the transmission of his number.

The fundamental question raised by Caller ID is who should decide what personal information is given to others, and under what circumstances. If Caller ID is offered without blocking, the decision is made by the phone company. The substantial privacy interests affected by Caller ID, however, require that the customer should be able to decide whether to divulge personal information through exercise of a blocking option.

### **III. Constitutional Law Protections**

One of the issues that the regulatory commissions have faced in deciding whether to allow Caller ID is whether any Constitutional privacy rights would be violated by the service. For the reasons described below, Caller ID without blocking violates the protections afforded by the First and Fourteenth Amendments to the United States Constitution.

#### **A. State Action**

As a preliminary matter, the Constitution generally does not restrict the rights of private citizens, including corporate "citizens," to act.<sup>2</sup> In certain cases, however, the

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<sup>2</sup>An exception is found in the Thirteenth Amendment, which prohibits slavery within the United States. U.S. Const. Amend. XIII.

actions of a private citizen are so closely conjoined to government action that it becomes impossible to conclude that the actions of the private citizen are different from state action. The distinction between public and private action becomes critical in the area of regulated public utilities, which in most states cannot provide service without the prior approval of the regulatory agency. Courts have generally held that mere regulation by the state is not enough to show state action because regulation alone does not provide a nexus between the action of the state PUC and the action of the utility company.<sup>3</sup> Neither does the fact that utilities provide essential public services establish the requisite state action for a finding of a Constitutional violation.<sup>4</sup> However, the actions of a public utility commission in regulating a carrier *have* been found sufficient to invoke the protections of the constitution where the state's involvement in the matter in question consisted of initiating investigation of the service at issue to determine whether the service should be offered.<sup>5</sup> Thus, it is clearly a stringent standard that must be met before state action is found in the conduct of a privately held utility: the state must in some sense be the moving force in the provision of the service in question.<sup>6</sup> Although some commentators argue that more recent caselaw establishes that state action cannot be established with regard to the activity of a regulated utility,<sup>7</sup> the test for a finding of state action can, in certain circumstances, be satisfied.

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<sup>3</sup>*Jackson v. Metropolitan Edison Co.*, 419 U.S. 345, 351 (1974).

<sup>4</sup>419 U.S. at 350-52.

<sup>5</sup>*Public Util. Com. v. Pollak*, 343 U.S. 451, 462 (1952).

<sup>6</sup>Subsequent decisions of the Supreme Court in this area include *Blum v. Yaretsky*, 457 U.S. 991 (1982) (applying the "close nexus" test of *Jackson*); *Lugar v. Edmondson Oil Co.*, 457 U.S. 922, 939 (1982) (finding state action under a "joint participation" test and citing other tests such as "nexus", "public function" and "state compulsion"); and *Edmonson v. Leesville Concrete Co.*, 111 S.Ct. 2077, 2082-83 (1991) (citing several factors including the extent to which the private actor relies on government assistance and benefits, whether the private actor is performing a traditional government function, and whether the injury is aggravated by the incidents of government authority).

<sup>7</sup>*See generally* Martin H. Redish, *Caller Identification and the Constitution*, pp. 7-11 (April 1990). Professor Redish (who represented Illinois Bell in the Illinois Caller ID case, Docket 90-0466) argues that the *Pollak* decision could not survive the more recent analysis applied to state action. *Id.* at 7. Nevertheless, Professor Redish notes that the Supreme Court precedent in this area creates a distinction between *ex ante* and *ex post* encouragement by the State:

Unless the state's encouragement takes place *before* the private actor itself initiates the activity in question, the encouragement cannot logically be deemed to have contributed to the cause of the activity -- except, of course, in the sense of 'permissive' causation, which, the Court has made clear, is insufficient to constitute state action.

*Id.* at 10.

## B. First Amendment

Assuming that state action has been established, the First Amendment provides six different guarantees of liberty, two of which give rise to what can be viewed as privacy protections: the rights of free speech and peaceful assembly. The government is free to act in violation of these rights only when it can show a compelling interest.

### 1. The Right to Engage in Anonymous Discourse

A corollary to the First Amendment's express guarantee of free speech is the prohibition against compelling the disclosure of a speaker's identity or any other personal information that the speaker would otherwise keep confidential.<sup>8</sup> That prohibition holds a time-honored position in the history of this country, from its founding to the present. In *Talley v. California*,<sup>9</sup> the Supreme Court observed that "[a]nonymous pamphlets, leaflets, brochures and even books have played an important role in the progress of mankind."<sup>10</sup> The *Talley* Court traced the historical roots of this country's commitment to the protection of anonymous speech: the use by the English government of licensure laws to expose the names of colonial dissidents in order to discourage criticism of English authority; the punishment of religious reformers in England for the anonymous circulation of religious materials; and the anonymous authorship of revolutionary literature by "colonial patriots."<sup>11</sup> "Even the Federalist Papers," the Court noted, "written in favor of the adoption of our Constitution, were published under fictitious names."<sup>12</sup> Thus, the *Talley* Court held that a Los Angeles ordinance barring the distribution of all handbills that did not identify authorship was unconstitutional.<sup>13</sup>

It is equally well established that the right to engage in anonymous discourse applies to telephone communications. In *Huntley v. Public Utilities Commission*,<sup>14</sup> the Supreme Court of California struck down a telephone company tariff that required

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<sup>8</sup>Some state constitutions and state court decisions provide even broader protection than the federal Constitution. See, e.g., *Montgomery Ward & Co. v. United Retail Wholesale and Dept. Store Employees, C.I.O.*, 400 Ill. 38, 46, 79 N.E.2d 46 (1948); *South Holland v. Stein*, 373 Ill. 472, 479, 26 N.E.2d 868 (1940).

<sup>9</sup>362 U.S. 60 (1960).

<sup>10</sup>362 U.S. at 64.

<sup>11</sup>362 U.S. at 65.

<sup>12</sup>362 U.S. at 65.

<sup>13</sup>362 U.S. at 65.

<sup>14</sup>69 Cal.2d 67, 442 P.2d 685, 69 Cal. Rptr. 605 (1968).

subscribers who transmitted recorded messages to include the name of the transmitting entity in the message. The court acknowledged that:

The First Amendment right to remain anonymous recognized in *Talley* clearly encompasses all forms of expression . . . [including] a recorded message published over the telephone.<sup>15</sup>

The court concluded that the identification requirement "unquestionably impair[ed] the First Amendment guarantees of freedom of speech."<sup>16</sup> The same rationale was applied in *Figari v. New York Telephone Company*<sup>17</sup> in which a New York court found that a tariff requiring disclosure of the speaker's identity, affiliation and address in recorded telephone messages was a violation of the First Amendment rights of free speech and association.

## 2. The Right to Anonymous Association

Companion to the right of anonymous discourse is a right to engage in anonymous association. In a notorious series of decisions, the United States Supreme Court struck down laws that required disclosure of membership in radical organizations and in civil rights advocacy groups. In *N.A.A.C.P. v. Alabama*,<sup>18</sup> the Court held unconstitutional a state law that required all non-exempt corporations to file a corporate charter with the Secretary of State along with a designation of registered office and an agent for service of process. Because the N.A.A.C.P. had failed to comply with the statute (from which it considered itself exempt), the Alabama Attorney General sought to enjoin the organization from conducting further activities within the state.<sup>19</sup> The Court found that compelled disclosure of affiliation was repugnant to the First Amendment:

It is hardly a novel perception that compelled disclosure of affiliation with groups engaged in advocacy may constitute as effective a restraint on freedom of association as the forms of governmental action in the cases above were thought likely to produce upon the constitutional rights there involved.<sup>20</sup> This

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<sup>15</sup>442 P.2d at 689 (emphasis added).

<sup>16</sup>442 P.2d at 692.

<sup>17</sup>32 A.D.2d 434, 303 N.Y.S.2d 245, 255, 259 (N.Y. App. Div. 1969).

<sup>18</sup>357 U.S. 449 (1958).

<sup>19</sup>357 U.S. at 452-53.

<sup>20</sup>Earlier in *N.A.A.C.P.*, the Court discussed violations of the freedom to associate in the form of laws restricting the activities of organized labor (*American Communications Assoc. v. Douds*, 339 U.S. 382 (1950)) and of lobbyists (*U.S. v. Rumely*, 345 U.S. 41 (1953); *U.S. v. Harris*, 347 U.S. 612 (1954)). 357 U.S. at 461.

Court has recognized the vital relationship between freedom to associate and privacy in one's associations. . . . Compelled disclosure of membership in an organization engaged in advocacy of particular beliefs is of the same order. *Inviolability of privacy in group association may in many circumstances be indispensable to preservation of freedom of association, particularly where a group espouses dissident beliefs.*<sup>21</sup>

Similarly, in *Shelton v. Tucker*,<sup>22</sup> the Supreme Court found unconstitutional an Arkansas law requiring that public school teachers file an affidavit setting forth every organization to which they had belonged or regularly contributed during the preceding five years.<sup>23</sup>

Likewise, the Court held in *Brown v. Socialist Workers '74 Campaign Committee*<sup>24</sup> that it was unconstitutional for the State of Ohio to compel disclosure of the names of each contributor and each recipient of campaign funds, as applied to a minority political party. This followed an earlier decision, in *Buckley v. Valeo*,<sup>25</sup> finding unconstitutional a requirement that minor political parties file campaign finance disclosures pursuant to federal election laws.

In *Roberts v. United States Jaycees*,<sup>26</sup> the Court recognized limitations that could be placed on the freedom to associate when the association at issue took the form of a public or quasi-public function. The Court first noted the extent of the privacy right in the freedom to associate:

The [Supreme] Court has long recognized that, because the Bill of Rights is designed to secure individual liberty, it must afford the formation and preservation of certain kinds of highly

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<sup>21</sup>357 U.S. at 462 (emphasis and footnote added). *Accord, Bates v. Little Rock*, 361 U.S. 516, 523 (1960); *Gibson v. Florida Legislative Investigation Committee*, 372 U.S. 539, 543-46 (1963).

<sup>22</sup>364 U.S. 479, 486-87 (1960).

<sup>23</sup>The *Shelton* Court found this breach of individual liberty particularly pernicious because the disclosure was made to the teacher's employer, *i.e.*, the state. 364 U.S. at 486-87. In the Court's view, the disclosure law resulted in an "inhibition of freedom of thought." 364 U.S. at 487. "Scholarship cannot flourish in an atmosphere of suspicion and distrust. Teachers and students must always remain free to inquire, to study and to evaluate . . . ." 364 U.S. at 487 (*quoting Sweezy v. New Hampshire*, 354 U.S. 234, 250 (1957)).

<sup>24</sup>459 U.S. 87 (1982).

<sup>25</sup>424 U.S. 1 (1976).

<sup>26</sup>468 U.S. 609 (1984).

personal relationships a substantial measure of sanctuary from unjustified interference by the State.<sup>27</sup>

The Court identified those relationships in which it would recognize a valid privacy interest with which it could not interfere absent compelling justification from the state. Those relationships

are distinguished by such attributes as relative smallness, a high degree of selectivity in decisions to begin and maintain the affiliation, and seclusion from others in critical aspects of the relationship. *As a general matter, only relationships with these sorts of qualities are likely to reflect the considerations that have led to an understanding of freedom of association as an intrinsic element of personal liberty.*<sup>28</sup>

...

According protection to collective effort on behalf of shared goals is especially important in preserving political and cultural diversity and in shielding dissident expression from suppression by the majority.<sup>29</sup>

Applying that test to the United States Jaycees, a civic organization whose exclusion of women was challenged in *Roberts*, the Court found that the Jaycees were not a sufficiently private organization to benefit from the Constitutional protections.<sup>30</sup> The protected private relationships were further delineated in *Board of Directors of Rotary International v. Rotary Club of Duarte*.<sup>31</sup> "We have emphasized that the First Amendment protects those relationships, including family relationships, that presuppose 'deep attachments and commitments to the necessarily few other individuals with whom one shares not only a special community of thoughts, experiences, and beliefs but also distinctively personal aspects of one's life.'<sup>32</sup> The *Rotary* Court found that the exclusion of women from Rotary Clubs' civic organizations was not constitutionally protected.

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<sup>27</sup>468 U.S. at 618.

<sup>28</sup>468 U.S. at 620 (emphasis added).

<sup>29</sup>468 U.S. at 622.

<sup>30</sup>The Court also recognized that a corollary to the freedom to associate is the freedom not to associate. *Id.* at 623 (citing *Abood v. Detroit Bd. of Educ.*, 431 U.S. 209, 234-35 (1977)).

<sup>31</sup>481 U.S. 537 (1987).

<sup>32</sup>*Id.* at 545 (citing *Roberts*, 468 U.S. at 619-20).

### 3. Freedom from Compelled Speech

An aspect of the First Amendment's guarantee of free speech is the right to be free from government compelled speech. In the seminal case of *West Virginia State Board of Education v. Barnette*,<sup>33</sup> the Supreme Court considered whether the State of West Virginia could compel all public school students to participate in a daily salute to the U.S. flag; a refusal to salute would be an act of "insubordination, and shall be dealt with accordingly."<sup>34</sup> As implemented, the state law required that students raise a "stiff-arm" salute, with their right hands raised, palms up, and that they recite the conventional pledge of allegiance; refusal to participate would result in expulsion.<sup>35</sup> When students of the Jehovah's Witnesses faith objected to these requirements on the basis that the salute and pledge would violate a tenet of their faith, they were expelled.<sup>36</sup> The Court ruled that the state could not compel the flag salute and pledge.

[T]he compulsory flag salute and pledge requires an affirmation of belief and an attitude of mind. . . . It is now commonplace that censorship or suppression of expression of opinion is tolerated by our Constitution only when the expression presents a clear and present danger of action of a kind the State is empowered to prevent and punish. It would seem that involuntary affirmation could be commanded only on even more immediate and urgent grounds than silence.<sup>37</sup>

Accordingly, the West Virginia statute was held unconstitutional.

If there is any fixed star in our constitutional constellation, it is that no official, high or petty, can prescribe what shall be orthodox in politics, nationalism, religion, or other matters of opinion or force citizens to confess by word or act their faith therein. If there are any circumstances which permit an exception, they do not now occur to us.<sup>38</sup>

The *Barnette* holding was reaffirmed in *Texas v. Johnson*, in which a law prohibiting the "desecration" of a venerated object," such as a state or national flag, was held

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<sup>33</sup>319 U.S. 624 (1943).

<sup>34</sup>319 U.S. at 626 (footnote omitted).

<sup>35</sup>319 U.S. at 628-29.

<sup>36</sup>319 U.S. at 629.

<sup>37</sup>319 U.S. at 633.

<sup>38</sup>319 U.S. at 642.



to be an unconstitutional abridgement of the First Amendment.<sup>39</sup> "[N]othing in our precedents suggests that a State may foster its own view of the flag by prohibiting expressive conduct relating to it."<sup>40</sup>

A similar view controlled in *Wooley v. Maynard*, in which residents of New Hampshire objected to the placement on required automobile license plates of the state motto "Live Free or Die."<sup>41</sup> Members of the Jehovah's Witnesses faith found the display of the motto repugnant to their faith and covered the motto on their license plates.<sup>42</sup> The Court found that the state could not compel residents to display the motto:

We begin with the proposition that the right of freedom of thought protected by the First Amendment against state action includes both the right to speak freely and the right to refrain from speaking. . . . A system which secures the right to proselytize religious, political, and ideological causes must also guarantee the right to decline to foster such concepts. The right to speak and the right to refrain from speaking are complementary components of the broader concept of "individual freedom of mind."<sup>43</sup>

The Supreme Court has also ruled that the First Amendment precludes the compelled disclosure of *any* information that a speaker would not otherwise divulge. In *Riley v. National Federation of Blind, Inc.*,<sup>44</sup> the Court found unconstitutional a state statute that required professional fundraisers to disclose to potential donors the amount of gross receipts actually turned over to the charities they represent. The Court reaffirmed the general principle that "the right to speak and the right to refrain from speaking" are complementary components of the First Amendment freedom of speech.<sup>45</sup> "Mandating

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<sup>39</sup>491 U.S. 397, 109 S.Ct. 2533, 2537 (1989).

<sup>40</sup>109 S.Ct. at 2545.

<sup>41</sup>430 U.S. 705 (1977).

<sup>42</sup>430 U.S. at 708.

<sup>43</sup>430 U.S. at 714 (*quoting Barnette*, 319 U.S. at 637).

<sup>44</sup>487 U.S. 781 (1988).

<sup>45</sup>*Id.* at 797 (*quoting Wooley v. Maynard*, 430 U.S. 705, 714 (1977) *quoting West Virginia State Bd. Of Educ. v. Barnette*, 319 U.S. 624, 637 (1943)); *also citing Pacific Gas & Elec. Co. v. Public Util. Com.*, 475 U.S. 1 (1986); *Harper & Row Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539 (1985); and *Abood v. Detroit Bd. of Educ.*, 431 U.S. 209 (1977); *Miami Herald Publishing Co. v. Tornillo*, 418 U.S. 241 (1974). *See also Central Illinois Light Co. v. Citizens Util. Bd.*, 827 F.2d 1169 (7th Cir. 1987) (Illinois statute compelling utilities to place in

speech that a speaker would not otherwise make necessarily alters the content of speech," such that the compelled disclosure of information amounts to a "content-based regulation of speech" that must be subjected to the strict constitutional "test for fully protected expression".<sup>46</sup>

### C. A Consistent Theory of First Amendment Privacy

The makers of our Constitution undertook to secure conditions favorable to the pursuit of happiness. They recognized the significance of man's spiritual nature, of his feelings and of his intellect. They knew that only a part of the pain, pleasure and satisfactions of life are to be found in material things. They sought to protect Americans in their beliefs, their thoughts, their emotions and their sensations. They conferred, as against the Government, the right to be let alone -- the most comprehensive of rights and the most valued by civilized man.<sup>47</sup>

If Justice Brandeis is right, then our Constitution protects a right of privacy -- a right to be left alone -- with which the Government cannot interfere. The foregoing are examples of how the First Amendment protects that privacy right.

The discrete rights defined above, however, are merely facets of a broader guarantee of privacy that the First Amendment recognizes: the right to be free from government intrusion into private facts about a person, which intrusion may impair rights expressly guaranteed to that person by the First Amendment. The Supreme Court's interpretation bars conduct induced by the government, such as compelled speech, legally coerced disclosure of affiliation, and official dogma, because such conduct may chill a person's expressly guaranteed rights of free speech and assembly.<sup>48</sup>

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monthly bills messages from consumer advocacy groups impermissibly burdened utilities' First Amendment right to be free from compelled speech and association).

<sup>46</sup>487 U.S. at 795.

<sup>47</sup>*Olmstead v. U.S.*, 277 U.S. 438, 478 (1928) (Brandeis, J., dissenting).

<sup>48</sup>*See, however, Rust v. Sullivan*, 111 S.Ct. 1759 (1991). In *Rust*, the Court analyzed a restriction imposed upon recipients of federal funding directed to family planning clinics. By regulation, those clinics were restricted from engaging in abortion counseling, referral, and activities advocating abortion as a method of family planning. The Court held that the government may, in providing funding for certain activities, impose restrictions upon how that funding may be used, including restrictions upon free speech. *Id.* at 1775. The government may not, however, impose its restrictions so broadly as to control the freedom of fund recipients to speak outside the scope of the government funded project. *Id.* at 1776.

These privacy rights have profound implications when applied to telecommunications technology. In the case of Caller ID, First Amendment privacy rights may be violated in several different ways. Most importantly, Caller ID may be a form of compelled speech because it requires disclosure of a caller's phone number, which could easily lead to the disclosure of the caller's identity. The impact of this forced disclosure is measureless. Disclosure of a caller's identity can chill that caller from speaking, particularly if his views are unpopular. Moreover, the disclosure of personal facts, such as financial and credit histories, that could result from disclosure of a caller's phone number may reveal information about that caller's affiliations, which could cause that caller to refrain from associating with the groups or persons with which he would otherwise associate, or merely to cease certain communications. Thus, these compelled disclosures, without a means to prevent them (blocking), run afoul of the First Amendment as construed by the Supreme Court.

#### IV. Fourteenth Amendment

The Fourteenth Amendment protects personal information when individuals have a "legitimate expectation of privacy" in the information.<sup>49</sup> Those expectations may be created by the individual's past experiences, including the "pattern" of how the information has been controlled.<sup>50</sup> In *Katz v. United States*,<sup>51</sup> the Supreme Court held that individuals have a protectible interest in the words they speak in public phone booths, an expectation that reflects "the vital role that the public telephone has come to play in private communications."<sup>52</sup>

Societal and individual patterns are reviewed in order to determine whether a privacy right is at issue. In *Whalen v. Roe*,<sup>53</sup> the privacy interest at issue concerned state collection and maintenance of personal medical information; in *Nixon v. Adm'r of Gen. Serv.*, the privacy interest involved the review and release by government archivists of former President Nixon's personal papers. In each case, the Court found a legitimate privacy interest. Once it found that interest, the Court reviewed the statutory or administrative scheme at issue to determine whether the interests at stake were sufficiently protected from public disclosure. In *Nixon*, the Court found the privacy interest adequately protected by regulations that prohibited undue dissemination, and that required that private papers be

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<sup>49</sup>*Nixon v. Adm'r of Gen. Serv.*, 433 U.S. 425, 458 (1977) (citing *Katz v. United States*, 389 U.S. 347, 351-53 (1967)).

<sup>50</sup>*Nixon*, 433 U.S. at 458; *Katz*, 389 U.S. at 351-53.

<sup>51</sup>389 U.S. 347 (1967). Although *Katz* discussed the expectation of privacy in a Fourth Amendment search and seizure context, it is relied on in *Nixon*, a Fourteenth Amendment privacy case, for its privacy analysis. See *Nixon*, 433 U.S. at 457.

<sup>52</sup>389 U.S. at 352.

<sup>53</sup>429 U.S. 589 (1977).

returned to the former president.<sup>54</sup> In *Whalen*, the Court similarly emphasized the existence of a regulation that would prevent the personal information from becoming public.<sup>55</sup>

There can be no doubt that individuals have come to view their telephone numbers and their calling habits as private matters, at least as much as they have similarly viewed as private their medical and banking records, personal papers, and telephone conversations. This expectation of privacy is the result of decades of telecommunications practices in which caller confidentiality has been a part of the system. It also derives from the availability of unlisted and unpublished telephone number service. Caller ID without blocking destroys this privacy interest by placing the control over such personal information in the hands of the called party, who is under no constraint to refrain from disseminating it. Callers in a no-block Caller ID environment would no longer have the ability to choose the persons to whom they give their telephone numbers, since their numbers would be available to every group, company and person that they call (so long as they have subscribed to Caller ID).

Although the United States Supreme Court held in *Smith v. Maryland*<sup>56</sup> that a person has no privacy interest in telephone numbers *called* from his phone, telephone users do have an expectation of privacy in *their* telephone numbers and habits. The basis for the *Smith* decision was that those telephone numbers were transmitted to the telephone company.<sup>57</sup> *Smith* did not address the question of whether one has a right to privacy in his own telephone number and associated personal information with respect to *every party called*.<sup>58</sup> People's expectations of privacy are dependent upon their social and legal background. The legal background, however, which established the relevant privacy expectations has changed since *Smith* was decided. *Smith* involved the warrantless use of

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<sup>54</sup>433 U.S. at 458-59.

<sup>55</sup>429 U.S. at 600-02.

<sup>56</sup>442 U.S. 735 (1979).

<sup>57</sup>As the Court noted in *Smith*, "[t]elephone users, in sum, typically know that they must convey numerical information to the phone company; that the phone company has facilities for recording this information; and that the phone company does in fact record this information for a variety of legitimate business purposes. Although subjective expectations cannot be scientifically gauged, it is too much to believe that telephone subscribers, under these circumstances, harbor any general expectation that the numbers they dial will remain secret." *Smith*, 442 U.S. at 743.

<sup>58</sup>Cf. *People v. Chapman*, 36 Cal.3d 98, 108-09, 679 P.2d 62, 67-68, 201 Cal. Rptr. 628, 633-34 (1984) (expectation that an unlisted number will remain private); *State v. Butterworth*, 48 Wash. App. 152, 737 P.2d 1297, 1299-1300 (Wash. App. 1987).

a device to record telephone activity. In 1979, when *Smith* was decided, no federal law prohibited that practice.<sup>59</sup>

Moreover, the United States Court of Appeals for the Seventh Circuit has recognized that *only* control over, and confidentiality in, personal information ensures privacy in personal matters.

Privacy . . . is control over knowledge about oneself. But it is not simply control over the quantity of information abroad; there are modulations in the quality of the knowledge as well. We may not mind that a person knows a general fact about us, and yet feel our privacy invaded if he knows the details. For instance, a casual acquaintance may comfortably know that I am sick, but it would violate my privacy if he knew the nature of the illness. Or a good friend may know what particular illness I am suffering from, but it would violate my privacy if he were actually to witness my suffering from some symptom which he must know is associated with the illness. (*quoting* Fried, *Privacy*, 77 Yale L.J. 475, 483 (1968)).<sup>60</sup>

Clearly, individuals have a protectible privacy interest in controlling the dissemination of their telephone numbers and the information that can be retrieved using those numbers. That interest would undeniably be violated by a system requiring the disclosure of the caller's telephone number with every call -- Caller ID without blocking.

An invasion of privacy, such as that present if Caller ID is made available without any blocking option, may be justified only by a compelling state interest, and even then the invasion must be accomplished in the least intrusive manner.<sup>61</sup>

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<sup>59</sup>See *United States v. New York Tel. Co.*, 434 U.S. 159 (1977) (devices that record numbers dialed not prohibited by federal wiretap law). Since that date the Electronic Communications Privacy Act was enacted. Pub. L. No. 99-508, 100 Stat. 1848 (1986). Because that law alters and enhances the privacy expectations articulated in *Smith*, *Smith* cannot be deemed a definitive statement of the privacy expectations at issue with regard to Caller ID without blocking.

<sup>60</sup>*Marzen v. Dept. of Health and Human Serv.*, 825 F.2d 1148, 1152 (7th Cir. 1987) (*quoting United States v. Westinghouse Elec. Corp.*, 638 F.2d 570, 577, n.5 (3d Cir. 1980)).

<sup>61</sup>*Whalen*, 429 U.S. at 606 (Brennan, J. concurring) (public dissemination of confidential information justified only by compelling state interest); *Mangels v. Pena*, 789 F.2d 836, 839 (10th Cir. 1986); *Thorne v. City of El Segundo*, 726 F.2d 459, 469 (9th Cir. 1983) (the more fundamental the threatened privacy right, the more weight the interest of the state must have). See also *Nixon v. Adm'r of Gen. Serv.*, 433 U.S. at 458 (claim can be defeated if government shows a sufficiently strong interest justifying intrusion).

Just as the Supreme Court has found that people should not be forced to disclose personal medical information without adequate controls, and that people have come to expect that conversations in phone booths will be private, subscribers to telephone service have a reasonable and legitimate expectation in controlling who has access to their telephone numbers and calling habits. Confidentiality and control of this information has been the expectation of the calling party for at least the last several decades. Clearly, individuals have a protectible privacy interest in controlling the dissemination of their telephone numbers and the information that can be retrieved through use of those numbers. This interest is violated by a system that requires the provision of a telephone number with every call.

#### **V. Applications Beyond Caller ID**

Caller ID is not the only telecommunications service that presents privacy problems. Other telecommunications services present similar problems. For example, automatic number identification ("ANI") service associated with "800 service" also permits the subscriber to see the telephone number of the caller. That number may be transmitted into a computer database, so that the person answering the call is able to see the caller's name, address, and past buying history with the subscriber's company. While this disclosure of information in many respects raises the same concerns as does Caller ID, there are differences: in the case of ANI, the caller is using the called party's line, rather than his own, and it is the called party that is paying for the call. Moreover, if the caller is a customer calling to place an order for merchandise, or to check on the status of an already placed order, the private information at stake has already been or will be voluntarily disclosed in the course of the transaction. In these circumstances, the calling party has a diminished expectation of privacy than when he calls on his own line and his own dime.

As important, the caller to a commercial enterprise is almost never the type of individual whose privacy rights are most protected under the Constitution. Thus, it is unlikely that canvassers for dissident political groups are calling catalog vendors to express their views; even if they are (as in the case of a telephone protest against business practices), a compelling argument can be made that the ANI subscriber, who is paying for those calls, is entitled to receive information about the person whose calls he is paying for. These differences between Caller ID and ANI may justify disparate treatment.

#### **VI. Experience Around the Country**

The authors surveyed the fifty states and the District of Columbia to find out whether and how they have acted on implementation of Caller ID. We found that in 14 of the 51 jurisdictions, the issue either has not yet been presented to the state PUC or the legislature, a decision has not yet been reached or the PUC does not regulate the service.

The overwhelming majority of jurisdictions that have addressed the issue require some form of blocking. Thirteen state PUCs or legislatures have determined that both per call and per line blocking should be offered if Caller ID is offered. Nine states require per call and limited per line blocking, usually for law enforcement and domestic

violence groups. Only seven states allow Caller ID to be offered with per call blocking. Eight states allow no blocking at all, although that includes the Pennsylvania decision approving no-block Caller ID that was overturned on appeal,<sup>62</sup> and two states in which the service is actually being offered with some form of blocking.<sup>63</sup> The Appendix to this paper summarizes the results of the survey.

Legislation pending before Congress would modify the Electronic Communications Privacy Act (the "ECPA")<sup>64</sup> to require blocking if Caller ID is offered. The proposed legislation -- the Telephone Privacy Act of 1991<sup>65</sup> -- would require free per call blocking or, if one of two conditions is met, per line blocking with or without charge. Those conditions are that either: (1) per line blocking was authorized by statute or regulation prior to the date of the legislation; or (2) per line blocking is offered for free at the request of the originator of the communication who happens to be a victim of domestic violence, a victim's service program, or a battered women's shelter or other organization providing safe haven for victims of domestic violence.<sup>66</sup> The Telephone Privacy Act of 1991 would exempt from the blocking requirement certain ANI services used for purposes such as billing and collection or completing a transaction initiated by the call.

## VII. Conclusion

In conclusion, government must recognize, and is recognizing, that it has a duty to act to safeguard the privacy of individuals in telecommunications transactions, which is constitutionally protected by the First and Fourteenth Amendments to the U.S. Constitution. New telecommunication technology presents many opportunities for societal advancement and improvement, but the risks it brings must also be recognized and guarded against. Many states, as well as possibly the federal government, are doing so by maintaining the privacy rights of individuals and ensuring that Caller ID is offered with some form of blocking.

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<sup>62</sup>*Barasch v. Bell Telephone Co.*, 605 A.2d 1198 (Pa. 1992).

<sup>63</sup>Indiana and Mississippi.

<sup>64</sup>18 U.S.C. § 3121 *et seq.*

<sup>65</sup>S. 652, 102d Cong., 1st. Sess. (1991).

<sup>66</sup>Inasmuch as this second condition discriminates in favor of certain types of groups and in favor of group members over individuals, it, too, may violate the First Amendment's free association guarantee.

Summary of State Actions Regarding Caller ID

State	Per Call	Per Line	Limited Per Line	Default Blocking	No Blocking	Not Yet Considered
Alabama	.		.			
Alaska						.
Arizona	.	.				
Arkansas						.
California	.	.		.		
Colorado	.	.				
Connecticut	.		.			
Delaware	.		.			
DC	.					
Florida	.		.			
Georgia	.		.			
Hawaii						.
Idaho	.					
Illinois	.					
Indiana <sup>1</sup>					.	
Iowa	.		.			
Kansas						.
Kentucky	.		.			
Louisiana					.	
Maine	.		.			
Maryland	.					
Massachusetts	.	.				
Michigan	.					
Minnesota						.
Mississippi <sup>2</sup>					.	

<sup>1</sup>Although not required, per call blocking has been offered.

<sup>2</sup>Limited blocking has actually been offered.



State	Per Call	Per Line	Limited Per Line	Default Blocking	No Blocking	Not Yet Considered
Missouri						.
Montana						.
Nebraska <sup>3</sup>						.
Nevada	.	.				
New Hampshire						.
New Jersey					.	
New Mexico						.
New York	.	.				
North Carolina	.	.				
North Dakota	.					
Ohio <sup>4</sup>	.	.				
Oklahoma	.					
Oregon	.	.				
Pennsylvania					.	
Rhode Island						.
South Carolina	.	.				
South Dakota						.
Tennessee					.	
Texas	.	.				
Utah						.
Vermont	.	.				
Virginia					.	
Washington	.	.				
West Virginia					.	
Wisconsin	.		.			
Wyoming						.

<sup>3</sup>Caller ID service is not regulated, but per call and limited per line blocking have been offered.

<sup>4</sup>All blocking options are accompanied by free per call unblocking capability.



## PRIVACY AND TECHNOLOGY: A WORKABLE BALANCE

By

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Technological advances often affect privacy. At times, technological change has outpaced the legal parameters of privacy or has, otherwise, presented a dilemma for policy makers. Ironically, the very technology that threatens privacy rights can engender related technology to protect or enhance privacy. The current state of the evolution of Caller ID<sup>2</sup> technology is an example of that dynamic.

Caller ID has created controversy involving the use, ownership and control of telephone numbers. With the announcement last November of proposed FCC rules on Caller ID, this controversy reached federal proportions. Caller ID represents an ongoing attempt to achieve a balance between competing expectations of privacy - between telephone callers and those who are called. This paper will explore that balance by considering a fundamental question: Does a caller have a legal right to prevent his or her identity from being transmitted to the call recipient by transmitting the caller's phone number to the recipient?

### Introduction

Although people are social beings, individuals require and value privacy in their lives. Society's view of what is considered private has changed considerably over time. Technology has reduced distances between continents and the time needed to send information. Facsimile machines and cellular phones now enable almost continuous accessibility to anyone in the world. As access is increased, many people feel pressured by the seemingly constant information flow, as well as disturbed by the proliferation of detailed marketing databases. Thus, while people seek greater accessibility through improved communications, they also seek to restrict access to their identities. One might say that people desire some type of anonymous accessibility.

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<sup>1</sup>The views and opinions of the authors do not state or reflect the views, opinions, or policies of the Alaska Public Utilities Commission, the NRRI, NARUC, or other NARUC member commissions.

<sup>2</sup>Caller ID is a system that provides the caller's telephone number to the receiving telephone. A translator device can then display this number to the call recipient prior to answering the phone. Some systems include a database that will also give the name of the caller.

Historically, the telephone has been strongly associated with privacy by its users. To a large extent, perhaps, telecommunications technology is representative of the general concern about the (mis) uses of individual personal information by businesses and the government.

Clearly people have a sense of privacy about their affairs. The right to privacy, however, is bounded by the law of privacy. Thus, an examination of the basic tenets of privacy law is in order. As part of that analysis, we will initially consider the idea of property rights associated with a phone number. Further, we will examine the constitutional aspects of privacy with respect to a caller's expectation of privacy regarding his phone number. This is the pivotal issue in Caller ID cases: does the person making a call have an absolute right to anonymity so as to prevent involuntary transmission of his phone number?

Another issue that may emerge is the possibility of federal preemption on Caller ID. The FCC has issued proposed Caller ID regulations that will seek to create some uniformity among the states. At this point, the proposed regulations conflict with some state decisions with respect to acceptable blocking methods.

When the Abstract for this paper was prepared, we intended to explore the diversity of opinion on these issues. At that point, only a handful of state public utility commissions had addressed them. Today, 23 commissions have issued orders approving Caller ID. Essentially, these commissions have uniformly addressed privacy concerns through a technological means: call blocking. In most of the cases decided to date, commissions found that the best way to balance the need for the service provided by Caller ID and the need for customer privacy is to simply provide the customers with the ability to block calls from being identified. This can be accomplished by either per-call blocking or by per-line blocking<sup>3</sup> and the respective requirements of the state commissions differ in this regard. Four commissions have approved caller ID without mandating blocking.<sup>4</sup>

In view of the number of decisions that have been forthcoming, this paper will consider whether an emerging *de facto* Caller ID policy is discernible from the various state commission decisions.

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<sup>3</sup>Per-call blocking is a system that permits the caller to enter a code that prevents her number from being transmitted to a person with a Caller-ID device for that call. Per-line blocking automatically prevents the caller's number from being transmitted on every call made.

<sup>4</sup>Status of Caller ID Service and Privacy 1992 Telecom Publishing Group, Briefing Report, p. 2.

### Property Rights of a Phone Number

One preliminary question that should be examined is whether a telephone subscriber has a proprietary interest in his phone number. If that were the case, the subscriber would have some legal rights regarding whether his phone number can be disseminated to others without consent. Phone numbers are typically issued by the phone company upon subscription and are retained by the company after the customer ceases service.

The question of whether a phone company has a copyrightable interest in the white page listing of phone numbers was addressed in Feist Publications, Inc., v. Rural Telephone Service Co.<sup>5</sup> Feist Publications sought to publish a regional phone book that contained subscriber telephone numbers of several telephone companies. Rural Telephone refused to give Feist the numbers of its subscribers. Feist used Rural's numbers anyway by copying them and Rural sued Feist for copyright infringement. The United States Supreme Court held that the mere alphabetical listing of names, addresses and phone numbers in a telephone white pages directory is a non-copyrightable compilation of facts. In so holding, the court characterized the alphabetical compilation, as well as the information contained in the white pages (including telephone numbers) as ordinary:

As mentioned at the outset, Rural's white pages are entirely typical. Persons desiring telephone service in Rural's service area fill out an application and Rural issues them a telephone number. In preparing its white pages, Rural simply takes the data provided by its subscribers and lists it alphabetically by surname. The end product is a garden-variety white pages directory, devoid of even the slightest trace of creativity.

Rural's selection of listings could not be more obvious: it publishes *the most basic information -- name, town, and telephone number* -- about each person who applies to it for telephone service. (Emphasis added; citations omitted.)<sup>6</sup>

In Feist, the U.S. Supreme Court rejected a telephone company's claim that compilation of telephone white page information into a directory was entitled to protection under copyright law. The Court did so on the basis that such a compilation was not sufficiently original or creative. As such, the court rejected an alleged proprietary interest by a third party in, among other things, subscriber telephone numbers. Although Caller ID clearly has nothing to do with copyright law, the Feist court's characterization of telephone subscriber numbers as "the most basic

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<sup>5</sup> \_\_\_ U.S. \_\_\_, 111 S.Ct. 1282. (1991)

<sup>6</sup>Id. at 1296.

information" certainly does not suggest any particular significance would necessarily be given to a telephone number in and of itself.

In the case of Caller ID, the question is whether the telephone subscriber, as opposed to the telephone company, has any proprietary interest in her telephone number which would entitle the subscriber to control over involuntary display of that number to the person called. Arguably, there is a closer nexus between a telephone subscriber and her telephone number than between a telephone company and the numbers it issues to its subscribers.<sup>7</sup> Telephone subscribers already have the option to elect to have their number treated in a more private manner as an unpublished number. It may be unlikely that a subscriber has a property right in a telephone number. However, it is also unclear whether the Feist copyright decision is necessarily relevant to whether there exists a proprietary relationship between a telephone subscriber and his telephone number.

### The Right of Privacy and Caller ID

Until recently, existing telephone technology could not transmit any information as to the phone number or identity of a caller. Thus a caller has enjoyed the ability to remain anonymous while making a call. For the vast majority of calls, this anonymity is unimportant. People call others to pass information and, usually, they want the receivers to know who they are. This is true when calling friends and relatives or when calling to transact business, schedule appointments, and to gather information. However, the 1980's saw a great increase in phone calls from total strangers, largely because of the growth in telemarketing technology and the possibility that businesses would collect, process and resell calling number information without the caller's consent.<sup>8</sup>

For subscribers that consider cold sales calls over the telephone to be intrusive, Caller ID can alert them to the telephone number of the caller before they answer, enabling them to refuse to take the call. Similarly, Caller ID (without blocking) can effectively curtail the practice of obscene or harassing telephone calls. On the other hand, use of Caller ID (without blocking) can jeopardize police investigations and threaten the safety of victims of domestic abuse who seek to maintain the anonymity of their place of refuge.

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<sup>7</sup>See Kester v State, 291 S.E.2d 497,504 (Ga 1982) (no expectation of privacy in telephone toll or billing records because records belong to telephone company, not defendant).

<sup>8</sup>Status of Caller ID Service and Privacy 1992 Telecom Publishing Group, Briefing Report, p. 2.

These competing concerns inform the perceptions of what "rights" one possesses when using a telephone. They are bounded, however, by the law of privacy. We must then ask: does a caller have a legal right to prevent his or her identity from being transmitted to the call recipient by the Caller ID display of the caller's phone number to the recipient?

Common law privacy rights have evolved under both federal and state law.<sup>9</sup> The U.S. Constitution does not explicitly provide for the right of privacy. However, the Supreme Court has recognized that a right of personal privacy or a guarantee of certain areas or zones of privacy, does exist under the Constitution. This federal constitutional right to privacy emanates from the penumbra of certain guarantees provided by specific amendments to the Constitution.<sup>10</sup> This source of the right to privacy has not been explicitly defined, other than on a case by case basis. The Supreme Court has noted, however, that "personal rights found in this guarantee of personal privacy must be limited to those which are fundamental or implicit in the concept of ordered liberty."<sup>11</sup> Where competing privacy interests are at issue, the legitimacy of those interests must be weighed in the balance.<sup>12</sup>

To date, the U.S. Supreme Court has not had occasion to review the privacy issues specifically related to Caller ID. However, in Smith v. Maryland<sup>13</sup> the Court addressed the privacy expectations of a caller relating to disclosure of the caller's phone number in the context of constitutional search and seizure law.<sup>14</sup> Smith involved a robbery where the victim later began receiving threatening and obscene calls from a man identifying himself as the robber. The telephone company, at police request, installed

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<sup>9</sup>Federal and state statutory bases for privacy protection are beyond the scope of this paper and, therefore, are not discussed.

<sup>10</sup>See Roe v. Wade, 410 U.S. 113 (1973).

<sup>11</sup>Paul v. Davis, 424 U.S. 693, 713 (1976).

<sup>12</sup>See Whalen v. Roe, 429 U.S. 589 (1977)

<sup>13</sup>442 U.S. 735 (1979)

<sup>14</sup>The Fourth Amendment to the U.S. Constitution provides that "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

a pen register<sup>15</sup> at its central offices to record the numbers dialed from the telephone at the defendant's home. Using the pen register, the police were able to obtain sufficient evidence linking the defendant to the robbery. The defendant was tried and convicted.

On appeal, the defendant argued that the use of the pen register constituted an illegal search under the Fourth and Fourteenth Amendments. The court rejected the defendant's privacy arguments in holding that the defendant caller had no reasonable expectation of privacy in relation to the phone number of the victim he had called.

In examining the privacy questions, the Court cited a two-part test: "first is whether the individual, by his conduct, has exhibited an actual (subjective) expectation of privacy . . . whether . . . the individual has shown that he seeks to preserve [something] as private . . . . The second question is whether the individual's subjective expectation of privacy is one that society is prepared to recognize as 'reasonable' . . . whether . . . the individual's expectation, viewed objectively, is justifiable under the circumstances."<sup>16</sup>

The Court then reviewed the use of pen registers in terms of a Fourth Amendment search and found that

"[g]iven a pen register's limited capabilities, therefore, [defendant's] argument that its installation and use constituted a 'search' necessarily rests upon a claim that he had a 'legitimate expectation of privacy' regarding the numbers he dialed on his phone. *First, we doubt that people in general entertain any actual expectation of privacy in the numbers they dial. All telephone users realize that they must 'convey' phone numbers to the telephone company, since it is through telephone company switching equipment that their calls are completed. All subscribers realize, moreover, that the phone company has facilities for making permanent records of the numbers they dial, for they see a list of their long distance (toll) calls on their monthly bills.*" (Emphasis added.)<sup>17</sup>

The court went on to add that " it is too much to believe telephone subscribers, under these circumstances, harbor any general

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<sup>15</sup>A pen register is a mechanical device that monitors the electrical impulses produced by a rotary or pulse type dialer, records these impulses, and translates them into the numbers dialed.

<sup>16</sup>442 U.S. 735, 740 (citations omitted).

<sup>17</sup>Id. at 742.



expectation that the numbers they dial will remain secret."<sup>18</sup>

In rejecting the petitioner's argument that he had a reasonable expectation of privacy in making a call from the privacy of his own home, the Court noted that his conduct may have been calculated to keep the contents of his conversation private, but added that his conduct "was not and could not have been calculated to preserve the privacy of the number he had dialed."<sup>19</sup> The Court then found that even if the petitioner had held an expectation of privacy this expectation was not one that society recognized as "reasonable."<sup>20</sup>

In the criminal procedure circumstances of this case, the Smith court did not find any reasonable expectation of privacy in a phone number dialed by a caller for the purpose of Fourth Amendment protection. It seems apparent that the Court did not view phone numbers as generally having any special quality that entitled the defendant to constitutional protection of his alleged privacy related to the phone number he had dialed.

The operation of Caller ID is different, however, from the situation involving the pen register in Smith. Smith involved, among other things, the question of privacy expectations regarding the number dialed by a caller. Caller ID involves the privacy interests in the number that the caller dials from. Nevertheless, the stated rationale of the Smith court may well be relevant to Caller ID. In Smith, the court indicated that subscribers realize that the phone company keeps permanent records of the numbers dialed for billing purposes and, therefore, they do not generally entertain an actual expectation of privacy in the numbers they dial. By the same token, the number of the dialer must also be transmitted to enable the phone company to allocate the bills to the proper customers. To that extent, the Smith rationale would argue against the reasonableness of the caller's expectation of privacy regarding Caller ID transmission of her number.

In any event, while Smith is certainly not dispositive of the questions involving Caller ID privacy, it offers little to support the notion that one's telephone number is afforded special constitutional protection.

#### State Constitutional Protection

Most state constitutions follow the federal model. A minority of state constitutions, however, provide explicit privacy protection.

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<sup>18</sup>Id. at 742.

<sup>19</sup>Id.

<sup>20</sup>Id. at 743.

For example, the Alaska Constitution, provides that:

The right of the people to privacy is recognized and shall not be infringed.<sup>21</sup>

This provision is not absolute, however, and courts have defined limits to that privacy right. For example, in a recent criminal case<sup>22</sup>, the Alaska Court of Appeals reversed the court below in holding that the defendant had no "reasonable expectation of privacy which society is prepared to recognize in his name and address and the locations where he received utility services."<sup>23</sup>

The trial court found that the defendant had a reasonable expectation of privacy partially because the utility had a written policy that prohibited disclosure of the name, address or telephone number of a customer absent his consent, a subpoena or a court order. The Alaska Court of Appeals found, however, that the disputed information "was information which was available because Chryst [the defendant] was a consumer of a public utility. Few people would regard the fact that they are consumers of the services of a public utility to be private information."<sup>24</sup>

The Court noted "what appears to be the majority rule that a person's name and address, by themselves, do not constitute information about which a person can have a reasonable expectation of privacy which society is willing to recognize."<sup>25</sup> Of course, the facts of this case dealt specifically and exclusively with the consumer's name and address, not his telephone number. The question remains whether the Alaska court would hold that a caller has an expectation of privacy in his or her telephone number when making a call.

Similar explicit privacy protection is found in the constitutions of other states. Arizona's privacy provision was recently examined in a Caller ID proceeding.<sup>26</sup> The Arizona Commission found that there are no constitutional impediments to the

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<sup>21</sup>Constitution of the State of Alaska, Article I, Section 22.

<sup>22</sup>State v. Chryst, 793 P.2d 538 (Alaska Ct. App., 1990).

<sup>23</sup>Id. at 542.

<sup>24</sup>Id.

<sup>25</sup>Id.; Contra People v. Chapman, 679 P.2d 62 (1984); State v. Butterworth, 737 P.2d 1297 (1987).

<sup>26</sup>See Re U.S. West Communications, Inc., 131 PUR4th 486, 502 (Arizona Corporation Commission, March 27, 1992).

provision of Caller ID in Arizona.<sup>27</sup>

Many other Commissions have decided that Caller ID, when some type of blocking is available, does not present a constitutional problem.<sup>28</sup>

Therefore, it appears that Caller ID, offered with blocking options, will be found constitutionally sound in nearly all state jurisdictions, at least at the administrative agency level.<sup>29</sup>

### The Federal Preemption Question

The Federal Communications Commission (FCC) has announced that it intends to promulgate regulations regarding the provision of Caller ID.<sup>30</sup> There is apparently some federal concern about state regulations which would prohibit Caller ID unless customers have the option of per-line (as opposed to per-call) blocking. The proposed FCC regulations which have been noticed for comment do not provide for per-line blocking on demand where the phone company would automatically be required to block a customer's number from being displayed at any time. If this remains the case, there will be a direct conflict between the states that provide for per-line blocking and a national policy that excludes per-line blocking. At this time, the FCC has received over 130 comments that cover a wide range of opinions. The FCC is expected to complete work on these regulations this year.

### Conclusion

Throughout history, technology has helped form society and its institutions. From the first tools of agriculture to satellite communications, our institutions have evolved to address the impact that technology has had on society. Likewise, over time, the law has been modified to address new technologies and the effects of those technologies on privacy rights. Often, the issues developed in these cases have ethical and moral, as well as, legal implications. Suicide machines and test tube babies are often sensationalized, contemporaneous examples of technology clashing with societal norms, as reflected in current legal doctrine. Caller ID is only one small link in a chain of technological innovations that are rapidly changing the fabric of the telecommunications industry.

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<sup>27</sup>Id. at 503.

<sup>28</sup>See, e.g., Re U.S. West Communications, Inc., 133 PUR4th 326 (Colorado PUC, May 20, 1992).

<sup>29</sup> The Pennsylvania Supreme Court struck down a Caller ID offering as being illegal under a state wire-tapping statute. Barasch v. Penn. P.U.C., 576 A.2d 79 (Pa. Commw. Ct. 1990)

<sup>30</sup>See FCC Docket CC 91-281.

Changes in telecommunication technology are not merely the stuff of academics or engineers. Caller ID is a perfect example of the fact that these changes are staring consumers in the face. In the case of Caller ID - it is the electronic display of the number of the incoming telephone caller.

From our review, call blocking options provide a simple technological solution that should forestall, if not eliminate, many of the current privacy problems associated with Caller ID. The use of blocking, however, is not without cost. The value of Caller ID is reduced with each customer that subscribes to blocking. Nevertheless, call blocking provides a simple technological solution that balances the privacy needs of the caller and recipient. The provision for blocking varies by state.<sup>31</sup>

The clear trend among state utility commissions over the past year has been to approve Caller ID service, so long as blocking is readily available (and, in some cases, available without cost to the consumer). The federal scheme is still under review. It appears that the current controversy regarding Caller ID privacy is being adequately resolved by blocking technology. In that respect, related technology has provided the resolution to the privacy issue that the introduction of Caller ID technology created.

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<sup>31</sup>See fn. 4, supra.