

NAVIGATING A COURSE TO COMPETITION:

A CONSUMER PERSPECTIVE ON ELECTRIC RESTRUCTURING

A policy paper of the
Competition Policy Institute

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The United States electric power industry is sometimes called the nation's last regulated monopoly. Congress is now examining legislative proposals to require or enable the restructuring of this industry, moving it toward a more competitive form in which consumers have choices for electric service providers.

This is an enormous undertaking. The United States electric power industry is huge -- roughly *ten percent* of all capital investment in the country is dedicated to the generation or delivery of electricity. Electricity powers American industry, heats houses, lights streets, and literally powers the information age. Electricity costs are a major budgetary item for urban and rural households, as well as for small business. For some mining and manufacturing industries, electricity is the input with the single greatest impact on the bottom line.

At the same time, electricity production has a profound effect on the nation's environment: generation of electricity accounts for three-fourths of the nation's sulfur dioxide emissions and an estimated one-third of all CO₂ and NO_x creation. Even small changes in the incentives provided to utilities could have major impacts on their ability to do their part to improve the quality of the nation's air and water.

But the route from the traditional electric power business to a competitive industry is strewn with issues, some of which may be more difficult to resolve than is commonly assumed. These issues include: how to construct a transmission system that operates in a "competitively neutral" way, how to calculate and distribute "stranded costs" of the traditional utilities, how to set the relative regulatory authority between state and federal agencies, and how to solve numerous other questions about cost recovery, environmental effects and system reliability. The resolution of these issues will determine the pace and scope of change in the electric power industry, and will answer the question of increasing concern: how can the electric power industry be restructured to increase economic efficiency and customer choice while ensuring that consumer interests and social objectives are not compromised?

WHAT IS RESTRUCTURING?

By *restructuring* the electric power industry, we mean any of several changes in industry structure that lead to a more competitive industry. These changes can involve the ownership, corporate organization, interrelationship and regulation of electric utilities and unregulated power producers, marketers, and brokers. Restructuring can be caused by changes in law or regulation or by technological or economic changes within the industry. For instance, in both the natural gas and telecommunications industries, restructuring came about through an interplay of forces from inside and outside the industry. Electric restructuring may follow this pattern, with regulatory

changes triggering economic changes that, in turn, provide pressure for additional regulatory changes.

Using this definition, restructuring of the electric power industry has already begun; but competition in the generation segment of the industry, although genuine, has been rather limited in scope. The Public Utilities Regulatory Policy Act of 1978, and the Energy Policy Act of 1992, have introduced a measure of competition in the market for new generating resources, but have not affected the costs of embedded generation of the utilities. As restructuring continues, the value of these utility-owned resources will no longer be determined by administrative processes directed primarily by state regulatory agencies, but instead by market-determined processes. The challenge for state and federal regulators will be to direct the restructuring debate and to fashion rules that will balance the often competing objectives of economic efficiency, consumer protection and equity.

NEW COMPETITIVE CHOICES FOR UTILITIES

In 1997, when a utility seeks to add generating capacity to its system, it faces a wide variety of choices, ranging from building a new generating plant itself, to purchasing power from another utility, to purchasing from an unregulated independent power producer. State public utilities commissions typically require utilities to conduct competitive bids whenever acquiring new generation sources. In this way, wholesale competition has begun to inject market-based prices into rates charged by utilities, forcing utilities themselves to compete on the basis of price for the right to supply new requirements.

For the most part, competitive generators supply power for new loads of the utilities. Utilities are not generally required by state commissions to “rebid” either existing purchased power contracts or the generation owned by utilities against the price of new generation available in the market. Some of these existing resources (e.g., nuclear power plants or high-priced contracts) are more expensive than the price being offered in the competitive wholesale market today.

The current debate in restructuring is whether or not to extend this access to the production of wholesale generators directly to end-use customers. Instead of being required to purchase electric power acquired by a serving utility, this proposed form of industry organization would allow end-use customers to purchase electricity from any supplier, broker or marketer. The serving utility would continue to provide the delivery service (transmission and distribution) and perhaps other services such as billing and metering, but not the electricity supply.

This proposal, called “retail wheeling” or “direct access” will increase the competitive pressures on utilities by exposing all generation resources to competition, including embedded generating plants built prior to the inception of competition in the generation sector. This would essentially cause utilities to “rebid” all their resources continuously in a market that is competitive for all loads, not just for new requirements.

IMPORTANCE OF THE DETAILS

But the simplicity of this description masks the complexity that underlies this proposal. A fully competitive retail market for electricity will entail the creation or invention of structures that do not exist today. It will test the ingenuity of designers and operators of electric systems to accommodate many buyers and sellers of electricity. Most importantly for small consumers, it may require them to substantially change their habits. Some traditional values, taken for granted under a less competitive market structure, could be put at risk. The list at the right captures the categories of issues raised by this proposal.

Two other “network” industries are undergoing restructuring at this time: the natural gas and telecommunications industries. We explore some of the similarities and differences among the three industries with an emphasis on those issues we expect to arise in electric restructuring. The purpose of this examination is to give guidance to restructuring efforts in the electric industry by examining what has happened during the restructuring* of these other industries.

We also consider some of the current literature that predicts the gains to be achieved by restructuring the electric power industry. Perhaps not surprisingly, some of the promises of electric “deregulation” appear to be overstated.

Even a cursory review of the issues raised by electric industry restructuring impresses one with the complexity of the task and teaches this lesson: ***policy makers are correct to proceed carefully so that restructuring improves the efficiency of the electric power industry without jeopardizing its reliability and without subjecting any consumer segment to unfair price discrimination.***

The complexity and difficulty of the issues raised by this restructuring proposal are not reasons to stop moving forward to increase the level of competition in the electric industry. Clearly, American consumers will benefit by increasing competition. But just as clearly, *success depends completely on the details* of implementation. In this paper we try to answer these questions:

- *What should be the pace of electric restructuring?*
- *What can we learn from other industries?*
- *What is the role of Congress in this process?*

Issues Raised by Electric Power Industry Restructuring

- Consumer Issues
- Utility Stranded Costs
- Market Structure Issues
- Market Power Issues
- Jurisdictional Issues
- Environmental Considerations

* We decline to use the term “deregulation” to describe the restructuring underway in the natural gas and telecommunications industries. Deregulation may well be the end result in some segments of these industries. However, there will continue to be a need for regulation during a transition period and, in some segments, (e.g., the natural gas distribution system) regulation likely will persist indefinitely.

Following this Introduction, our report contains seven additional chapters and four appendices. Chapter 2 is the Executive Summary and contains a summary of our findings. Chapter 3 describes the U.S. electric power industry today and Chapter 4 explores six issues raised by restructuring proposals. Chapter 5 examines the parallels between the electric, gas and telecommunications industries. Chapter 6 summarizes the restructuring activities of state legislatures and regulatory commissions. Chapter 7 presents our conclusions and recommendations. Chapter 8 is a bibliography and list of references.

Appendices A and B present a description of the natural gas and telecommunications industries, with an emphasis on the process of their restructuring. Appendix C considers the findings of a popular study of the benefits of electric “deregulation” prepared for the Citizens for a Sound Economy Foundation. Finally, Appendix D contains a glossary of terms.

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THE COMPETITION POLICY INSTITUTE

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Restructuring of the United States electric power industry is underway. Economic and political changes (and, to a lesser extent, technological advances) are reshaping the industry's organization and its regulation.

In this report we address the following questions to assist policy makers as they consider their next statutory and regulatory steps:

- How likely is it that consumers, especially small consumers, will benefit from electric restructuring?
- What issues must be resolved to result in a more efficient electric industry that retains the desirable features of the current system?
- What role should Congress play in electric restructuring?
- Are there lessons from the telecommunications and natural gas industries that apply to restructuring the electric power industry?
- How reliable are studies that predict the economic benefits of electric restructuring?

Electric restructuring is being considered by state regulatory commissions or legislatures in almost every state. We think the correct policy is to maintain steady progress toward more competition in the electric power industry. But this progress must be synchronized with another process: solving some of the daunting problems presented by retail electric competition. It is far more important that regulators arrive at economically rational and politically acceptable solutions to these major problems than rush into restructuring decisions. To make it most likely that consumers benefit from restructuring, state regulators will need flexibility in the timing and details of their restructuring decisions. A self-imposed national deadline for achieving competitive electricity markets is not necessary or advisable.

OVERALL POLICY RECOMMENDATION:

A more competitive electric power industry can benefit consumers. However, significant issues must be resolved before small consumers will benefit from retail electric competition. The potential costs and benefits of electric restructuring will vary greatly from region to region, so that a uniform prescription for restructuring is not desirable at this time. Because states are moving forward at an appropriate pace on restructuring, federal legislation that specifies the details and timing of restructuring is not needed at this time. Instead, federal legislation should enable the development of competition by removing any barriers to competition, clarifying the lines of authority between state and federal regulators, and addressing other issues beyond the reach of the States.

SUMMARY OF FINDINGS:

- Restructuring Will Improve Efficiency and Increase Competitive Choices for Consumers But May Not Produce Comparable Benefits for All Consumers.
- Regional and State Differences Justify Flexible Timing in State Restructuring Decisions.
- States Are Moving Forward at an Appropriate Pace on Restructuring.
- Federal Legislation Should Enable Restructuring by Removing Barriers to Competition, Clarifying Jurisdictional Boundaries and Addressing Issues Beyond the Reach of the States.
- For Consumers to Benefit from Restructuring, Market Power in Generation Must Be Mitigated and Independent System Operators Must be Shown to Function.
- Policies on Stranded Cost Recovery Are the Key to Consumer Benefits from Restructuring.
- Universal Service May Require Special Attention, Especially for Low-Income and Rural Consumers.
- Regulators Should Adopt Performance-Based Regulation for Electric Utilities to Prepare for Competition.
- Natural Gas Pilot Programs Implementing Customer Choice Will Provide Lessons for Electric Restructuring.
- Differences Between the Two Industries Means Policy Makers Should be Careful In Drawing Conclusions About Electric Restructuring from Telecommunications; But Telecommunications Does Teach Lessons About the *Process* of Electric Restructuring.
- Policymakers Should Distrust Flawed Economic Studies of the Benefits of Electric Restructuring.

Finding: Restructuring Will Improve Efficiency and Increase Competitive Choices But May Not Produce Comparable Benefits for All Consumers.

There can be little doubt that increasing competition in the electric power industry will yield a more efficient industry. Competition will provide additional choices to consumers, allocate resources more efficiently and, if full competition in generation develops, prices for electricity should fall, at least on average. The recent rapid growth of non-utility generators shows that the generation sector of the industry is susceptible to competition. Wholesale electric competition has already begun to pay dividends to consumers; retail competition will increase competitive pressures on incumbent utilities and should reduce prices further.

A more difficult question is this: *which* consumers will benefit from electric restructuring?

The equity among consumer classes that is today enforced by regulators will give way to a competitive regime in which consumers' bargaining power and specific load characteristics will determine the price paid for electricity. This could work to the advantage of the largest customers of the electric utilities and against small consumers.

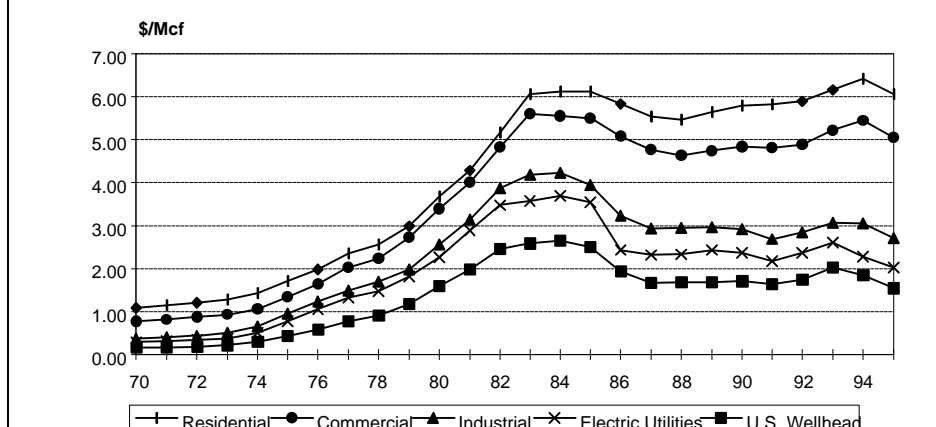
There are three potential outcomes in electric restructuring that would prevent small consumers from realizing benefits from a more competitive electric industry. Regulators and legislators must act to ensure that small consumers are not cut off from benefits that competition might otherwise bring by guarding against these outcomes:

- shifts of costs to small customers
- unfair assignment and recovery of stranded costs
- exercise of market power by deregulated generators.

Cost Shifts. Restructuring in the natural gas industry produced benefits for most consumers, but the biggest share accrued to large industrial natural gas customers. This occurred for two principal reasons. First, the FERC changed its cost allocation methods to assign all fixed system costs to "firm customers," mainly residential and small commercial customers. Second, a portion of the "transition costs" of moving to competition in the natural gas industry were passed on to these same customers. The combination of these effects meant, for example, that residential gas rates rose about 4% in 1994 even though the wellhead price for natural gas fell 8% that year. Prices paid for natural gas by electric utilities fell 12.6% in 1994.

Figure 2-1 shows the spread in nominal prices between customer classes that has developed in the natural gas industry. From 1990-1995 real prices for all customer classes fell, but they dropped much more for industrial customers and electric utilities purchasing gas for generation. A similar result could occur with electric restructuring. This may not be a reason to delay progress toward competition, but policy makers should attempt to reduce this effect through the treatment of stranded costs and by the terms adopted for direct access by small customers.

Figure 2-1. Average Price Paid Per MCF by Customer Class 1970-1995.



Stranded Costs. The treatment of stranded costs will be the key to whether small consumers benefit from electric restructuring and the timing of those benefits. Stranded costs are usually described as a liability for high-cost utilities. But there is another view of these costs: they also measure the “upside” of restructuring for consumers. Stranded costs represent the difference between utilities’ embedded costs and the lower prices that would occur in a fully competitive market. Simple arithmetic and logic shows that full recovery of stranded costs will severely limit the potential benefits of restructuring to consumers. Conversely, if utilities share some of the burden of stranded costs, electric restructuring is much more likely to lead to lower electric prices for small consumers.

There is a connection between stranded cost recovery and cost-shifting. In natural gas restructuring, cost shifts occurred while the wellhead price of gas was falling, so that the effect of shifting fixed costs was masked. Thus, small consumers saw reduced prices as a net result of wellhead deregulation and pipeline reformation, even though industrial customers experienced much larger reductions. If small consumers are to benefit from electric restructuring, any potential cost shifting must be more than offset by a decline in the price of electricity. In other words, any cost realignments must be set on a base of declining prices. What can provide such a baseline of price reductions? There are only two potential sources:

- eliminating the gap between today’s electricity prices and the lower rates that a competitive generation market will produce *without recouping all of the difference from consumers as stranded cost recovery*.
- capturing cost efficiencies from an improved transmission system and improved generation dispatch.

Assuming consumers bear some portion of a utility’s stranded costs, another contentious issue will be the method that regulators use to assign stranded costs to classes of customers. The underlying costs are typically apportioned on the basis of both demand and energy used by customers. If “stranded costs” are apportioned on a different basis, e.g., on the basis of peak

demand alone, substantial amounts of stranded costs could be shifted to groups of customers with lower load factors, typically residential and small commercial customers.

Competition in Generation. There are reasons to be concerned that the development of full competition in the generation sector might be impeded by the exercise of market power by generation owners. Regulation today constrains the market power of vertically integrated utilities, some of whom control large shares of the generation resources. Although no electric utility produces more than 4% of the country's electricity *nationally*, some generating companies hold very high percentage shares of regional markets where the price will be set.

Several recent studies suggest that some proposed market structures, such as regional power pools, may permit generation owners to exercise market power, keeping rates above competitive levels. Policy makers must be assured that the deregulation of generation leads to competitive prices. This may require forced divestiture of generation from transmission and the deconcentration of generation ownership in a region.

Finally, we note an exception to this discussion in this section. The promise of benefits from competitive generation applies mainly to consumers of high-cost utilities with higher-than-market costs of generation. For consumers of today's low-cost companies, it may be difficult to construct a scenario in which their rates are lowered, or even kept the same, if electric generation is deregulated. These consumers could pay higher rates in a regional competitive market while their former utility sells its output at prices above the company's cost and above rates it charges today.

***Finding:* Regional and State Differences Justify Flexible Timing.**

There are very large state, regional and utility-to-utility differences in rates for retail electric service today. Despite the importance of electricity in the U.S. economy, there are dramatic differences in rates (and changes in rates) between regions, and between companies within regions. For example, during the past 8 years, electric rates in New England have increased by more than 28%, averaging 10.4¢/kWh. In contrast, rates in the Great Plains states have increased by only 1% during the same period and now average 6.0 ¢/kWh.

The difference between average *regional* rates, such as the inexpensive North Central states and the costly Northeast states can be more than 60%. However, individual *company* rates can vary by more than 1,000%. The least expensive residential rate in the country is 1.5 ¢/kWh in Douglas County, WA, while the most expensive is on Long Island, NY at 16.1 ¢/kWh.

The map on the following page shows average price per kilowatt-hour for electricity for each investor-owned utility in the country. A comparable map for municipal and cooperative utilities follows page 24 in the next chapter.

There will be relative winners and losers with electric restructuring between states and regions. The upside for consumers also varies considerably from state to state and from region to region. States with very high generation costs have shown an interest in moving quickly to restructure the

industry in their state. States with low-cost generation might reasonably wish to move slowly to maintain the benefits of low-cost generation for the consumers of the state. Such variations will not limit the ability of any state to move forward with restructuring.

There is no intrinsic reason why states cannot proceed towards restructuring at different paces. The experience of natural gas restructuring demonstrates that it is not necessary to enforce uniformity among states in the details. Since FERC Order 636 and the pipeline restructuring that followed, states have required varying degrees of retail unbundling and are permitting varying levels of retail competition for natural gas sales, mainly for industrial customers with interruptible supplies at this point.

Several states have instituted pilot programs, permitting small customers to access gas marketers and aggregators, similar to the proposals being made for retail electric competition. Although the parallels with retail competition in electricity are not exact, there have not been jurisdictional or interstate difficulties implementing retail choice in natural gas to different degrees and on different schedules between states.

***Finding:* States Are Moving Forward at an Appropriate Pace.**

State commissions are employing a variety of approaches in electric restructuring. States are moving forward at a pace that reflects the diversity of conditions faced by consumers and utilities across the country. There is no evidence that federal preemption is needed to ensure continued progress.

There is no need for prescriptive federal legislation specifying the timing of state restructuring decisions or the treatment of specific issues such as the requirement that utilities recover all stranded costs. In fact, such requirements could actually hurt consumers by limiting the ability of states to craft appropriate restructuring plans.

From the experience of the states that are already undertaking restructuring, we can see the huge issues that must be settled. States should be able to deal with utilities in their state and be able to modify the implementation date for restructuring in exchange for other considerations. For example, as a trade-off for partial recovery of stranded costs, state regulators might require a utility to divest some generating facilities, lessening concentration in a market and increasing the likelihood that the market will become competitive. Similarly, regulators might adopt a retail competition schedule that permits a utility to improve its balance sheet; here, the trade-off might be up-front rate reductions or the mitigation of stranded costs.

While a few states are taking a “wait and see” attitude about *retail* competition, virtually all states are moving to enhance wholesale competition. Utilities are now regularly required to justify plant construction or power acquisition plans in comparison to the wholesale electric market. Further, state commissions are beginning to regulate electric utilities under incentive regulation plans that will help prepare the utilities for additional levels of competition.

Not surprisingly, there is a correlation between the average electric rates in a state and the level of restructuring activity. Excluding Alaska and Hawaii, significant restructuring activities are occurring in each of the twelve states with the highest average prices for electricity. In fact, every state that has adopted a restructuring plan is found on this “top 12” list (Table 2-1).

Table 2-1. Electric Restructuring in Twelve States with Highest Electric Rates (excluding Alaska and Hawaii).	
State	Activity
New Hampshire	Restructuring plan adopted. Retail wheeling pilots underway.
New York	Hearings on restructuring plans filed by five utilities.
Rhode Island	Commission has adopted restructuring rules.
Connecticut	Legislative committees studying restructuring.
New Jersey	Restructuring legislation; GPU pilot beginning.
Massachusetts	Final restructuring plan adopted. Mass Electric pilot to begin.
California	Restructuring plan being implemented.
Maine	Commission has issued restructuring plan.
Vermont	Regulators have issued final order for retail wheeling by 1998.
Arizona	Commission orders phase-in of restructuring beginning 1999.
Pennsylvania	Restructuring legislation passed; hearings on implementation. Large scale pilot to begin.
Illinois	Pilot wheeling program underway.

***Finding:* Federal Legislation Should Be Adopted to Enable Restructuring.**

Federal legislation can accelerate the move to increased electric competition by removing any barriers to restructuring and treating issues that states cannot address. Congress should consider legislation that clarifies state authority to order transmission access for retail sales, addresses reciprocity policies among states, permits voluntary regional regulation by state regulators and clarifies the boundaries between federal and state regulation.

We know from the experience of the introduction of local competition in telecommunications that jurisdictional uncertainties can slow down the progress to competition. The Federal Communications Commission, the states and the incumbent local telephone companies are enmeshed in litigation over the relative authority of the state and federal regulators. The FCC’s pro-competition rules have been stayed by the Court of Appeals at the request of incumbent local exchange companies.

The boundaries between federal and state regulators of electricity have not changed substantially since enactment of the Federal Power Act in 1935. However, the industry has changed radically

within the past twenty years. Congressional legislation should leave no doubt of the states' abilities to require access to transmission facilities to implement retail competition.

While maintaining proper safeguards, Congress should also review the Public Utility Company Holding Act (PUHCA) and the Public Utility Regulatory Policy Act (PURPA) for appropriate amendments to ensure that these acts serve the development of competition. Finally, Congress reasonably should consider addressing the environmental effects that could flow from restructuring, including requirements for renewable resources in generation portfolios. These are examples of issues that are either beyond the reach of the states or raise issues of multiple jurisdictions. Such matters are appropriate for Congressional action.

On the other hand, a Congressional deadline for adopting a restructuring plan could actually work against consumer interests. Congress should not adopt artificial time schedules or unrealistic expectations of the market to develop. This would tie the hands of state regulators who will, in any case, be the ones to implement restructuring. State regulators will need maximum flexibility to protect consumer interests in fashioning the state-specific arrangements that increase competition.

State commissions have a variety of tools and levers available to fashion restructuring decisions:

- state legal authority
- timing of restructuring
- level of stranded cost recovery
- initial rate reductions
- form of subsequent regulation
- potential requirements for facilities divestiture
- creation of independent system operators
- treatment of “stranded benefits,” such as environmental programs.

Their restructuring decisions turn out to be blends of these issues, designed to craft a workable restructuring arrangement. Effective restructuring decisions that provide consumer benefits require that states retain this portfolio of tools and the flexibility to use them to fashion an appropriate restructuring plan for their state. Tradeoffs on issues among constituencies are reasonable ways to get to a workable solution.

***Finding:* Stranded Cost Recovery Is a Key Issue for Consumers.**

Restructuring of the electric power industry implies that many utility assets and liabilities will be revalued from their regulatory-determined values to new values determined in the competitive marketplace. Many utility investments may be worth less than their current book values, and a portion of their value today may become “stranded” in the transition to a competitive market. Recent estimates suggest that the total transition costs associated with moving from “cost-of-service” regulation to a more open and competitive market could reach \$200 billion.

These costs represent the gap between the current rates and revenues determined under traditional cost-of-service regulation and the lower prices and revenues in competitive markets. As competition drives down power supply costs, high cost utilities may have to write down the value of certain assets and renegotiate certain contracts to get their costs structures in line with competitive market conditions. In many ways “stranded costs” measures the potential gain that consumers would realize if electricity prices moved immediately to market prices and utilities absorbed stranded costs. Said another way, it is a matter of simple arithmetic to conclude that consumers will be no better off from restructuring if full stranded costs are paid by ratepayers.

There are two issues with stranded costs: i) how to compute stranded costs, (i.e., the difference between historic costs and assumed market-based valuation); and ii) how to apportion responsibility for stranded costs between utility ratepayers and utility shareholders. The resolution of these two issues will largely determine the level and timing of benefits of restructuring for consumers.

Utility stranded investment tends to be concentrated in a handful of states. According to a study by Resource Data International, Inc., the ten states with the largest stranded costs represent 86% of the stranded cost problem, but only 43% of the U.S. electricity market. In addition, RDI reports that the problem is concentrated among a small group of utilities — 20 utilities account for nearly half of the total stranded costs. The map following page 38 in Chapter 4 shows RDI’s estimate of net stranded costs per state.

While CPI does not endorse RDI’s estimates of stranded costs, the map following page 38 shows the differences between states which arise from a methodology consistently applied across all states.

In contrast to the high-cost utilities, there are utilities with very low, or even “negative” stranded costs — companies with cost structures below projected market-based rates. These utilities are generally eager to open the market rapidly, hoping to garner higher prices for their cheap power. Estimates by RDI suggest that low cost utilities, in aggregate, have a below-market “stranded advantage” of nearly \$59 billion that would be realized if these utilities are permitted to charge market-based rates for their production. Of course, the ability of these companies to realize these negative stranded costs will come at the expense of their native load customers who will have to pay higher market-based rates.

The legal and political issue of utility stranded costs holds the key to whether consumers see significant benefits from electric restructuring. The resolution of this issue will determine the level and timing of benefits from restructuring. The value to consumers of electric restructuring will be sharply limited unless electric utilities absorb some portion of “stranded costs.” **Congress should not preempt state regulatory commissions’ authority by requiring the recovery of 100% of stranded costs.**

In the move to competition in the natural gas industry, stranded costs (called “transition costs” in that industry) were shared first between pipelines and gas producers, then a portion of the pipeline stranded costs was passed on to utility ratepayers. Residential and small business natural gas

customers tended to pay a disproportionate share of these stranded costs since many large customers had already left the systems of the local distribution companies or were not assigned a share of these costs.

In the electric industry, the transmission and distribution systems are likely to remain monopolies, leading to proposals to create a “non-bypassable” opportunity for utilities to recoup stranded costs. In the telecommunications industry, competition may make it impossible for the incumbent local exchange companies to recover the full amount of “uneconomic” costs through a similar mechanism since no part of the telecommunications industry is like to remain a monopoly “bottleneck,” similar to the electric transmission and distribution system, providing a means to collect such costs.

***Finding:* Market Power in Generation Must Be Mitigated — Independent System Operators Must Be Shown to Function.**

The benefits of a restructured electric power industry depend critically on two major assumptions: i) the existence of a competitive electric generation market; and ii) an efficiently operated and maintained open access transmission system.

A fully competitive generation market may require intervention by policy makers at the outset to eliminate market power. This may include required separation of generation from transmission and distribution facilities and the mitigation of horizontal market power by generators in a market area.

Today’s transmission owners are typically also generators of electricity delivered over the transmission system. To achieve a competitive generation market, the transmission operator must not be able to discriminate among generation owners, preferring its own generation or giving unequal access. The result of this sort of discrimination will be that electricity rates are kept above market levels. Most analysts agree that access to the transmission system is so critical to the success of a competitive generation market that it must be operated by an independent entity.

This will require the creation of an independent system operator and may also require the segregation or divestiture of the transmission system from owners of generation. An open transmission system, independently operated, efficiently maintained and expanded is still largely a theoretic possibility. Policy makers should exercise appropriate caution by moving forward only as this issue is settled.

Since the passage of the Energy Policy Act in 1992, utility merger-mania has set in. There are eight major electric mergers currently pending before the Federal Energy Regulatory Commission and four large electric/gas utility “convergence” mergers. The FERC has appropriately identified the potential creation of horizontal market power as its primary consideration when examining these mergers. However, traditional measures of market share appear to be inadequate to determine whether a large electric generator will be able to control prices in a generation market.

The eight pending electric mergers are described in Table 2-2.

Table 2-2. Major Pending IOU Mergers.		
Merged Company	Merging Companies	Date Announced
Ameren Corp.	Union Electric / CIPSCO, Inc.	8/95
Conective	Delmarva Power & Light / Atlantic Energy	8/96
Constellation Energy Corp.	Baltimore Gas & Electric / Potomac Electric Power	9/95
FirstEnergy	Ohio Edison / Centerior Energy	9/96
Interstate Energy Corp.	WPL Holdings / IES Industries / Interstate Power Co.	11/95
New Century Energies, Inc.	PSC of Colorado / Southwestern Public Service	8/95
Primergy Corp.	Northern States Power / Wisconsin Energy Corp.	4/95
Western Resources	Kansas City Power & Light / Western Resources	1/96

The FERC has announced its intention to use the U.S. Department of Justice Merger Guidelines to screen future electric mergers on the basis of concentration in horizontal market power. But reliance on static measurements of capacity concentration, as defined in the Merger Guidelines, may not account for the critical aspects that differentiate the electric power industry from other industries, and as a result, may miss the operational aspects of electricity market which could allow generators to influence market prices. Here are characteristics of electricity markets that may make such an approach insufficient for analysis of the potential harm caused by mergers:

- Electricity markets are extremely temporal.
- Transmission constraints and costs can effectively isolate areas from competitors.
- Buyer and seller groups are constantly changing.
- The geographic scope of the market changes constantly with as market clearing prices and transmission costs and constraints change.
- Electricity has widely differentiated value according to how, when, and where it is sold.

Restructuring proposals are premised on the assumption that workable, competitive markets will develop quickly and that competitive forces will discipline the market, producing fair prices for consumers. These assumptions require careful examination, since only regulation today stands between consumers and firms with market power.

***Finding:* Universal Service May Require Special Attention.**

In telecommunications, Congress and the states have adopted explicit funding mechanisms to keep basic telecommunications service affordable for all consumers following restructuring. Unlike telecommunications, the electric industry does not have a similar tradition. In economics terms, there is no “network externality” associated with universal service in electricity, in contrast

to telecommunications. Restructuring the electric power industry could expose some consumers to higher prices and special mechanisms might be necessary to keep prices affordable.

Depending on how the retail market unfolds, it may be necessary for states or the Congress to take a comprehensive approach to maintain affordable electric service. This issue arises both for low-income consumers and for those residing in high-cost, typically rural, areas. While access to electric distribution service will likely remain regulated, policy makers may face issues such as the “provider of last resort” for electric supply service and questions about consumer billing, credit policies, shutoff policies, and basic affordability of electric supply for such customers. It may be true that, at some price, every consumer will be served. But it also seems clear that low income customers, in a competitive market, will be the least desired customer segment.

Much of the restructuring debate has focused on the large investor-owned utilities and has tended largely to ignore the millions of rural customers that are served by the country’s approximate 3,000 municipal, cooperative, and other small public utilities. Many municipal and rural communities have higher distribution costs relative to more densely populated urban areas. The Rural Electrification Administration was established over 60 years ago with the express purpose of helping to “electrify” the rural communities that were too costly for investor-owned utilities to serve. The National Rural Electric Cooperative Association reports, for example, that its members serve territories with an average density of 6 customers per mile, compared to 35 customers per mile for the average investor-owned utility.

There is another consideration for rural electric cooperatives. Since the consumers served by cooperatives are also the owners, there is no opportunity to “share” stranded costs between shareholders and ratepayers – they are one in the same. For members of at least some cooperatives, this means that the benefits of competition could be considerably smaller or result in higher rates.

***Finding:* Regulators Should Move to Performance-Based Regulation for Electric Utilities.**

One important difference between the telecommunications industry and the electric power industry concerns the manner of their regulation.

The telecommunications industry has been subject to alternative forms of regulation much longer than the electric industry, preparing that industry for the onset of competition. In the long distance industry, for example, AT&T was subject to price cap regulation since the mid-1980’s until 1995. Nearly all local exchange companies are now regulated under price cap regulation or other “incentive regulation” arrangements.

Electric restructuring efforts should not get ahead of regulatory reform. “Getting the incentives right” is an essential condition for a competitive market in electricity. State and federal regulators should begin to change regulation so that electric utilities will realize new efficiencies, equipping them for competition.

These regulatory systems, if properly designed, can continue to protect consumers while providing the regulated companies with improved incentives. In short, “performance-based regulation” can help prepare today’s monopolies for tomorrow’s competitive markets while still providing consumer protections until competition develops fully. For those parts of the electric industry which will not become competitive (“the wires business”), incentive regulation can improve the performance of the companies and contribute to the benefits promised by a competitive generation market.

***Finding:* Natural Gas Pilot Programs Will Provide Lessons for Electric Restructuring.**

More than 20 states are considering possible retail unbundling of services for smaller natural gas customers and at least eight local distribution companies have offered transportation service to residential and small commercial customers on a limited basis. These include:

- Bay State Gas
- East Ohio Gas
- California
- Brooklyn Union Gas
- Consumers Gas of Ontario
- KN Energy (Wyoming)
- New Jersey Natural Gas
- Public Service Electric and Gas.

Creating direct access arrangements for all consumers in natural gas markets may be simpler than the comparable task for electricity. For this reason, residential gas pilot programs could yield important early information about consumer preferences and the susceptibility of the market to competition. In the natural gas industry, this information may be unclouded by the concerns about market power, transmission system reliability and other substantial issues that electric restructuring raises.

Experience from these natural gas pilot programs should yield information about the more approachable problems such as the sufficiency of information provided to customers in “choice” programs, customer billing issues, utility and aggregator credit policies, necessary requirements for “provider of last resort,” etc.

***Finding:* Differences Between the Telecommunications and Electric Industries Mean Policy Makers Should Be Cautious About Predicting Effects of Restructuring; However, Telecommunications Teaches Lessons About the Process of Electric Restructuring.**

It is relatively fashionable to claim that the nation’s experience with telecommunications “deregulation” shows that similar restructuring is possible and desirable for the electric power

industry. Indeed, it's sometimes said, "We deregulated telecommunications last year, we should deregulate electricity this year."

There are fundamental differences between the telecommunications and electric power industries. These differences relate to the structure of the two industries, the product they produce, their rate of growth, their regulatory history. Even the goal of restructuring differs between these industries. While useful parallels may be drawn between the natural gas and electric industries, the parallels between telecommunications and electricity are limited. For that reason, policy makers should be cautious about importing the experience from telecommunications into the debate about electric restructuring.

It is a mistake, for example, to draw an analogy between the deregulated telephone equipment industry and electric generation, as some analysts have attempted to do. Beyond the obvious conclusion that more competition is generally better than less competition, the success of introducing competition into the telephone equipment market says almost nothing about the merits of "deregulating" electric generation or the likelihood of its success.

In the electric industry, the "wires business" is likely to remain a regulated monopoly for a long time. In contrast, all segments of the telecommunications industry are now subject to entry by competitors and are expected to become competitive. Facile comparisons of the electric transmission system to the long distance network are misleading. The success of long distance competition certainly should not suggest that policy makers should attempt to make the electric transmission industry competitive.

Nevertheless, the restructuring experience in telecommunications can teach valuable lessons about the *process* used to restructure that industry. We know, for example:

- Restructuring will take time. There is no "silver bullet" available to create a competitive electric power industry. Policymakers have prerogatives which they should exercise. However, there is also a requirement of time in which industry players, regulators and consumers adjust their expectations to a new industry organization.
- There was a maturation period during which Congress developed the political consensus needed to move forward on telecommunications restructuring. The first comprehensive telecommunications legislation was proposed in the mid-1970's. The most recent round of federal legislative efforts, leading to the Telecommunications Act of 1996, dates to 1991. We should expect a similar maturation period in electric restructuring for political consensus to develop.

Most Americans would probably date major changes in the United States telecommunications industry to the divestiture of the Bell Operating Companies by AT&T in 1984. But, in fact, the telecommunications industry has been restructured and deregulated in sectors and in phases over a period of time stretching back to at least 1956. In many ways, divestiture was a ratification of a trend toward competition begun twenty-eight years earlier.

We do not mean to suggest that electric restructuring will require as much time as the development of competition in the long distance telecommunications industry. In many ways, competition in the telecommunications industry has probably blazed the way for competition in electricity both with policy makers and with the public. On the other hand, we must recognize that major changes in these industries require time to implement. More importantly, such significant changes require time for consumers to understand and exercise their options in restructured industry.

Figure 2-2 reviews the history of competition in the long distance industry.

Figure 2-2. History of Long Distance Industry Competition.

1956	"Above 890" inquiry begun by FCC.
1959	"Above 890" order permits construction of interstate microwave networks.
1963	MCI Petition filed.
1969	MCI Order permits interstate private line service.
1971	Specialized Common Carrier decision permits increased competition in interstate private line services.
1973	MCI complaint against Bell system for failure to interconnect.
1976	FCC's Execunet decision orders MCI to cease providing long distance service.
1977	Execunet decision reversed by Court of Appeals.
1979	ENFIA (access interconnection) tariffs filed.
1980	FCC permits resale of WATS service.
1980	Access charges established.
1982	Modification of Final Judgment (MFJ) entered, requiring equal access.
1984	Divestiture.
1989	Equal Access substantially completed.
1990's	Full competition develops.
1995	AT&T declared non-dominant.
1996	Telecommunications Act of 1996 becomes law; FCC removes long distance tariff requirement.

Sources: Various FCC Orders, ETI (1994) and Costello and Graniere (1996).

Finding: Policymakers Should Distrust Flawed Studies of the Effects of Restructuring.

A recent study, frequently cited to estimate economic gains from electric restructuring, contains substantial methodological errors and overstates the potential gains. *Customer Choice, Consumer Value, An Analysis of Retail Competition in America's Electric Industry*, published by the Citizens for a Sound Economy Foundation reports inflated benefits from electric restructuring. Because of its numerous errors and unsupported assumptions, this study should not be relied upon for its major conclusions.

Here are the major problems with the study:

- The study incorrectly assumes that U.S. electricity production can be immediately increased by 25.5% without adding additional generating units. Increasing generation by that level is not physically or economically possible. This mistake undermines the balance of the results in the study.
- The study concludes, without showing how it will happen, that “deregulation” will lead to electric consumption that is constant around the clock and across the seasons. No attempt is made to show how consumer behavior will change to make such an extraordinary outcome possible. This prediction is not reasonable since many unregulated industries with “peak load” characteristics do not achieve 100% load factors.
- The study assumes that consumers will increase electricity consumption by the same percentage as the price decrease: i.e., that demand elasticity for electricity is -1.0. This is an overly optimistic estimate, based on data from the 1960’s and 1970’s prior to fundamental shifts in U.S. energy consumption patterns, important changes in the use of electricity, and in consumer attitudes about electricity use.
- The study “proves” that stranded costs are only \$5 billion to \$42 billion for all U.S. utilities and then assumes that none of these costs are recovered. The methodology is crude, the analysis leads to some conflicting results, and the study’s findings on stranded costs are contradicted by more sophisticated analyses.
- The study suggests that deregulation will cause uniform reductions in electric rates across the country and across customer groups. In fact, there will be relative winners and losers among states and between customer groups.
- The study’s conclusions fail the “plausibility test:”
 - The study says that decreasing electric rates 43% will increase U.S. industrial production 20%. This outcome is not reasonable. Industrial electric rates across the country already vary by more than 43%, yet there are not observable differences in industrial output close to what is predicted by the study.
 - The study predicts that U.S. electricity consumption can be increased immediately by 684 *billion* kWh per year — the equivalent of the ten year growth in electric use actually observed from 1986-1995.
 - The study’s advocated position essentially predicts bankruptcy for some utilities. It is mistaken to suggest that policy makers should not be concerned with this outcome.

No electric utility has adopted the study’s recommended price structure, or been able to achieve the load-leveling the study thinks is possible. Low electric rates in some states have not induced the round-the-clock electricity use required by the study to achieve its results.