2001-005314 Feb 26 p 4:26

Ms. Elizabeth Campbell
Director, Natural Gas Division
Energy Information Administration
1000 Independence Avenue, SW
Washington, DC 20585

Dear Ms. Campbell:

I am writing to confirm the invitation for you to testify before the Subcommittee on Energy and Air Quality on Wednesday, February 28, 2001, at 1:00 p.m. in 2123 Rayburn House Office Building. The hearing will be entitled "National Energy Policy" and will focus on natural gas issues.

This is one in a series of hearings on national energy policy. Your testimony should address the current status of the natural gas markets, including the causes of the recent price increases; the role of natural gas in a comprehensive national energy policy that addresses all forms of energy; and how to increase the supply and deliverability of natural gas and ensure that adequate supplies reach consumers in a timely and safe fashion.

Following are important details concerning the preparation and presentation of your testimony.

The Form of Your Testimony. You are requested to submit a written statement which may be of any reasonable length and may contain supplemental materials; however, please be aware that the Committee cannot guarantee that supplemental material will be included in the printed hearing record. Your written statement should be typed, double spaced, and should include a one-page summary of the major points you wish to make. You will have an opportunity to present an oral summary of your testimony to the Subcommittee; to ensure sufficient time for Members to ask questions, your oral presentation should be limited to five minutes.

Pursuant to Rule 4(b)(1) of the Rules of the Energy and Commerce Committee (a copy of which is enclosed), I am requesting you provide 75 copies of your written statement at least two working days in advance of your appearance. This will allow Members and staff the opportunity to review your testimony. On the day of the hearing, please bring an additional 75 copies of your testimony to satisfy the anticipated public interest in this hearing.

Charles F. Baskin, Staff Director

W.J. "BILLY" TAULBEE, LOUISIANA, CHAIRMAN

U.S. House of Representatives
Committee on Energy and Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115
February 22, 2001

27755

Obtained and made public by the Natural Resources Defense Council, May 2002
Ms. Elizabeth Campbell  
Page 2

Rule 4(b)(1) of the Committee Rules also requires that, if you have the technological capability, you should also submit a copy of your testimony in electronic format, i.e., on a computer disk. The Committee will post your testimony to the Committee Website (at "http://www.house.gov/commerce/welcome.html") after the hearing. This will increase public access to your testimony and reduce the Committee's printing costs. Please be aware that submission of your testimony in electronic form does not relieve you of the obligation to submit the requested number of printed copies of your testimony. Additional guidelines for submission of testimony in electronic format are enclosed.

Please send the electronic and printed copies of your testimony required two working days before the hearing to the attention of the Legislative Clerk for the Committee on Energy and Commerce in 2125 Rayburn House Office Building, Washington, D.C. 20515.

**The Truth-in-Testimony Requirement.** Clause 2(g)(4) of Rule XI of the Rules of the House, and Rule 4(b)(2) of the Committee Rules, require that witnesses appearing in a nongovernmental capacity disclose the amount and source of: (1) any federal grant, or subgrant thereof, by agency and program; and (2) any federal contract, or subcontract thereof, received by the witness, or by an entity represented by the witness, during the current fiscal year or either of the two preceding fiscal years. Enclosed is a two-sided page which is intended to assist you in complying with this requirement. This completed form, and a copy of your curriculum vitae or resume, should be included with each copy of your testimony.

**Publication of the Hearing Record.** Rule XI, clause 2(e)(1)(A) of the Rules of the House requires the Committee to keep a written record of committee hearings which is a substantially verbatim account of remarks made during the proceedings, subject only to technical, grammatical, and typographical corrections. Your testimony, the transcript of the hearing, and any other material that the Subcommittee agrees to include in the hearing record (subject to space limitations) will be printed as a record of the hearing. You will receive a copy of the printed hearing record when it becomes available, usually 30 to 60 days after the date of the hearing.

If you have any questions concerning any aspect of your testimony, please contact Andy Black of the Energy and Commerce Committee staff at (202) 225-2927.

Sincerely,

Joe Barton  
Chairman  
Subcommittee on Energy and Air Quality

Enclosures:  
(1) Electronic Format Guidelines  
(2) Rules for the Committee on Energy and Commerce  
(3) Truth-in-Testimony disclosure form

27756
The Honorable Spencer Abraham  
Secretary of Energy  
Rm 7A257  
1000 Independence Ave.  
Washington, DC, 20585

Re: National Effect of Electric Power Restructuring

Dear Mr. Abrams:

As a loyal and strong supporter of the Republican Party and our new President, George W. Bush, I have become increasingly concerned with our US national electric power policy. The lack in our Federal Government, particularly in the Department of Energy and the Federal Energy Regulatory Commission, of competent people to assess the impact of potential new policy on all new Americans is startling.

I have attached a copy of an article which will be appearing in the March 1, 2001, issue of Public Utilities Fortnightly, a widely circulated national magazine. I thought you would like to see it in advance. It indicates that solely because of government policy, largely originating in the Federal Government, our national electricity costs are increasing more than 10%. These are the total costs to all consumers in the USA. The distribution among various classes of customers, industrial, residential, and commercial, depends on state and business practices. The fact remains, however, that our policies are leading to a significant and unjustified transfer of money from those using electric power to those providing electric services. This is being done without any consideration of the impact on our national economy, and the impact on the reliability of service and consequence to human suffering that results from power interruptions.

I have included a brief summary of my qualifications to support my views. My hope is that you or a key member of your staff will see this article and recognize the need to evaluate the costs and benefits of past policy and, as I say in the article, save what is good, throw out what is bad, and restructure the rest.

A hopeful Republican supporter.

Sincerely,

[Signature]

27757
ERRANT ECONOMICS? LOUSY LAW?
MARKET MANIPULATION?
ALL THREE!!

By J.A. Casazza
President, American Education Institute
IEEE Life Fellow

Public Knowledge:

Transparency. Economists stress the need for it so those who vote with their
dollars can make intelligent decisions. Why has data been concealed on the cost
increases needed to achieve electric power restructuring (erroneously called deregulation)
that has taken place and is continuing to take place? Has the withholding of such
information been an instrument for manipulation of public opinion? Clearly, yes.

The purpose of this article is to assist the process of providing national
transparency. Information must be collected to enable an overall evaluation of the costs
and benefits of present policies, and, hopefully, development of improved future policies
out of the disasters of the past ten years.

Booming prices, more power interruptions. It is a national problem. What has
caued it? FERC blames higher costs because of generation shortages and rising fuel
prices. The California PUC blames market abuses from the lack of true competition.
The economists complain a true competitive market has not been established. These
related views do not address the core of the problem. The entire restructuring process
failed to investigate the costs and benefits resulting from the policies being adopted.
Unlike our environmental procedures, an impact statement was not required from those
proposing major changes in how electricity was to be produced, distributed, bought, sold,
and priced. The huge number of those that would benefit from the restructuring were not interested in any analysis of the costs and benefits. Those in government saw political capital in claiming electricity price reductions; those in the electric power industry saw a potential for large profits; those in the professions saw a chance for increased business and to earn large consulting fees. They sold restructuring to an unwary public on the mantra that competition is good — it will reduce prices. Only a few in the engineering profession stood their ground and argued that the effects of what was being done had not been analyzed. They were accused of "creating a smoke screen to prevent progress."

What have the results shown?

Errant Economics

Time. What is its role in economics? Do the economics of a business change when the time between production and use of a product is months, or weeks, or days, or with the speed of light? The electric power business is unique. It has the shortest time constant between production and use, i.e., zero, and the longest time constants for increasing production and delivery capacity, i.e., years. Most businesses provide a product such as gas, water, steel, ice cream, and shoes. The characteristics and quality of the products they provide can be different. Products can be made or obtained in advance of need and stored by the producer or users for future needs if price change are anticipated.

Many other businesses provide services such as the telephone, express mail, and Internet access. In these service businesses, there is time available for provision of this service. The characteristics of the service can be different, e.g., FedEx vs. UPS vs. US
Mail. Delays are acceptable if the facilities for the service are not available when requested.

Electricity is really a service, not a product. It is a means for taking energy in one form (e.g., fuel) from one location and delivering it instantly to other locations in a more useable, deliverable (wires) and controllable form. A kilowatt hour is the same everywhere, there can be no product differentiation. There are no inventories possible with electric power. Busy signals are not acceptable when a user clicks a switch to light a room. The operational time constant for electric power is zero. The planning time constant for the electric power industry is two to ten years. No other industry requires the amounts of time required by the electric power industry to increase production and delivery capability. A key factor in the economics of any business is the ratio of these two time constants.

The economic theory used in restructuring the electric power industry has been badly flawed. The economists from some of our most prestigious universities have failed to fully understand the electric power industry before applying their theories to it.

As stated by Dr. Eugene Coyle:

... economic efficiency will not result and cannot result from an unregulated power industry. ... furthermore, ... such a market cannot provide rates that will be 'just, reasonable, and non-discriminatory' as is now required in the statutes or regulations of most states."

The standard theory of competition fails in industries where the product sold is an undifferentiated commodity, and separately requires large fixed investment, or 'overhead costs'.

Electric power has these characteristics.

Human behavior has not been correctly considered in developing the economic theory for electric power. John Maynard Keynes wrote:
The beauty and simplicity of such a theory are so great that it is easy to forget that it follows not from the actual facts, but from an incomplete hypothesis introduced for the sake of simplicity. Apart from other objections to be mentioned later, the conclusion that individuals acting independently for their own advantage will produce the greatest aggregate of wealth depends on a variety of unreal assumptions to the effect that the processes of production and consumption are in no way organic, that there exists a sufficient foreknowledge of conditions and requirements, and that there are adequate opportunities of obtaining this foreknowledge. For economists generally reserve for a later stage of their arguments the complications which arise - (1) when efficient units of production are large relative to the units of consumption, (2) when overhead costs or joint costs are present, (3) when internal economies tend to the aggregation of production, (4) when the time required for adjustments is long, (5) when ignorance prevails over knowledge, and (6) when monopolies and combinations interfere with equality in bargaining - they reserve, that is to say, for a later stage their analysis of the actual facts. Moreover, many of those who recognize that the simplified hypothesis does not accurately correspond to fact conclude nevertheless that it does represent what is 'natural' and therefore ideal. They regard the simplified hypothesis as health, and the further complications as disease.

He has described remarkably well, many years ago, the characteristics of the electric power industry.

Dr. Coyle also cites Game Theory developed by Lester G. Tesler, an economist at the University of Chicago. Tesler concludes that the players in the game - producers of electricity for example - should "cooperate" to reach economic efficiency, i.e., the best solution for society.

Clearly much of the economic theory that has applied in the restructuring of our electric power systems has been wrong -- it has failed to recognize the unique characteristics of our electric power systems. For this, some of our leading universities are largely at fault. They appear more concerned with the research grants they could obtain, and the consulting fees they would subsequently earn, than the public welfare.
Inherent Costs of Restructuring

To provide a definitive and precise summary of the inherent costs and benefits of the restructuring of the electric power industry is a massive assignment. It needs a collection of data for all costs that changed because of restructuring. This obviously requires a projection of what they would otherwise have been, data that can be projected only approximately, even with knowledge of the procedures in place before major restructuring was initiated. Based on such knowledge, a list of specific costs and benefits increases resulting from restructuring could be estimated. Also needed is a vast amount of actual cost data from every state and region of the USA, and from those providing electric power, much of which would not be made available under claims of its "competitive value".

How to proceed? Start through the forest by accumulating what can be obtained from available sources. Where only a small amount of data for a state or a company can be obtained, obtain as many samples as possible, and average them. Costs also have to be classified to determine which are initial one-time only costs and which are costs that will continue for many years. Using judgment, these data can be pro-rated to obtain an indication of national costs and benefits for each category. Review of the itemized data can provide an estimate of overall national totals. While such fragmentary data doesn't provide precise numbers, as in intelligence or detective work, it does provide an indication of the answer. It will get you in the ballpark, but not to home plate.

For more than four years, I have been collecting and reviewing information from many sources for this purpose, including NERC, EIA, FERC, DOE, EPRI, IEEE magazines, newspapers, the Congressional Research Service, and the Internet. I have

5
also obtained information from my personal contacts, from those attending my IEEE
Distinguished Lectures, from my lectures for the American Education Institute, and from
fellow engineers who have been involved in various restructuring consulting
assignments. Based on this data, and my professional judgment, I have compiled my
estimate of the costs and benefits of restructuring.

Table I provides the results of my analysis of cost increases. It shows that,
without any market manipulation or change in fuel prices, the restructuring policies
adopted in the USA have caused cost increases requiring an overall increase in the
national annual cost of electricity of about $27.8 billion, or 13% of average national
prices. A breakdown is given in Tables II, III, IV, and V, which show the increases in
capital, operating, administrative, and reliability costs. These tables reflect the results of
sales of close to 100,000 Mw of generating capacity at several times book value. Also a
key factor were the disincentives to build new transmission lines.

Annual cost increases have been used in this analysis. Some costs will be
incurred as a "lump sum". Others will be spread over many years. To obtain estimated
annual costs, "lump sum" costs were typically assumed to be recovered over a 10-year
period based on a 15% return. While effort was made to avoid "double counting," and
while a small amount of these costs may remain to be recovered in the more distant
future, they represent the order of magnitude of the extra electricity costs from
restructuring.

Total costs to be borne by consumers have also been estimated, although only
those that need to be recovered in the price of electricity have been used to determine the
required 13% average national increases.
A remaining question still requiring an answer is "would our generation shortages have been so severe, and our reliability problems been as great if we had continued to use our former procedures of inter-company cooperation and split savings on power interchanges?" Many believe the answer is no. A competent analysis should be made to determine the answer to this question.

Benefits of Restructuring

The benefits of restructuring can not be easily determined. However, with some reasonable assumptions and the available data, order of magnitude projections can be made. These are shown in Tables VI. It shows the estimated benefits accruing to consumers, not the huge profits accruing to the suppliers. An estimate of annual benefits to consumers of about $6.9 billion is reasonable. This amounts to an overall annual decrease in the cost of electricity of about 3%.

Market Manipulation

The "rules of the game" as established by legislation and regulation have provided opportunities for organizations to "game the market". This is what some believe competition is all about. In other industries manufacturers decide when to produce or how to provide their services, how to price them, etc., to maximize their immediate profits. This is the inherent flaw in much of the legislation that was adopted for electric power. The rules of the game induced a "profits now" approach, not an approach designed to minimize long-term costs. Adequate investigations have not been made of the incentives to withhold generating capacity or to adjust reliability rules to reduce
competition, and the taking of other measures which would increase the scarcity of
electric generation so as to drive prices and profits up.

A key ingredient for providing the ability to manipulate the market, has been the
lack of knowledge and understanding of those in state governments of the operation and
economics of electric power systems. Market manipulation in California provides an
unfortunate example. Fellow engineers with whom I have associated have told me that
while working as consultants in the California restructuring, they knew that the system
being established was one that would encourage the deliberate creation of shortages and
withholding of generating capacity from operation and the delaying new capacity
installations in order to maximize profits. These engineers were required to sign
confidentiality agreements which prohibited them from discussing the problems they saw
when working as consultants in the California restructuring.

Universities have been given funds to do research on generating procedures and
bidding procedures for both transmission rights and available generation that would
maximize the profits of the bidder with no regard to the impact on total costs for
electricity. Consultants have been asked to find locations for new generation that would
cause transmission constraints for competitors, enabling the new plant to sell at a higher
price or to capture a market. Those who have investigated recent experience in
California have commercial or marketing backgrounds. A lack of understanding of
power system operation is apparent in their procedures. Procedures for much more
thorough investigations are available.
Based on my many years of experience, I believe "gaming the system" has increased national electricity costs somewhere between 1% and 5%. In my judgment, an estimate of 3% is reasonable.

**Increasing Fuel Costs**

Increasing fuel costs have been responsible for some of the large electricity cost increases that have occurred recently. Fuel costs historically have been about 40% of total electricity costs. A 50% increase in the cost of fuel (oil, gas, and coal) would increase overall electric costs about 15% since hydro and nuclear costs would not be affected.

**Overall Cost Increases**

A reasonable projection of the overall increase in national electricity costs by major components is shown below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase from restructuring</td>
<td>13%</td>
</tr>
<tr>
<td>Decrease from restructuring</td>
<td>3%</td>
</tr>
<tr>
<td>Increase from market manipulation</td>
<td>3%</td>
</tr>
<tr>
<td>Increase from fuel costs</td>
<td>15%</td>
</tr>
<tr>
<td><strong>TOTAL INCREASE:</strong></td>
<td><strong>28%</strong></td>
</tr>
</tbody>
</table>

This is not far from the overall national cost increase that has occurred in electricity in the past year. It shows a net requirement to increase costs of about 10% solely as a result of restructuring. In addition, consumers will bear in other ways a cost increase of about 3% because extra reliability related costs as shown in Table V. The decline in reliability is also causing some consumers to spend money to buy small generation units for emergencies, an additional extra cost not included.
There are some additional costs that have not been included which have not received adequate attention. One is the securitization of debt as a part of the restructuring. Some states have guaranteed for the utilities some of the debt incurred as a part of the restructuring process. This securitization process has reduced debt cost, about 4 percent, e.g., from 11% to 7%. There is no free lunch, however, since this benefit is being achieved at the expense of "trading on the debt ratings" of states which provide it. When such states require additional financing the interest rates they will pay will recognize their securitization obligations. The costs of "trading on the debt ratings" of the state is something that taxpayers will have to pay sooner or later.

Lastly, and perhaps most importantly, some contracts for sales of generating capacity are being accompanied by a requirement that the seller buy the output of the plant for a number of years. The California experience has demonstrated the importance of such contracts. The negotiations for these sales present great risks, however. Sellers want to maximize the sale price to obtain funds for other purposes. This can be done by agreeing to buy back the plant output at a high price. The higher the price paid for plant output, the higher the sale price of the plant. Some oversight over such sales seems necessary to protect consumers interests.

Why?

The rush to "deregulate" was initiated in the United Kingdom (U.K.). Claims were made of the benefits which were blindly accepted in the USA and worldwide. The results of the U.K. changes were huge profits to the new owners and higher prices to
consumers. The huge profits have been used to buy systems and plants throughout the world.

Large industrial users in the USA were concerned with unfair rate structures in most states which overcharged industry and undercharged residential consumers. Their concern was solely to lower their electricity costs. They saw the introduction of competition as a means to do this. They shortsightedly failed to consider the increased costs to achieve this and the impact on our overall economy.

The economists, lawyers, and those with commercial interests took over control of policy for electric power. The political approach of input from "stakeholders" gave controlling influence to those with large amounts of money at stake. The need for technical competence in setting policy was not recognized. No one represented the average consumer. The overall concern was with commercial and legal questions, not technical questions. The lack of knowledge and investigation of potential effects by legislators, regulators, was an important flaw. The press parroted analogies with other businesses which had vastly different characteristics. Our universities were dominated by economic theorists who would not listen to those questioning their views.

Utilities were won over by promises of huge payments for stranded costs. The California utilities originally opposed the restructuring plans proposed by the legislature, recognizing they would increase costs. They agreed to support the restructuring plan after agreement they could recover a $26 billion stranded cost settlement.
Conclusions

A significantly increasing portion of the nation is realizing that the promises of lower electricity prices of those who advocate the restructuring of the electric power industry were grievously in error. The "gurus" at our universities, the high ranking government officials, and those in the industry (both independent power suppliers, large industrial firms, and in existing utilities) saw this as an opportunity to obtain considerable economic or potential benefits for themselves or their companies. Many made ridiculous analogies with the electric power business to other businesses. They provided considerable misinformation (e.g., the Federal Reserve Bank's latest publication on the electric power industry). Their activities lead to reduced research in the electric power technology, and reduced funding for education for the new generation of engineers required to develop our new electric power technology.

The changes resulting in these massive errors were a reaction to many years of unfair regulation by often incompetent regulators, many of whom were concerned with their political and professional futures rather than protection of the consumers. A system which did not reward good management and penalized some companies unfairly led to the need for change. Unfortunately the changes made have resulted in a new system which results in higher costs, which produces higher profits, and must increase prices. We jumped from the frying pan into the fire.

The concern with profits now, rather than long-term minimum costs, in a business with the time constants of the electric power industry was doomed to cause the public severe harm. We are now facing a turbulent future. The egg cannot be unscrambled. What we need to do is to save what is good, remove what is bad, and restructure the rest.
We need a close examination of the formulation of customer-owned cooperatives as a solution to our bulk supply problems. We need to reintroduce technical competence into the policymaking procedures. We need to drop the ridiculous regulatory requirement that those who have experience in the management, planning, design, and operation of our electric power systems cannot serve in positions on the boards of directors for our reliability councils, ISO's, RTO's, and other governing organizations. We need to bring back technical competence and concern for the overall public interest.

NOTES:

1. The author requests that any having specific data related to the costs and benefits of restructuring send it to him. Information collected will be compiled with a copy sent to all who contributed.

2. A novel written by the author entitled "Sham? Shame!" will be published shortly which will provide insight into the people who have been involved and the intimate events which lead to the developments discussed in this article.
TABLE I
Extra National Costs from Restructuring

<table>
<thead>
<tr>
<th>Annual Cost Increase</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Billion $/Year</td>
<td></td>
</tr>
</tbody>
</table>

Capital Related Costs (Table II)  | 11.4 |
Operating Related Costs (Table III) | 13.3 |
Administrative Costs (Table IV)    | 3.1  |
Annual Cost Increases to be recovered by electric supplier from customers. | 27.8 |
Reliability related costs borne directly by customers (Table V) | 6.0  |
Total Annual Cost Increases        | 33.8 |

Required Increase in Electricity Costs:

| Annual National Electricity Use: | 3,240 billion Kwhr |
| 1999 Average National Electricity Cost: | 6.66¢/kwhr |
| Increase Required by Restructuring: | $27.8 Billion |
| .85/kwhr | |

Increase Required by Restructuring: 13%
TABLE II
National Annual Capital Cost Increases Resulting From Restructuring

<table>
<thead>
<tr>
<th>Description</th>
<th>Annual Cost Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Purchases of Generation Assets Above Book Value</td>
<td>$6.2 Billion S/Year</td>
</tr>
<tr>
<td>(includes increases in investment, increase in return on investment,</td>
<td></td>
</tr>
<tr>
<td>associated consulting, financing, and legal costs)</td>
<td></td>
</tr>
<tr>
<td>* Extra Generating Capacity Required</td>
<td>$2.2 Billion S/Year</td>
</tr>
<tr>
<td>(more capacity required for increased uncertainties, decreased</td>
<td></td>
</tr>
<tr>
<td>coordination, transmission limitations, and to provide an improved</td>
<td></td>
</tr>
<tr>
<td>competitive market)</td>
<td></td>
</tr>
<tr>
<td>* Mergers</td>
<td>$1.1 Billion S/Year</td>
</tr>
<tr>
<td>(includes payments for consulting and legal advice, financing costs,</td>
<td></td>
</tr>
<tr>
<td>golden parachutes for executives, early retirement costs for staff</td>
<td></td>
</tr>
<tr>
<td>reductions)</td>
<td></td>
</tr>
<tr>
<td>* Unbundling</td>
<td>$0.3 Billion S/Year</td>
</tr>
<tr>
<td>(includes accounting, consulting, and legal fees)</td>
<td></td>
</tr>
<tr>
<td>* Stranded Costs</td>
<td>$1.0 Billion S/Year</td>
</tr>
<tr>
<td>(includes extra costs for buyouts of power purchase contracts</td>
<td></td>
</tr>
<tr>
<td>mandated by government and early payment for regulating assets)</td>
<td></td>
</tr>
<tr>
<td>* Metering Costs</td>
<td>$0.6 Billion S/Year</td>
</tr>
<tr>
<td>(extra metering costs required to facilitate retail wheeling)</td>
<td></td>
</tr>
<tr>
<td>TOTAL EXTRA CAPITAL COSTS:</td>
<td>$11.4 Billion S/Year</td>
</tr>
<tr>
<td>Description</td>
<td>Annual Cost Increase Billion $/Year</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>* Establishment of ISOs, RTOS, TRANSCOs</td>
<td>$1.1</td>
</tr>
<tr>
<td>(includes recovery of start-up costs, additional software costs, extra annual operating costs, increased costs for NAERO and reliability councils)</td>
<td></td>
</tr>
<tr>
<td>* Energy Costs</td>
<td>$9.7</td>
</tr>
<tr>
<td>(extra costs for payments based on highest bid price rather than actual bid price for portion of nation where this is done, for scheduling dispatch based on prices instead of incremental production costs, and for increased transmission losses)</td>
<td></td>
</tr>
<tr>
<td>* Power Exchanges, Marketing Organizations</td>
<td>$1.2</td>
</tr>
<tr>
<td>(includes initial costs plus annual operating costs)</td>
<td></td>
</tr>
<tr>
<td>* Hedging Contracts, Risk Minimization</td>
<td>$1.2</td>
</tr>
<tr>
<td>(extra costs for hedging contracts, for risk minimization services, and for futures contracts)</td>
<td></td>
</tr>
<tr>
<td>* Transactions Cost</td>
<td>$0.1</td>
</tr>
<tr>
<td>(extra costs for billing complexities resulting from wheeling and customer choice)</td>
<td></td>
</tr>
<tr>
<td>TOTAL EXTRA OPERATING COSTS:</td>
<td>$13.3</td>
</tr>
</tbody>
</table>

Obtained and made public by the Natural Resources Defense Council, May 2002
TABLE IV
National Annual Administrative Cost Increases

<table>
<thead>
<tr>
<th></th>
<th>Annual Cost Increase</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Billion $/Year</td>
<td></td>
</tr>
</tbody>
</table>
| * Costs for Extra Hearings, Filings  
(includes costs for legal services, staff, and lobbying) | $0.6                  |   |
| * Coordination Contracts  
(extra costs for coordination contracts to achieve system coordination with competition and unbundling) | $2.5                  |   |
| TOTAL EXTRA ADMINISTRATIVE COSTS: | $3.1                  |   |
TABLE V
National Annual Reliability Related Extra Costs

<table>
<thead>
<tr>
<th></th>
<th>Annual Cost Increase Billion S/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Increases in Interruptions and Power Curtailments (extra costs occurring to consumers)</td>
<td>$5.0</td>
</tr>
<tr>
<td>* Loss of Life to Customers Equipment (loss of life for motors from increased heating during voltage reductions)</td>
<td>$1.0</td>
</tr>
<tr>
<td>TOTAL EXTRA RELIABILITY COST:</td>
<td>$6.0</td>
</tr>
</tbody>
</table>

Obtained and made public by the Natural Resources Defense Council, May 2002
### TABLE VI
National Annual Cost Reductions from Restructuring

<table>
<thead>
<tr>
<th>Description</th>
<th>Annual Cost Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Reductions In Capital Costs</td>
<td>$0.9 Billion $/Year</td>
</tr>
<tr>
<td>(including reductions in capital costs for new plants,</td>
<td></td>
</tr>
<tr>
<td>improvement from reductions in generator down time, and</td>
<td></td>
</tr>
<tr>
<td>reductions in transmission additions)</td>
<td></td>
</tr>
<tr>
<td>* Reductions in Operating Costs</td>
<td>$3.0</td>
</tr>
<tr>
<td>(including improved efficiency of existing thermal plants,</td>
<td></td>
</tr>
<tr>
<td>reductions in labor costs less increase in contract labor)</td>
<td></td>
</tr>
<tr>
<td>* Reductions From Mergers</td>
<td>$1.5</td>
</tr>
<tr>
<td>* Reduction in Debt Costs From Securitization</td>
<td>$1.5</td>
</tr>
<tr>
<td>TOTAL REDUCTIONS:</td>
<td>$6.9</td>
</tr>
</tbody>
</table>

Obtained and made public by the Natural Resources Defense Council, May 2002
REFERENCES:

4. Ibid., pg. 35.