COLORADO ELECTRICITY ADVISORY PANEL

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Robert Williams

November 1, 1999

The Colorado Electricity Advisory Panel hereby transmits to the Colorado General Assembly, the Governor's Office, and the public this Evaluation Study Report, subject to the requirement of Senate Bill 98-152:

"The electricity advisory panel … shall conduct a study to assess whether restructuring of the retail electric industry is in the best interests of all classes of Colorado electricity consumers and the state as a whole. The panel shall report its findings to the general assembly and the governor. The report shall be submitted no later than November 1, 1999, and shall contain specific findings on the issues identified in ….this section."

The Panel conducted a comprehensive study of electric utility industry restructuring over a fifteen-month period. The Panel held over thirty meetings to plan, implement, review, evaluate, and produce specific findings on sixteen restructuring issues through a ballot process involving over three hundred questions. The Panel gathered data and opinions by:

- Holding open discussions with fifty experts;
- Commissioning studies by nationally-recognized contractors, then reviewing the results;
- Hearing the views of two hundred members of the public at public comment meetings, and
- Reading documents submitted by members of the public who provided written comment to the Panel's Draft Report.

After considering these inputs, each Panel Member cast a vote on whether restructuring is in the best interest of all Colorado electricity consumers and the state as a whole. Members also prepared majority, minority, and individual reports. Panel Members also made specific findings on the sixteen issues mandated by the legislature for investigation.

The Evaluation Study Report is divided into three parts: (1) Decisions and Recommendations of the Panel; (2) a Report on the Panel's Processes; and (3) a report on Electric Utility Industry Restructuring Issues and the Contractors' Products. The entire record of the Panel's activities is accessible at www.dora.state.co.us/puc.

Members of the Colorado General Assembly, representatives of the Governor's Office, and other interested members of the public are encouraged to review the Evaluation Study Report when considering electric restructuring. For assistance in securing further information or assistance, please contact Bruce Smith, Director, Colorado Public Utilities Commission, at 303-894-2000.

Sincerely,

Senator Dave Wattenberg
Chairman

Table of Contents

Executive Summary 1
Section One-- Decisions And Recommendations 16
Background *16*
Colorado General Assembly Consideration Of Restructuring *16*
The Panel's Reporting Process *17*
Panel's Decisions And Recommendations *17*
Statements From The Panel Members *17*
Opposition to Restructuring, signed by 17 Members *18*
Endorsement of Restructuring, signed by 9 Members *30*
A "Middle Ground," signed by 7 Members *60*
An individual statement prepared by Karen Brown *64*
An individual statement prepared by Eugene Packer *68*
An individual statement prepared by James Spensley *77*
An individual statement prepared by Phillip Tollefson *78*
Sixteen Issues Mandated To Be Evaluated *86*
General Industry Structure *102*
Systems Benefits Charge *105*
Section Two-- A Report On The Panel's Processes 106
Acknowledgments *106*
The Legislative Intent To Conduct A Study *106*
Study Tasks *106*
Reports To The Legislature And Governor *107*
The Panel's Budget *108*
Members Of The Panel *108*
The Panel's Work Plan *110*
Selection Of Contractors And The Scope Of Their Tasks *110*
The Seminar And Dialogue Series *111*
Public Participation *112*
The Panel's Decision-Making Process *113*
Section Three-- A Report On Electric Utility Industry Restructuring Issues And The Contractors' Products 114
The Electric Utility Industry Restructuring Framework 114
National Framework *114*
Colorado Electric Power Industry Profile *115*
Investor-Owned Utilities *116*
Colorado Power Plants *117*
Summary Of The Contractors' Work 117
Low-Income Issues *117*
Energy And Economic Modeling *118*
Social-Economic-Legal Issues *120*
COPUC Staff Research *123*
A Comparison Of Colorado Electric Rates And Costs *123*
Licensing Requirements For Suppliers Of Electricity *125*
Colorado Utilities And Regulatory History *125*
Timing And Implementation *127*
Results Of Questions To Key Interest Groups On Implementation And Timing *128*
Consumer Safeguards *129*

The Summaries Of The Issues *131*
Today's Utility Rates 132
Future Rates 134
Consumer Safeguards 136
Consumer Safeguards: Low-Income Consumers 138
Renewable Energy, Energy Efficiency Programs, And Environmental Issues And Programs 140
Taxes, Fees, Payments In Lieu Of Taxes And Fees, And Other Revenues 142
Net Stranded Costs, ... 144
Net Stranded Benefits 144
Universal Service, Reliability, And Availability Of Colorado's Generation 146
Effects On Utility Employees 148
Impacts On Rural Consumers 150
Competitive Advantages, Preferential Power Issues, Legal Requirements 152
Licensing Requirements 154
Local Choice 156
Market Power *158*
Contents of Electronic Appendix 166
Concluding Statement 167

EXECUTIVE SUMMARY
Colorado Electricity Advisory Panel
Evaluation Study Report

Following several years of substantial debate, the Colorado General Assembly passed Senate Bill 98-152 which authorized the creation of a broad-based 30-member Electricity Advisory Panel ("Panel"). This Panel was charged with studying the electric utility industry in Colorado and preparing reports for the General Assembly, the Governor's Office, and the general public.

In executing its legislative mandate, the Panel conducted a comprehensive study of electric utility industry restructuring over a fifteen-month period. The Panel gathered data and opinions by:

- Holding open discussions with fifty experts;
- Commissioning studies by nationally-recognized contractors, then reviewing the results;
- Hearing the views of two hundred members of the public at public comment meetings, and
- Reading documents submitted by members of the public who provided written comment to the Panel's Draft Report.

The Colorado General Assembly mandated the Panel to determine whether restructuring of the retail electric industry is in the best interests of all Colorado electricity consumers and the State as a whole. After considering all the information that was gathered and various opinions that were expressed during the process, on October 18, 1999 the Panel answered the question as follows:

Of the twenty-nine appointed Panel Members, seventeen voted that restructuring is not in the best interest.[1] Twelve voted that restructuring is in the best interest.[2]

Members of the Panel issued a series of reports on electric utility industry restructuring. The Panel voted 17-12 that restructuring is not in the best interests of all Colorado electricity consumers and the state as a whole. However, this vote does not constitute the two-thirds majority that the Legislature required as a formal recommendation of the Panel. A simple majority joined in a report setting forth their reasons for concluding while restructuring is not beneficial to Colorado. An additional report contained the arguments of those who support restructuring. A "middle-ground"

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[1] David Broyles, Ray Clifton, Jerry Demel, Lewis Entz, James Henderson, Thomas Holgerson, Dale Hollingsworth, Joe Janosec, Robert Mason, Thaine Michie, James Oaks, Kenneth Reif, Guy Runco, Donald Rutledge, Phillip Tollefson, Dave Wattenberg, and Jacqueline Wedding-Scott.

[2] Eric Blank, Paul Bonavia, Karen Brown, Jay Hopper, Roger Kort, Ronald Lehr, Charles McCulloh, Eugene Packer, Kerry Ramsey, Guy Runco, James Spensley, and Robert Williams.

report received support from seven Members, four of whom favor restructuring, and three of whom oppose restructuring. Four other minority reports were filed as individual statements. The Staff of the Colorado Public Utilities Commission also drafted a report that contained a description of the issues that received the two-thirds majority mandated by the Legislature.

Statements by Panel Members

The Panel determined that they should prepare their own individual and group reports to place in the Final Report. The full text of these statements appears in Section One. The summaries of the Statements follow, in order beginning with the Statement signed by the most Panel Members; individual Panel Member's papers appear in alphabetical order.

Executive Summary

Keeping Electric Service Affordable and Reliable in Colorado
Retail Restructuring's Time is Not Here and Not Now
Statement of the Panel Majority in Opposition to Retail Restructuring
Of the Electric Industry in Colorado

After evaluating the information gathered during the past 15 months and focusing on the likely impacts of restructuring Colorado's retail electric industry as required by SB 98-152, 17 members of the 29-member Panel[*] conclude that such restructuring is not in the best interest of all Colorado electricity consumers and not in the best interest of the State as a whole. The undersigned join in adopting this Statement of the Panel Majority in Opposition to Retail Restructuring of the Electric Industry. The Majority Report attached to this Statement generally represents the view of 16 Panel members—the majority of the members of the Panel.[**] Panel member Phil Tollefson who has joined this Statement has different opinions on certain issues in the Majority Report, and has prepared a separate report.

In summary we believe restructuring of the retail electric industry is not in the best interest of all Colorado consumers and the State as a whole for the following reasons:

- Colorado's electric rates are relatively low. States that have actually implemented retail restructuring have almost always been high cost states. Significantly different issues arise when low cost states like Colorado consider adopting retail restructuring of the electric industry.

- The Panel's energy consultant, Stone & Webster, which has conducted the only thorough study to date of retail restructuring impacts specific to Colorado, found that under every tested scenario, rates, on an average basis, were likely to go up—as much as 29% more than under the existing system over a twenty (20) year period—if retail restructuring were implemented.

- The predicted rate impacts will be disproportionate with low income, fixed income, rural, residential, and small business consumers suffering rate increases greater than the Stone & Webster projections, i.e., if large commercial and industrial consumers see decreases, then other consumers will see even greater increases than those projected.

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[*] The Electricity Advisory Panel (the Panel) was established by the Colorado General Assembly and tasked to determine whether restructuring of the retail electric industry is in the best interests of all Colorado electricity consumers and the State as a whole. The Panel was further assigned the task of addressing the manner in which restructuring should be implemented if the General Assembly decides to go forward with implementation of electric industry restructuring.

[**]While a clear majority of the 29 members of the Panel agree that restructuring is not in the best interest of all Colorado electric consumers and not in the best interest of the State as a whole, the State legislation commissioning the Panel's study required decisions to have a two-thirds vote, i.e., 20 out of the 29-member Panel. Therefore, the report accompanying this Statement has been denominated as the "Majority Report" representing the majority of the Panel while not representing the two-thirds of the Panel necessary to be denominated as a "decision" of the Panel.

- The Panel's economic consultant, DRI, in conjunction with the Stone & Webster study, found that projected rate increases under retail restructuring would hurt Colorado's economy, possibly causing a predicted loss of 29,000 jobs.

- A single utility in Colorado—Public Service Company—controls almost 2/3rds of the electric generation available to the State of Colorado, and just under 80% in the front-range area (including Denver-metro). As a result of this market power, Public Service Company could unilaterally raise rates under retail restructuring to even higher levels than the increases predicted in the Stone & Webster Report.

- Colorado's electric transmission system is import limited and cannot be easily expanded. Additional power cannot be readily brought into Colorado, but Public Service Company's cheap power could be sold into markets in other states, with Colorado consumers losing access to these low cost power resources.

- Before Colorado considers implementing retail restructuring, a competitive wholesale market must develop in the region.

- Rural economies would be hardest hit, suffering from loss of jobs and being left with higher cost of electric service if large electric loads are "cherry picked" by new suppliers.

- Skilled electric workers are needed to reliably operate and maintain Colorado's electric system. Electric industry workers could be adversely affected by retail restructuring and protections would be required to provide them a fair deal in view of likely mergers, asset sales and downsizing.

- Retail restructuring could severely impact governmental taxes, fees and revenues, complicate tax administration and compliance, and create "level playing field" inequities for the electric industry and for its customers.

- Under the current system, Colorado's electricity consumers receive all of the benefit of lower than market cost power. Under retail restructuring these benefits become "stranded benefits." Consumers will have legitimate claims to these stranded benefits while investor-owned utilities will want to capture them for their shareholders. The result will be pitched battles in the legislature and courts over who is entitled to these stranded benefits and how they should be returned to consumers.

- Retail restructuring would expose consumers to many cost, reliability and service risks not inherent in the regulated electric industry.

- Efforts to address the adverse impacts noted above could cost electric consumers more money and result in more regulation.

- The experience in states that have chosen to implement retail restructuring is too recent and too limited to determine the actual impacts of restructuring and how to avoid pitfalls and mitigate impacts if Colorado were to move to retail restructuring.

- The public does not support restructuring of the retail electric market at this time. The vast majority of citizens who appeared at the six public hearings held by the Panel throughout the State spoke in opposition to such restructuring. Of the almost 200 speakers, approximately 80% opposed retail restructuring, 10% supported it and 10% were undecided.

- The Panel has heard and become aware of concerns that have been expressed regarding the reliability of Colorado's electric system and the need to add generation capacity to meet the energy demands of Colorado's growing population and economy. As Panel members joining this Statement in Opposition, we share many of these concerns; however, we believe retail restructuring is not the answer to resolving them. These concerns relate primarily to investor-owned utilities. The Public Utilities Commission has the authority to address these concerns and should do so.

The undersigned majority of the Panel believes there is clear and significant evidence that restructuring of the retail electric industry in Colorado is not in the public interest. Any effort to impose retail restructuring must be accompanied by pervasive safeguards. Such necessary measures, in total, will likely increase even further any increases in rates that will occur under retail restructuring and will require additional regulation to protect consumers. Even if all of the mechanisms identified in the report—such as mitigation of market power, return of stranded benefits to consumers, consumer and employee safeguards, prevention of adverse impacts to rural economies and the Colorado economy—are adopted as part of retail restructuring, it is our belief that in the short-term all classes of consumers and the State of Colorado as a whole will not benefit and in the long-term it is unlikely all classes will benefit.

David Wattenberg, Chair, At Large
Lewis Entz, Vice-Chair, Agricultural Consumer of Electric Energy
David Broyles, Residential Consumers in a County with a Population of Less than 30,000
Ray Clifton, Cooperatively-owned Distribution Electric Utility
Jerry Demel, Cooperatively-owned Generation and Transmission Association
James Henderson, Joint Action Agency that Furnishes Wholesale Electric Power to its Members
Thomas Holgerson, Small Business Consumers who Employ Less than 50 Persons
Dale Hollingsworth, Fixed Income, Senior Consumers of Electric Energy
Joe Janosec, County in Which There is Both an Electric Generation Facility and Mining or Producing Coal Or Gas for Sale to Colorado Electric Utilities for Eventual Use in the Generation of Electricity
Robert Mason, Labor Representative of Employees of an Electric Utility
Thaine Michie, Municipality-owned Utility that Generates Electric Energy
James Oaks, Commercial Consumers of Electric Energy
Kenneth Reif, Office of Consumer Counsel
Guy Runco, Employees of a Distribution Utility
Donald Rutledge, Agricultural Irrigators
Phillip Tollefson, Municipally-owned Electric Utility that Distributes Electricity
Jacque Wedding-Scott, Municipal Government that does not Own or Operate an Electric Utility

EXECUTIVE SUMMARY

CUSTOMER CHOICE: AN IDEA WHOSE TIME HAS COME

A Report of Colorado Electricity Advisory Panel Members[3]

in Support of Customer Choice in Electricity

The national trend in electricity is all in one direction—towards customer choice. Customer choice is a reality for the over 60 percent of Americans who live in the 23 states already opting for competition in electricity supply. The merits of competition far outweigh any drawbacks that might occur, and the claim that competition would increase utility bills has been proven wrong time and again in the real world of consumer experience.

Colorado is the highest-priced of the five remaining Western states still not allowing customer choice:

Colorado: 5.95 cents/kilowatt hr.
Idaho: 3.87 cents/kilowatt hr.
Utah: 5.17 cents/kilowatt hr.
Washington: 4.04 cents/kilowatt hr.
Wyoming: 4.33 cents/kilowatt hr.

(Source: Dept. of Energy, Energy Information Administration)

For regional neighbors such as Montana (always lower-priced than Colorado) and other states, competition is bringing consumers 5-15 percent lower electric prices.

Properly implemented, customer choice is the best path forward for Colorado:

Competition is producing lower electricity rates than monopoly regulation. In states with a restructured electricity industry, retail prices have declined 5-15 percent, either by mandate or through efficiencies brought about by competitive markets. In virtually every formerly regulated industry, prices have decreased with advent of competition.

Lower prices for electricity mean lower prices for services and manufactured goods. Electric costs are built into consumer products and services; in some industries, electric costs account for 60 percent or more of total production costs. All consumers benefit from lower prices due to electric savings.

The public wants choice in electricity supply. Support for customer choice in Colorado spans a wide spectrum: from the environmental and renewable energy communities to the coal and natural gas industries, from residential customers to industrial consumers, and from traditional utilities serving the majority of Coloradans to new competitive suppliers. Groups as diverse as The Electricity Consumers Resource Council, National Taxpayers Union, BOMA (Building Owners and Managers Association) International, National Association of Neighborhoods and American Public Power Association (representing more than 2,000 community-owned electric utilities) all support customer choice.

Competition attracts new investment. For example, nearly 20,000 megawatts of new power plants have been proposed in Texas since the advent of competition, with similar results occurring in other states that allow customer choice.

[3] Eric Blank, Paul Bonavia, Jay Hopper, Roger Kort, Ronald Lehr, Richard Lewis, Chuck McCulloh, James Spensley, Robert Williams.

Low-income individuals, public institutions, non-profit organizations as well as residential customers benefit from choice. For example, the American Association of School Administrators believes customer choice will not only reduce utility bills (a school's second largest budget item after personnel costs), but also allow schools to channel those savings back into the classroom. Schools, hospitals and government facilities are already securing savings in states that have moved to competition.

Competition brings new products and technological innovation. The competitive marketplace brings innovations such as "smart meters" enabling consumers to use electricity at lower-cost times, environmentally-friendly "green power" and disclosure and education so consumers can know power costs and quality before they choose a electric supplier.

> *"In taking the action (to allow customer choice), we have recognized that government regulation, as well-intended as it has been, cannot bring about the same degree of economic efficiency and innovation which is spurred by the competitive market."— Michigan Public Service Commissioner Svanda (1999)*

Rural Colorado can benefit from competition. Lower electricity prices can make rural Colorado more attractive to business and help offset such natural disadvantages as higher transportation costs and distance from population centers and markets. The benefits of competition extend to farms and ranches too: a year-long pilot program in upper New York state resulted in electricity bill savings of 9-15 percent for farmers. Colorado's rural areas will benefit as rural renewable energy resources – wind, solar, biomass, hydro – are brought on line to meet competitive demand.

A competitive market will support the public's interest in environmental and conservation programs. Consumers' interest in "green power" is better served in a competitive environment as companies increase their investment in wind, solar and other types of renewable generation. Energy efficiency thrives as competition allows customers to seek lower bills and higher service quality and provides new metering and rate innovations.

For each issue to be addressed in competition, solutions have been found all across the country. With the overwhelming trend nationally toward customer choice, and the positive results being achieved in states that allow customer choice, it is time for Colorado to act. We should pick the best solutions and move forward. It is no longer enough to identify issues and do nothing more.

The Panel study process has consumed nearly two years. Other states have moved ahead to competition and are securing the benefits of new investment, lower prices, market innovations, customer education and increased investment in renewable resources and energy efficiency.

The Panel gathered useful information, but the process demonstrated the danger of purely theoretical studies. One central element of the Panel's study, the rate forecasts of its consultant Stone & Webster, was based on untested and unrealistic assumptions. For example, the Stone & Webster model compared an unrealistically "perfect" version of the current system (as if all Colorado power plants were controlled

by one perfect operator) against a version of competition that assumed artificially high costs and prices.

The Stone & Webster rate forecasts are contradicted by common sense, by a more realistic study recently performed by the Department of Energy and by the actual results being obtained in states that have moved to competition. Theoretical models and hypothetical projections are simply no match for the real-world facts: customer choice is generating consumer savings in every region of the country.

> *"There is no economic reason to go slow in the adjustment to competition. The transition should proceed expeditiously. For instance, policy makers considering a 10-year delay in competition to ensure a 'smooth transition' should temper that judgment against the fact that the cost of waiting 10 years would be on the order of $2 trillion in lost (national) GDP."*
>
> *—Customer Choice, Consumer Value, Clemson University*

Regulation of Colorado's electricity industry as a monopoly responded well to a specific time and set of circumstances. Regulation still has a place in Colorado for reliability, consumer protection, and electric transmission and distribution. But just as consumers can now choose from among natural gas providers and long-distance companies, they should be given the right to choose from among electricity suppliers.

With electric markets opening up in this region and throughout the country, further delays, hypothetical studies and pilot programs would serve no useful purpose. Since 23 other states have committed to open their retail markets to competition on a long-term basis, there is very little incentive for marketers, aggregators, brokers and other new market entrants to participate in short-term experimental pilots programs in the remaining states, especially where there is no certainty regarding the timing of the state's move to competition.

Further delays only postpone the benefits of customer choice for Colorado consumers. It is time to move ahead to harness the power of competition.

Customer choice is an idea whose time has come.

Executive Summary
"Keeping the Lights On": A Middle Ground Report[4]

The Colorado EAP split on the issue of whether or not restructuring to allow retail customers to choose their electric supplier is in the best interest of the state of Colorado. Many on the panel thought restructuring was not a good idea. Others thought it was. Whether or not the legislature decides to restructure Colorado's electric market, however, together we need to focus quickly and intensively on finding sufficient supply and demand resources to meet rapidly growing demands at prices that are reasonable to Colorado's electric customers.

Over the next fifteen years, the EAP's modeling contractor forecasts that the Front Range will need 4,750 MW of new resources , enough to power two cities the size of Denver at a cost in excess of $4 billion. Unfortunately, the existing processes for bringing these new resources online -- involving adversarial resource planning and acquisition, facility siting, and air quality permitting proceedings before state, county, and federal decision makers -- are not likely to result in a quick, or an economically and environmentally attractive, approach for meeting growing needs.

This problem is worsened by the uncertainties created by the potential for future industry restructuring. Utilities like PSCo are understandably reluctant to make long-term infrastructure and resource investments without knowing future wholesale market structures, the terms for stranded cost recovery, and their role as provider of last resort. Likewise, independent power producers and other energy service providers are likely to be cautious about investing in the absence of a clear wholesale market structure. Given these uncertainties, key stakeholders are discouraged from making the necessary investments -- in essence, frozen in the headlights.

Significant improvements to the status quo urgently need to occur in Colorado. Key stakeholders in Colorado's electric industry need to pull together to solve our problems in a timely fashion.

[4] Signed by Eric Blank, Karen Brown, Ron Lehr, Ken Reif, Skip Spensley, Robert Mason, Dale Hollingsworth

Executive Summary

Minority Report

Prepared by Karen M. Brown

Roughly 260,000 of the 1.3 million households in Colorado live with incomes that qualify for federal energy assistance. Many of these households have difficulty paying their home energy assistance needs on an ongoing basis. They are challenged to generate adequate income to meet their overall sustenance, often due to limited resources, skills and expertise. Today, in a regulated market place they have difficulties; in the future, should a restructured market place exist, they will continue to have difficulties. The question for low-income consumers is how to not make the situation worse, and hopefully even better, through electric restructuring - for an item so important to be considered a basic necessity of life!

Change is already happening. Energy providers are focusing more on the bottom line and thus reducing services offered to low-income customers. Credit and collection policies have tightened significantly for the poor, in effect causing rate increases. The time that utility staff spends on the phone resolving customer payment issues is now measured; the trend is toward incentives to keep calls short. Utility funding and support of low-income energy assistance programs is declining. For some utilities, customer service people are no longer located in the state of Colorado, leading to some confusion and lack of knowledge of local conditions, local assistance, even knowledge of the fact that the company services a particular city in Colorado. Additionally, the power supply is less reliable than it has been over the last 25 years. Unfortunately, poor families have the fewest options available to respond to "brown-outs" or "black outs."

Many of the concerns expressed above are fears about what will happen in a deregulated market place. Yet, these concerns are realities today. Consumers, especially the low-income, are feeling the burdens without the benefits. It is as if restructuring is happening - "virtual restructuring" - without protective mitigating measures and the ability to choose a supply provider. The utilities are already protecting themselves and increasing their options; the consumers deserve the same - protections and options.

Because there is a belief that Colorado is operating in a world of "virtual deregulation" without protection, the low-income representative supports moving the existing supply market to retail choice with legislation that provides the appropriate protective measures for low-income families. Such legislation would also need to address the other 16 issues outlined in the electric study panel legislation.

Under a regulated electric system, the regulatory focus is on the "public interest," which includes addressing the home energy needs of low-income consumers. This sets precedence that low-income needs must also be addressed in a market-driven system. Low-income consumers need certain protections, assurances and services aimed at preventing hardship as a result of restructuring. Additionally, market forces do not remedy all imbalances that can result.

Such protective mitigating measures include, but are not limited to, a public benefits charge consistent with the Governor's Energy Assistance Reform Task Force; low-income exemption from such a charge; studies to determine the impacts of restructuring on the poor with options to resolve the problems; non-discrimination language; service performance measures; ability to implement discount rates; continued energy provider participation in raising funds in times of crisis and customer communication regarding the types of programs available to help those in need; specific low-income public relations and education campaigns; and aggregation assistance.

Executive Summary

Colorado Industrial Consumers' Perspective on Electrical Restructuring
Prepared by Eugene Packer

The Colorado General Assembly formed the Electricity Advisory Panel and tasked it with determining whether electrical restructuring of the retail electric industry is in the best interest of all Colorado electricity consumers and the State as a whole. Also, the General Assembly asked that the Panel to address the manner in which restructuring should be implemented and timed (if the General Assembly decides to go forward with implementation of electric industry restructuring).

Electrical consumers had opportunity during the month of July 1999 to provide input to the Advisory Panel. Hearings were conducted in the Colorado Cities of Craig, Montrose, Durango, Ft. Morgan, Denver, and Pueblo. Colorado Industry was not well represented well in these meetings and an overall industrial input was not provided. That input is provided in the Appendix of this document.

The following, not all inclusive, Colorado Industries and Associations support customer choice and restructuring of the electrical industry:

Air Liquide
Anheuser-Busch
Amoco
Asarco
Ball
BP Amoco
CF&I Steel (Rocky Mtn. Steel)
Chevron
Conoco
Colorado Industrial Energy Consumers Group
Colorado Oil & Gas Assoc.
Coors Brewing Company
Climax Molybdenum
Engage Energy
Enron
Exxon
Hewlett-Packard Company
Holnam Inc
IBM
KN Energy
Kodak
Lockheed Martin Astronautics
Royal Crest
Seneca Coal Company
Shell Continental Companies

Colorado Industry recommends the following principles for electrical restructuring legislation:

1. All Utility Customers Must Have the Freedom to Choose Their Electricity Supplier.
2. Generation Services Should be Competitive. Transmission and Distribution Should Remain Regulated for Now.
3. Residential Customers Must Have the Ability to Benefit from Customer Choice.
4. Reliability, Quality, Universal Service, and Safety Must be Maintained.
5. Rural Customers Must Benefit from Customer Choice.
6. Licensing of Power Merchants.
6. Utilities Must Not be Permitted to Surcharge Customers for Uneconomic Investments.
7. Conservation, Renewable, Low-Income, and Environmental Issues Must Be Considered.

Colorado Industry is aware and concerned with the needs of all Colorado's interests. Industry recognizes the broad meaning of the term "deregulation" and advises the Legislature to use time, caution, and wisdom in the process of deregulation.

Executive Summary

James W. Spensley, Member-at-Large

Unfortunately, I feel this effort has fallen short of my expectations for providing a valuable roadmap for possible legislative action. There are two principal reasons for this in my opinion.

First, the statutory requirement for a "vote" by the Panel members at the end of our deliberations has placed this process in an adversarial context focusing on winners and losers. This adversarial context has engendered positional and defensive debate and a lack of interest or willingness among key members to explore creative, "win-win" solutions.

Second, our effort has been hampered by the fragmented approach to evaluating the multifaceted issues that involve trade-offs in efficiency and costs to meet our differing objectives. This Panel has not had the opportunity to assemble a "complete package(s)" for a true evaluation of the trade-offs and mitigation steps that may be needed to find a common consensus on improvements. Unfortunately, the parceling of issues and competing interests into sixteen questions to be answered has oversimplified the task at hand. The outcome of this effort could have been more productive if our focus had been on constructing several alternative course of action or "structures" for improving the current system and evaluating their costs and benefits to different interests in the present structure.

For these two reasons, I have chosen not to vote on many of the separate issues that were presented to us in detail. My only votes and endorsements have addressed those issues that reflect the direction or more integrated approach that I believe is needed in order to provide reliable and sustainable energy services in the future.

Executive Summary

Panel Member Phil Tollefson

As a member of the Electricity Advisory Panel representing municipal distribution utilities, I have exercised my right to submit a report for inclusion within the final report. The text of my report is included within Section One of the EAP Final Report. I would like to point out that the opinions stated in my report do not necessarily represent the views of all municipal distribution utilities in Colorado, as there are a variety of perspectives within this group.

I believe that most consumers basically desire greater opportunities for choice and the related benefits of competition afforded by the free market system. The present state of uncertainty as to whether and how Colorado will restructure hampers investment in needed transmission and generation facilities. If allowed to persist, there could arise significant system reliability risks as well as growing economic development concerns. There does not appear to be any readily identifiable way of reducing this uncertainty without moving forward in some fashion. However, before Colorado does proceed with restructuring, there are immediate steps identified in my report that should be taken which will help minimize potential problems in a future market. These steps include alleviating constraints to transmission development and encouraging the development of independent power resources. My report also identifies what I view as critical restructuring issues and how Colorado should proceed with them. In addition, I have further clarified the reasoning behind my "no" vote on the ultimate question as to whether or not restructuring is in the best interests of all Colorado consumers and the state as a whole. In summary, it is premature to support restructuring without a better definition of what it would look like.

(This concludes Executive Summary papers.)

Implementation Decisions

In addition to answering the question of whether restructuring is in the best interests of all Colorado electricity consumers and the state as a whole, the Panel was directed to address the manner in which restructuring should be implemented, including the timing of implementation**, if the General Assembly decides to go forward with implementation of electric industry restructuring**. The summary of Implementation Decisions follows:

At the heart of retail electric competition is the concept of customer choice, which means that retail electric customers in Colorado would have the opportunity to select their supplier of electricity. Transmission and distribution functions would remain a regulated monopoly subject to either PUC regulation in the case of investor-owned utilities and non-exempt cooperatives and local governing body regulation in the case of municipal electric utilities and exempt rural electric cooperatives. Local distribution companies would continue to own and operate distribution facilities and customer service charges and metering and billing would remain regulated.

The Panel determined that stranded costs or benefits should be determined on a settlement basis. Under this approach, the requesting utility would submit an application to its regulatory agency (either PUC or local governing body in the case of municipal systems or rural electric cooperatives) proposing the amount and treatment of stranded costs or benefits.

The Panel voted that if competition is adopted, an excessive degree of market power would exist in the Colorado electricity market. The Panel's recommended implementation plan requires separate affiliates to provide competitive and noncompetitive services, the imposition of affiliate transaction rules, and standards of conduct governing affiliate relations. In addition, regulators should be given the authority and tools to limit the exercise of market power. Capacity withholding would be banned in the event a poolco structure is adopted, and all Colorado utilities would be required to participate in some form of an Independent Systems Operator (ISO) arrangement.

The Panel determined that cooperative and municipally owned utilities should have the right to choose whether to participate in the competitive market. Such an "opt-in" right is consistent with how other states have addressed participation by municipal and cooperative electric systems in retail restructuring.

The Panel approved a strong set of consumer protection requirements including a disclosure label showing price and resource mix, as well as a standard offer service at cost-based rates with the incumbent utility as the default provider. Additional consumer safeguards include: a statewide consumer education program; quality of service through performance based regulation; universal service; regulation of debt and collection practices; consumer privacy provisions; customer aggregation; prohibition of unfair trade and marketing practices; and the establishment of a dispute resolution process and enforcement tools with the ability to levy fines.

The Panel determined that licensing requirements should apply to new electricity suppliers and consist of the following: identification, proof of authority to do business, regulatory and customer contact, service description, agreement to comply with state rules and contribute to state funds, annual reporting requirements, demonstration of financial and technical fitness, attestation to information accuracy, and disclosure of cost information to prevent predatory pricing. Finally, the Panel suggests that the PUC be authorized to impose additional requirements it deems to be in the public interest.

The Panel recommends supporting municipal/community aggregation through a voluntary buying group.

Regarding low-income customers, the Panel's recommended implementation plan consists of periodic studies to determine the impact of competition on low-income customers, a systems benefits charge to fund low-income energy assistance programs, a requirement that there be no undue discrimination, and the use of a quality of service metric in a performance-based regulation mechanism.

The Panel's recommended implementation plan consists of maintaining the historic level of investments in renewable resources and energy efficiency during some transition period. The plan also includes requiring periodic disclosure and labeling for electric power, and reliance on tax incentives for renewable energy support. The Panel supports the use of voluntary green marketing for renewable energy, energy service companies to deliver energy efficiency, and finally, requiring generators to meet existing air quality standards.

If electric competition is implemented, the amount of taxes, fees and other revenues paid to Colorado's taxing authorities is likely to decrease, and the collection of revenues is likely to become more complex. The Panel's recommended implementation plan calls for including various adjustments to the tax law in restructuring legislation. The goals of these tax law changes are to provide a level playing field for all industry providers and their customers, place out-of-state providers on a comparable basis with in-state providers, and eliminate revenue losses to state and local governments.

The Panel's recommended implementation plan consists of a systems benefits charge, to be implemented during some transition period, to support employee retraining, relocation, early retirement, and severance packages. In addition, minimum employee training and certification standards are recommended and specific performance standards are recommended where performance regulation is applicable.

The Panel was also directed to prepare findings on sixteen evaluation issues identified by the legislation. The Panel held over thirty meetings to plan, implement, review, evaluate, and produce specific findings on sixteen restructuring issues through a ballot process. The Panel cast votes on over 300 separate questions to determine what constituted two-third majorities and what constituted simple majority views on the sixteen evaluation issues. The results of the voting are contained in the sections entitled "The Panel's Decisions and Recommendations."

SB98-152 included provisions for Minority Reports on any issue to be included at the request of one or more of the dissenting Members. Members of the Panel have drafted their positions on the advisability of restructuring. The full text of these reports is contained in Section One of the report.

Section Two of the Report describes the legislative intent, study tasks, required reports, budget matters, a listing of the Panel Members, the Panel's work plan, process for selecting contractors, the Seminar and Dialogue Series, public participation, and the Panel's decision-making process.

Section Three of the Report presents a framework for understanding electric utility industry restructuring, including a national Colorado-specific profile. Section Three contains summaries of the work conducted by the Panel's contractors and the COPUC Staff. The Section

concludes with two-page reports on the sixteen mandated issues, featuring pertinent facts and opinions obtained throughout the process.

Conclusion

The Electricity Advisory Panel issues this Evaluation Study Report after reviewing the facts and opinions from many sources over the past fifteen months. We acknowledge receipt of valued inputs, including detailed research reports from our consultants, the Staff of the Colorado Public Utilities Commission, presentations from fifty speakers at our Seminar and Dialogue Series, interaction with fellow Panel Members, statements from the general public, and personal interactions with interested colleagues. We have responded to the issues mandated by the Legislature to be assessed. Every Panel Members has provided an answer to the question of whether restructuring of the retail electric industry is in the best interests of all classes of Colorado electricity and the state as a whole. Upon request, we stand ready to further advise the General Assembly and the Governor's Office.

Colorado Electricity Advisory Panel
Evaluation Study Report

SECTION ONE

DECISIONS AND RECOMMENDATIONS

Background

Under the existing system of regulation in Colorado, each incumbent electric utility is granted the right to be the sole provider of electric service for a specific area or areas in the state. In exchange for the right to be the sole provider, electric utilities are obligated to serve all customers in their service territory on a reliable basis. Rates charged under the existing regulatory structure must not be unduly discriminatory among different classes or groups, and preferences to any specific customer are prohibited. The rates charged are based upon cost of service, and, in some instances, performance based principles, where a utility is provided a reasonable opportunity to recover its prudently incurred costs including the cost of capital associated with its investment in generation plant and other facilities. For investor-owned utilities, rates are established by the Colorado Public Utilities Commission. For rural electric cooperative associations electing to do so under state law, rates are established by their board of directors without PUC oversight. For municipal utilities serving inside municipal boundaries, the rates are established by their city councils. Rates for municipal utilities serving outside municipal boundaries also are established by their local governing body without PUC approval, as long as the rates are the same inside and outside the city.

A debate is currently going on throughout the country on whether the existing system of electric utility industry regulation should be changed. This debate has many names: deregulation, restructuring, direct access, re-regulation, retail competition, retail wheeling, and others. Simply stated, retail competition generally permits end-use customers an opportunity to choose their electric supplier. That supplier, in turn, provides power to the end-use customers via the regulated distribution company. Under retail competition, rates reflecting generation supply would tend to change from cost-based rates to market-based rates. Significant legislative, regulatory, consumer, and industry debate has accompanied opening up the retail electricity market to competitive forces.

Depending on how it may be measured, over twenty states have made substantial changes to the laws that define the retail electric market in their states, setting their states' utilities on a course towards more open markets. Virtually every state that has not changed their laws has either conducted, or is now in the process of conducting, legislative or regulatory studies of the topic. About half of the United States population now live in states that have made a commitment to open their retail markets.

Colorado General Assembly Consideration of Restructuring

Following several years of substantial debate, the Colorado General Assembly passed Senate Bill 98-152 in 1998. Electric restructuring legislation was not introduced in the 1999 Colorado legislative session. SB 98-152 authorized the creation of a broad-based 30-member Electricity Advisory Panel charged to study the electric utility industry in Colorado and prepare reports for the General Assembly, the Governor's Office, and the general public. Members of the Panel are listed in Section Two of this report.

The Panel's Reporting Process

The General Assembly required that an Interim Report be released by December 1, 1998, that a Draft Evaluation Study Report be released by July 1, 1999, and that a Final Report be released by November 1, 1999. These Reports, along with a detailed chronicling of the Panel's activities are posted at: www.dora.state.co.us/puc.

The Mandates from the Colorado General Assembly to the Electricity Advisory Panel:

1. **Determine whether restructuring of the retail electric industry is in the best interests of all Colorado electricity consumers and the State as a whole.** On October 18, 1999 the Panel answered the question as follows: Of the twenty-nine Panel Members, seventeen voted that restructuring is not in the best interest. Twelve voted that restructuring is in the best interest. The rationale for the Members' votes is found in the reports from Panel Members.
2. **Prepare findings on sixteen evaluation issues identified by the legislation.** The Panel cast votes on 308 separate questions to determine what constituted two-third majorities and what constituted simple majority views on the sixteen evaluation issues. The results of the voting are contained in the sections entitled "The Panel's Decisions and Recommendations" and "Future Industry Overview."
3. **A Minority Report on any of such issues will be included** at the request of one or more of the dissenting Members. Members of the Panel drafted or concurred with reports stating their positions on the advisability of restructuring. These are contained in Section One.
4. Address the manner in which restructuring should be implemented, including the timing of implementation**, if the General Assembly decides to go forward with implementation of electric industry restructuring.** Both the Minority Reports and the conclusion of "The Panel's Decisions and Recommendations" section address the timing and implementation of restructuring.
5. Public Participation. SB 98-152 states that the Panel's July 1 Draft Report shall be subject of **public hearings held at a minimum of five locations throughout the state.** The Draft was the basis for six public hearings held before the Panel reached its ultimate decisions in September and October. A total of 199 individuals spoke. One hundred and sixty-one speakers were opposed to restructuring. Twenty-one speakers favored restructuring. Seventeen speakers were undecided.

Panel's Decisions and Recommendations

The following section contains three parts. The first part contains **Statements from the Panel Members**. The second part addresses **findings on the sixteen issues** mandated to be evaluated. The third part addresses **Implementation and Timing** if the General Assembly decides to move forward with restructuring legislation.

Statements from the Panel Members

Panel Members prepared the following unedited statements for inclusion in the Final Report:

1. Opposition to Restructuring, signed by 17 Members

2. Endorsement of Restructuring, signed by 9 Members

3. A "Middle Ground," signed by 7 Members

4. An individual statement prepared by Karen Brown

5. An individual statement prepared by Eugene Packer

6. An individual statement prepared by James Spensley

7. An individual statement prepared by Phillip Tollefson

Keeping Electric Service Affordable and Reliable in Colorado

Retail Restructuring's Time is Not Here and Not Now

Majority Report

I. Introduction

The Colorado General Assembly established the Electricity Advisory Panel (the Panel) and tasked it with determining whether restructuring of the retail electric market is in the best interests of all Colorado electricity consumers and the State as a whole. In addition, the General Assembly has asked that the Panel address the manner in which restructuring should be implemented, including timing and implementation, if the General Assembly decides to go forward with retail restructuring of the electric industry in Colorado.

In summary, and as will be amplified in the following discussion, we believe retail restructuring is not in the best interest of Colorado and Colorado consumers. We further believe rates will increase, as demonstrated in the Stone & Webster and DRI Report,[*] for most Colorado consumers and the economy will be hurt, losing thousands of jobs. There will be winners and losers. We are concerned that the losers will be low income, rural, residential and small business consumers as well as rural communities and the

[*] The Panel selected Stone & Webster, for energy modeling, and DRI, for economic modeling, after the State conducted a competitive solicitation. This selection was made after industry experts independently evaluated the respondents and made their recommendation to the Panel. The group of industry experts that advised the Panel on selection of the contractor remained in place over the life of the study and provided Stone & Webster, DRI and the Panel with their independent and candid assessment of the issues and approaches that were taken in the conduct the study. Although there was little disagreement between these experts on the modeling assumptions and approach taken by Stone & Webster at the outset, after the output and the consequences were reported, some of these experts contended that the study approach and the study assumptions were incorrect. Stone & Webster vigorously defended its product; indeed, certain of its proponents believed that the study did not go far enough to demonstrate adverse consequences of retail restructuring—Stone & Webster ended up somewhere in the middle. The majority of the Panel members give credence to the Stone & Webster modeling outcomes and the resultant DRI impacts on the Colorado economy. These Panel members realize that modeling is just that, modeling. However, the information derived from the model, coupled with individual member's assessment and view of the future, provide a critical vantage point from which to opine on the merits of retail restructuring. The Panel members have taken the Stone & Webster/DRI results into account, along with advice from more than 50 other experts that have addressed the Panel and along with consideration of numerous other studies of the impacts of restructuring in various states, the region and the U.S. These results have been taken into account as the Panel members have applied their considered judgment about their relative merits and deficiencies of retail restructuring of the electricity market in Colorado.

economy of the State of Colorado. If, however, the General Assembly decides to proceed, we do identify key mechanisms absolutely necessary to protect consumers.

This Majority Report explains and supplements the "Statement of the Panel Majority in Opposition to Retail Restructuring of the Electric Industry in Colorado" and is generally supported by the Panel members that joined the "Statement" with the exception of one Panel member who has issued a separate report.

II. Is Restructuring In the Best Interest of All Customers and In the Interest of the State of Colorado?

Conclusion: The majority of the Panel strongly believes that retail restructuring—whether under the rubric of customer choice, open access, direct access, retail wheeling or retail restructuring—is not in the best interest of all consumers, classes of consumers and the State as a whole. We draw this conclusion now, believe it will hold true in the short-term, and believe that it may be the case in the long-term. Colorado's electric rates are relatively low in comparison to other states. In most states where retail restructuring has been adopted, high electric rates—and in many cases excessive rates—served as the catalyst for change. Such is not the case in Colorado.

Much more needs to be learned internationally and nationally about retail electric restructuring before anyone can say with confidence that even in the long-term retail restructuring will meet the public interest test in Colorado. The facts of our study over the last 15 months strongly bear this out. In addition, a substantial majority of the members of the public we have heard from over the last several months have resoundingly said NO—they have serious concerns and, yes, fear of the loss of reliable and affordable electricity, a necessity of life.

The Pocketbook Issue: The bottom line question for many members of the public and certainly of concern to members of the Panel was "Will retail restructuring save Colorado consumers money?" The Panel was established to answer this question as a key part of its study. The Panel conducted the most impartial, comprehensive and rigorous study of the Colorado electric industry that has been performed to date. This was also one of the most sophisticated and detailed studies conducted by any state in the nation as part of any investigation into the impacts of retail restructuring on consumer prices for electricity.

This independent study paints a very bleak picture of the economic consequences of retail restructuring in Colorado. It projects rate increases of up to an additional 29% (above the rates that consumers would pay without retail restructuring) if the State moves to retail restructuring. This projected increase corresponds to an average annual increase in the cost of electric service of $120 for residential households.[**] Moreover, the adverse rate

[**] Using 500 kWh of electricity per month.

impacts were also projected to result in a loss of 29,000 Colorado jobs, most of them in high paying industries.

Proponents of retail restructuring believe that competition always drives prices lower. While lower prices may be the result in some states where the current price of electricity is high, it will not be the case in Colorado and other states that have relatively low prices. This is true because prices under regulation reflect the average cost of existing and new generation supply. Due to technology, fuel source, vintage and depreciation, Colorado's existing generation supply is lower cost than the cost of new supply. In competitive markets, there is no averaging. Higher cost new supply will set the market-clearing price for all power. The higher cost of new supply is significant given that Colorado needs to add about 4,750 megawatts of new generation over the next 20 years. (Colorado's current statewide peak electric load is approximately 7,000 megawatts.) This results in even higher cost of electricity under retail restructuring as Stone & Webster projected.

The simple fact of the matter is that a recommendation to restructure the retail electric market in Colorado makes no sense to the members of the Panel endorsing this Majority Report, when to do so will likely increase, not decrease, consumer rates, will adversely impact the economy of the State and will not produce other tangible benefits in the foreseeable future.

Other Studies: Some of the Panel members in the minority disagree with the Stone & Webster and DRI projections. They point to a U.S. Department of Energy study (which in turn is questioned by other industry segments) that purportedly demonstrates that rates in Colorado, along with all other low cost states, will decrease with the advent of retail restructuring. This study was issued by the Clinton Administration to support its efforts to promote national legislation to restructure the retail electric industry. It is not a study of specific Colorado facts and the Colorado electricity marketplace and infrastructure. In our view the DOE study suffers from a number of fatal flaws, including: 1) it assumes no market power, a conclusion contradicted by Stone & Webster and other experts—the existence of which would allow Public Service Company of Colorado to significantly increase its rates in retail restructuring; 2) it assumes reliability levels almost one-half of the level that is currently required— we can ill afford decreased reliability given the near failure of Colorado's electric system in the summer of 1998; 3) it assumes that generators will not be compensated for their capacity; and 4) it assumes a significant automatic rate decrease on the day retail restructuring is implemented with no explanation of why or how that will occur.

No one has come forward and adequately responded to these criticisms of the DOE study. Finally, every other study that was brought to the attention of the Panel, including a U.S. Department of Agriculture preliminary study, demonstrated that rates in states such as Colorado were likely to increase under retail restructuring. The majority of the Panel strongly believes that the rate trends and economic impacts of the Stone & Webster and DRI studies are correct. At the very least, they raise serious public policy reservations with mandating retail restructuring.

III. Panel Conclusions And Public Perspective

The Panel was directed under SB 98-152 to assess a number of specific issues in addition to the overall question of whether retail restructuring of the electric market in Colorado is in the public interest and then to hear from the public on the issues. Other sections of the Panel's Evaluation Study Report address in detail the Panel's evaluation of and public comment on these issues. The Panel members endorsing this Majority Report identify the following points as further support for their conclusion that retail restructuring is not in the public interest. We believe the weight of the information presented to the Panel amply supports the following conclusions that mirror in several instances the specific evaluation issues the Panel was to assess:

- **Colorado's rates are reasonable when compared to other states on both a national and regional basis.**

  Colorado is one of the fortunate "low cost" states when it comes to electric rates. This is due in large part to Colorado's proximity to low cost, clean-burning coal resources and to the vintage and efficiency of Colorado's electric generating plants. New state of the art generation facilities are not competitive with Colorado's existing stock of generation; this translates into relatively low rates.

- **Rates are predicted to increase substantially for all consumers except for industrial and large commercial consumers under retail restructuring.**

  As reflected in the Decisions and Recommendations section of this Evaluation Study Report, the Panel strongly believes rates will increase significantly under retail restructuring, as noted above due to new higher cost generation that would set the market clearing price for all generation. Certain of the predicted outcomes could be even more extreme since Stone & Webster did not separately model and account for the fact that industrial and large commercial customers have the bargaining leverage to negotiate significantly lower rates than other consumers.

- **Low-income consumers are particularly at risk under retail restructuring.**

  Compelling information was presented to the Panel demonstrating the fact that low-income consumers would be particularly hard hit by retail restructuring. This information was confirmed during the Panel's public hearings as low-income consumers and their representatives voiced their strong fears and concerns about retail restructuring, often noting that they would be forced to choose between food and electric service and that they could be left in the dark and in the cold. Low-income consumers are being exposed to significant losses of funding that historically have supported their ability to obtain affordable electric and gas service. This low-income funding problem needs to be solved, whether or not retail restructuring occurs.

- **Rural rates will increase more than most, and rural communities will be hurt under retail restructuring.**

  Rural consumers and communities have been adversely and disproportionately impacted by the deregulation of other service industries. This adverse and disproportionate impact is again anticipated if the retail electric market is restructured. Moreover, the economic health and vitality of rural communities depends on the agriculture industry. Any increase in the cost of electric service or reduction in reliability could be particularly harmful to agricultural producers and related industries.

- **Jobs will be lost under retail restructuring.**

  The DRI study conducted for the Panel identifies a potential loss of 29,000 jobs in Colorado as the economic consequence of higher rates under retail restructuring**.**

- **Consumer protections will be threatened under retail restructuring.**

  Retail restructuring in electricity could have profound impacts on residential and small commercial consumers, who individually lack any market power. Without effective consumer safeguards, large commercial and industrial consumers may capture most if not all of any benefits at the expense of small commercial and residential consumers. These safeguards will not only require additional regulation, the implementation and enforcement costs associated with the safeguards will result in rates that are even higher than predicted in the Stone & Webster study.

- **Maintenance of the existing regulatory structure will not adversely impact renewable energy, energy efficiency and environmental programs.**

  Renewable energy, energy efficiency and environmental programs are expected to move forward under the existing system of regulation. There is no compelling evidence before the Panel that maintaining the existing regulatory structure will inhibit these programs.

- **Governmental taxes, fees and revenues may be jeopardized and tax administration and compliance will become more complicated under retail restructuring.**

  If retail restructuring is implemented, tax and fee revenues that support state and local government services may be substantially reduced and tax administration and compliance will become more complex. The loss of sales taxes, property taxes and franchise fees pose special problems for local governments.

- **Stranded benefits will result and should be returned to consumers under retail restructuring.**

  As the Decisions and Recommendations section of this Evaluation Study Report notes, the clear belief of the Panel is that there will be significant "stranded benefits" if the State moves to retail restructuring. Stranded benefits means the market value of Colorado's efficient generation resources under retail restructuring is higher than its book value. The situation in Colorado is unlike "high cost" states where the generation plants are more costly than market priced power, typically in those states where utilities were able to recover 100% of their stranded cost exposure. However, since there will likely be "stranded benefits" in Colorado if retail restructuring is mandated, the question then becomes "Who owns the benefits?" This is one of the most highly contentious issues in states that have restructured their retail electric market.

- **Maintaining service quality, universal service and protecting against loss of availability of Colorado's generation will be critical under retail restructuring.**

  Under retail restructuring, maintaining service quality and universal service while protecting against loss of availability of Colorado's generation resources are absolute imperatives and their continued necessity in varied forms under retail restructuring will raise rates. In a competitive electricity market, if a utility does not have an obligation to provide supply service, it can attempt to market its supply or sell its generation into other markets. If the profits or proceeds from such sales are not returned to ratepayers, then rates will increase even more than projected by Stone & Webster.

- **The fair deal utility employees currently enjoy will be jeopardized under retail restructuring.**

  Highly qualified skilled employees are critical to system reliability and service quality. The Panel agreed that utility employees would be adversely affected under retail restructuring. This will occur as restructuring promotes mergers and acquisitions that will result in additional downsizing of workforces with further jeopardy to electric service quality and reliability.

- **Effective coordination among Colorado's electric utilities will be threatened under retail restructuring.**

  Under retail restructuring, concern over real and perceived competitive advantages will pit industry players against each other—the same players that historically have cooperated to provide the efficient, safe and reliable electric system Colorado consumers enjoy today. Coordinated efforts to promote economically efficient infrastructure will be jeopardized and competitors will be reluctant under retail restructuring to help each other out for the benefit of all consumers as they have in the past.

- **New suppliers will pose new problems under retail restructuring.**

  Retail restructuring will invite new players into the marketplace, some responsible, others not. Retail restructuring experience in other states demonstrates the need to protect consumers from fraudulent marketing and advertising practices, and defaults on service obligations. Low-income, fixed income seniors, and other residential consumers are particularly vulnerable to unethical and illegal practices. Small electric systems are particularly vulnerable to defaults on service obligations.

- **Consumer-owned systems stand to lose some aspects of governance and decision-making under retail restructuring.**

  If consumer-owned systems (cooperatives and municipal systems) lose some aspects of local governance and decision-making, rates will rise, availability of universal service may be eroded and rural impacts will be heightened. Local Boards and Councils of consumer-owned systems are in a far better position to protect consumers and the system from adverse impacts.

- **Market power of one utility in Colorado will emerge under retail restructuring.**

  Currently Public Service Company has control over approximately 2/3rds of the available supply of power in Colorado and almost 80% in the transmission constrained front-range area (including Denver-metro). With this "horizontal" market power, Public Service Company has the ability to take unilateral actions that will result in higher rates for electricity supply and higher returns to the utility. With the exception of Montana, in no other state implementing restructuring has one utility held such overwhelming degree of market dominance. It is extremely unlikely that new transmission will be built to bring other sources of power into the area without an extraordinary assurance of recovery of capital investment. It will take some time for new generation, not owned or controlled by PSCo, to be built that would substantially change its market power.

- **The market is not mature enough to support retail restructuring.**

  The wholesale electric market in the Rocky Mountain region has not matured as a fully functioning fluid market. Certain transmission issues remain to be resolved. Until the wholesale electric market matures and federal transmission issues are resolved, it is unclear what form of a retail market will make the most sense in the region and for Colorado.

IV. What we have learned and what is important to keep in mind when deciding whether retail restructuring is beneficial to Colorado.

- **How the electricity market works**

  - **The laws of physics**

    Electrons flow over the transmission grid and distribution lines according to the laws of physics, irrespective of what Colorado or any state attempts to do. The electricity market is defined by the placement of generation and transmission and the customer demand centers. The legal structure that is interposed over the physical market cannot create a market. It can help define market structure, but laws of physics, technology and economics define electric markets.

  - **The regional market place**

    Colorado's electric market operates primarily within a regional market that operates under federal regulation for a significant portion of the market—the bulk wholesale electricity market—and a local market that is often under local regulation. The front-range area (including Denver-metro) suffers from what is known as transmission import constraints. Due to the limited available capacity of the existing transmission system, power cannot readily flow into this area from outside as it is needed. These physical limitations will necessarily restrict the development of the generation market if Colorado were to choose some type of retail restructuring. Significant amounts of transmission were built by consumer-owned utilities and the federal government to transmit power to consumer loads from generation stations located close to fuel sources not load. The State's principal investor-owned utility built its generation close to its consumer loads, not fuel sources, and did not build significant amounts of transmission away from electric load.

  - **Effective Competition**

    One of the key questions addressed by the Panel was: "Can there be 'effective retail restructuring' in Colorado?" The majority of the Panel believes that currently the answer to this question is: No. Regional, multi-state players dominate the electric market. The wholesale market is in significant transition since the 1992 Energy Policy Act (EPAct). Pending and recent FERC pronouncements are attempting to implement that federal policy. If states attempt to define retail markets without a clear picture of the wholesale markets, they will get it wrong. Colorado needs to know much more about the nature of the regional wholesale electricity market before it moves to retail restructuring.

- **Lessons and observations from retail restructuring elsewhere and in other industries**

  - **The UK and other nations**

    The U.S. experience and push for retail electric competition was largely instigated by the efforts in the United Kingdom and, to a lesser extent, New Zealand. Each of these countries has proceeded through one round of electric market restructuring and has concluded that the benefits of "round one" went to the industry players and not to consumers. Both countries are now entering into the second round of retail restructuring with an attempt to ensure that consumers realize benefits. Severe price spikes were encountered in the UK under "competition." Power quality was severely degraded in New Zealand—with Auckland going without power for several weeks. Unprecedented price spikes and power quality degradation are now emerging in the U.S.

  - **Other states**

    Of the states that have adopted some form of restructuring, only four (California, Pennsylvania, Massachusetts, and Rhode Island) have actually implemented retail restructuring for 100% of their consumers at this time. The market structure of each of these states dictates that these markets are not competitive for 100% of the consumers of those states, let alone for a significant percentage.

    Retail choice is at best an experiment in the U.S. Currently, of the four fully "open" states, based on "body counts" to date, only 2.5% of the customer base has opted for competition. If commercial and industrial consumers are removed from the mix, only 2% of residential consumers have elected an alternative provider. For example, in the California market that has been "open" the longest, only 108,000+/- out of approximately 11,000,000 residential consumers have chosen a different supplier. The response to date has been so disappointing to many large marketers that they have withdrawn from providing service to the residential market in some states. This has resulted in the "re-regulation" of energy service offerings, called standard offer or provider of last resort offerings or "price to beat" offerings of incumbent providers. Some of the "bullish" legislatures that have adopted retail restructuring have put strings on that adoption and will pull back restructuring if competitive markets do not develop.

  - **"Deregulation" of other industries**

    For consumers, and particularly for low income and rural consumers, the lessons of deregulation in other industries—airlines, bus transportation, rail, trucking, telecommunications—demonstrate that there will be winners and losers. In telecommunications, for example, long distance telephone competition has been in place for over 15 years. We still do not have local competition in telephone service in many parts of Colorado, even though the first State efforts in that direction were over 12 years ago. And the lesson of telecommunications has been a shift of costs from long distance service to local service and degradation of local

service. Certainly, much has been made of Colorado's delays in deregulating branch banking and losing bank headquarters to other states. If you embrace this analogy, you would be left to believe that Colorado's largest electric utility would headquarter in some state that has adopted retail choice. Well if that is the case, PSCo/NCE/Excel's worldwide headquarters would be in Amarillo, Texas, not Minneapolis.

- **What is Consumer Choice and what it means for the electric industry?**

  - **Simple world, not so simple solutions**

    In a simple world there are simple solutions. Customer choice in the form of retail restructuring oversimplifies what is at stake in restructuring of the retail electric market. Much is made of the concept of consumer choice. Yet if you ask most consumers, what they want is choice of product, not choice of supplier. When we buy clothing, the key for most of us is how it looks and feels, the type of cloth, where and how it was made, price, etc. Granted there are some who will only buy up-scale brands, but that is dependent on brand name recognition and a willingness to pay the price. For the electric market there is no significant brand name recognition to date although companies are attempting to create such recognition. Consumers who say they want choice typically talk about attribute, not company. Attribute choice is value based, whether that is primarily a matter of price, or consumer friendliness, or environmental characteristics, or other bases. In the absence of brand name recognition and customer loyalty to that name, what is important is giving customers choice of service and product, not choice of company. Utilities are currently offering choice of products and will continue to offer more products as experience is gained and consumers' desires are expressed.

V. Measures Critical To Any Restructuring Effort

The Panel members adopting this Majority Report recognize that SB 98-152 requires them to advise the General Assembly of the manner in which retail restructuring of Colorado's electric market may be implemented in the event the General Assembly decides to proceed despite the strong belief of the Panel majority that retail restructuring is not in the public interest. The manner of implementation and timing issues are addressed in a separate section of the Panel's Evaluation Study Report and we do not intend to repeat that discussion here. However, there are certain critical measures, above and beyond those contained in the Decisions and Recommendations section of this Evaluation Study Report which we believe are essential to the public interest and must be thoroughly considered and incorporated in any retail restructuring policy decisions. These critical measures include the following:

- **System Integrity and Reliability**

  Besides determining who will be winners and who will be losers in retail restructuring, the most fundamental issue the General Assembly will face if it decides to proceed with

retail restructuring will be how to maintain system integrity and reliability. As we have addressed in other sections of this Majority Report and the Statement in Opposition to Retail Restructuring, this problem is now emerging even without retail restructuring of the electric market in Colorado. However, these shortfalls will be even more pronounced if the State moves to retail restructuring. It is essential that adequate capital be invested in new generation and distribution, if not transmission, in the market over the course of the next ten years.

Recommendations to Protect System Integrity and Reliability if Retail Restructuring is Legislated—Elements Which Should be Considered by the Public Utilities Commission, within its jurisdiction, even if the State does not move to Retail Restructuring

- Promote true wholesale competition for new sources of generation that are needed for IOU ratepayers in Colorado without exacerbating market power.
- Mandate continued investment in basic electric quality of service infrastructure.
- Encourage utility offerings of different portfolios of resources, some price based, some attribute based, some under the consumers' control, etc.
- Expand use of performance-based regulation for investor-owned utilities.
- Mandate reserve requirements.

- **Market Power**

  The Panel did not reach any specific conclusion on how to deal with Public Service Company's market power other than to acknowledge that it is a severe problem and retail restructuring should not result in an unregulated monopoly in the Colorado electricity market.

  Recommendations to Mitigate Market Power if Retail Restructuring is Legislated

  - Public Service Company should be required to sell or relinquish control of the majority of its generation to at least three or more suppliers state-wide, or four or more suppliers in the front-range area (including Denver-metro), so that, as the case in Texas, no one supplier would own or control more than 20% of the generation in Colorado that is dedicated to supplying Colorado consumers.
  - Strict separation of functions, standards or codes of conduct between IOU regulated and unregulated lines of business, should be required.

- **Stranded Benefits**

  Consumer rates today in Colorado include "100% of the stranded benefits." In the event of "stranded costs" the utility would want 100% recovery.

Recommendations to Recover Stranded Benefits if Retail Restructuring is Legislated

- 100% of stranded benefits should be retained for ratepayers benefit (netting of any "legitimate" stranded costs, such as the Air Quality Improvement Rider on Public Service Company's retail rates to recover for emission reductions in its Denver Metro plants).

VI. Conclusion

Little is known about the appropriate market structure for the retail electricity market in Colorado and the Rocky Mountain Power Area. Until more experience is gained in other states and the regional wholesale market matures, it will be difficult to determine the best retail market structure and mechanisms to direct market behavior. The price spikes in the Midwest and California in the summer of 1998 and recurring spikes and outages in the summer of 1999 are illustrative of the current lack of knowledge about how the wholesale electric market will work, much less what the appropriate retail market structure is for Colorado.

Policy makers must be aware that a mandate to implement retail restructuring of the electric market in Colorado will lead directly to rate increases for most consumers. Low income and rural consumers have yet to move to the winners' column in deregulation of other infrastructure industries. Electricity is an essential service industry, more so than any other infrastructure industry that has been deregulated. Consumers cannot and will not do without electric service and will not accept increases in prices and diminution of quality in the name of choice. Members of the public presented this message to the Panel over and over again during the course of the public hearings. For all of the foregoing reasons, we believe that restructuring of the retail electric market in Colorado is not in the interest of all classes of consumers and the State of Colorado.

(This concludes this Report.)

Customer Choice: An Idea Whose Time Has Come
A Report of Colorado Electricity Advisory Panel Members[5]
in Support of Customer Choice in Electricity
INTRODUCTION

Customer choice, sometimes called "electricity industry restructuring" or "retail competition," means consumers can choose their electricity supplier, rather than being forced to buy from only one suppler. The electricity industry has historically operated under a different set of rules than private enterprise.

Monopolies with exclusive service territories provide service to retail customers in a way that "bundles" generation (supply) with the transmission and distribution (delivery) of electricity. State regulation (for investor-owned utilities) or the utilities themselves (electricity cooperatives and municipally owned utilities) set prices charged to consumers, and consumers are given no choice of suppliers for any of these services.

"The electric power industry is a vital cog in the U.S. economy. Over the past 25 years, changing conditions have made it increasingly difficult for well-intentioned regulators to emulate the effects of competition. The time has come to unleash competition. If regulation ever was the right way to organize electricity production and consumption, it is no longer."—Customer Choice, Consumer Value, Clemson University

Monopolies made sense when the electricity industry was in its infancy. Utilities were local operations, and generation plants were close to the cities and towns they served. But today's electric industry is dramatically different.

The Reasons Behind the Customer Choice Movement

Sweeping changes have transformed the electric utility industry. Electric systems throughout the Western US are now better interconnected. Improvements in technology and efficiency have challenged past economies of scale in generating power. Natural gas supply, once highly regulated, has become competitive. Wholesale electric markets have been opened to competition. New electricity suppliers have emerged in increasing numbers.

An Edison Electric Institute (EEI) study found 76 percent of U.S. consumers favored competition. A September 1999 survey by Americans for Affordable Electricity confirmed these results, finding 82 percent want the ability to choose their electric supplier. Colorado results are similar: 46 percent felt favorably or very favorably toward restructuring (vs. 28 percent unfavorably or very unfavorably) in a recent National Renewable Energy Laboratory study, and more than half the respondents in a MetroCaring study favored competition.

At the same time, generating monopolies and government regulation are increasingly seen as less economically efficient than the forces of free enterprise and competitive generation markets. American consumers prefer choice and do not want to

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, Ronald Lehr, Richard Lewis, Chuck McCulloh, James Spensley, Robert Williams.

be forced to buy from only one supplier of a product. Other industries (such as computers or wireless telephones) are generating better and more customized products and new service offerings wherever competition has flourished.

Most in the public interest community (environmentalists, consumer advocates and other diverse groups) concede that, if properly implemented, customer choice in electricity produces a wide range of benefits in addition to lowering prices. These include new investments, improved technologies and more services than continued generation monopolies are likely to produce. As a result, preserving electric supply as a monopoly is no longer necessary or desirable when compared to the benefits that can come from harnessing the forces of competition.

Under retail competition, consumers will be allowed to choose their electricity supplier. Suppliers will compete to offer consumers better products at better prices. Access to the electricity transmission grid will be opened to all, including retail consumers and competitive electricity suppliers making retail sales directly to consumers. However, the electricity distribution system will continue to be subject to monopoly service territories and state regulation to ensure delivery remains reliable and that all electricity producers and consumers, rural and urban, receive electricity distribution service at fair prices.

The Growing Momentum Towards Competition and Customer Choice

In recent years, state legislators across the country have become convinced of the benefits of moving their states' electricity power industry towards customer choice and competition. As of October 1, 1999, 23 states already were already committed to customer choice, representing over 60 percent of the nation's population.

The states that have restructured are already reaping cost savings of 5-15 percent. In addition to competitive prices, states with customer choice are also seeing an influx of investment, technological and market innovations, more choices for all consumers, improved reliability and a broader mix of available resources, products and services.

A recent nonpartisan study of five deregulated industries by the Brookings Institution and the Center for Market Processes found that in "each of the five industries, prices paid by customers fell significantly as a result of deregulatory reforms." Economic Deregulation and Customer Choice: lessons for the electric industry (1997).

Colorado is the highest-priced of the five remaining Western states without customer choice (the others are Wyoming, Utah, Idaho and Washington). We are losing any regional economic development edge we may have once held in electricity rates. This is especially bad news for rural Colorado, which has not shared equally in the recent economic prosperity of the urban Front Range, since it is served by relatively higher-priced utilities like the rural electric associations (REAs). A table detailing the rates of all of Colorado's utilities is attached to this report.

The Status Quo Monopoly System is Flawed

While competition alone cannot solve all Colorado's energy problems, particularly during the transition from monopoly regulation, it represents a major improvement over the status quo. With appropriate policies in place to assure such objectives as reliability, choice for small and low-income consumers, and environmental protection, competition can deliver significant benefits throughout the state.

The current monopoly system is poorly suited for the challenges that lie ahead for Colorado's electric industry. Undisputed forecasts show that Colorado needs to acquire 4,750 megawatts—enough new resources to power two cities the size of Denver—over the next 15 years.

> *"In general, restructurings improve economic efficiency because they grow directly out of opportunities to lower costs… (and) usually result in improved incentives for efficient behavior that will bring additional pressures to lower prices. Therefore, restructurings generally hold the promise of overall benefits for the economy."* – Energy Information Administration, *Natural Gas Monthly*, May 1997

Uncertainties linger over access to and pricing for use of the transmission grid, the timing of customer choice, recovery of potentially strandable costs, and when and how to invest in generation and delivery facilities. These questions make it difficult for Colorado utilities (and independent power producers) to make the long-term investment commitments needed to ensure a reliable and robust power supply system.

By setting the rules of the competitive road now, key investment decisions central to Colorado's future can begin. New investment is already flowing into states where the competitive rules are in place. For example, customer choice legislation was passed only a few months ago in Texas and already nearly 20,000 megawatts of new power plants have been announced or proposed, roughly twice the amount of new power supplies needed in that state.

The Results and Benefits of Customer Choice

Today, when we buy a TV, stereo or car, we have options. If we are in a business, we can choose our office space, computers and overnight mail services. One essential purchase for which there is no choice is the electricity that runs our TV, stereo, computer and lights in our homes and offices. We have no choice in suppliers or control over the cost of electricity because Colorado law requires us to take service from a single monopoly provider.

> *"What I like to say is that [under electric competition] we are playing the game on the right side of the fence, that is, we are not fighting rate increases. Instead we are talking about how much rates should be reduced." – I.A. Popowsky, Pennsylvania State Consumer Advocate*

Competition and choice, properly implemented, can benefit consumers with lower prices. Where genuine competition still has not been achieved, such as in local telephone service, Colorado consumers are becoming increasingly frustrated over service quality and price.

On the other hand, where meaningful competition exists, it has brought significant economic benefits to consumers. For example, in long distance telephone services consumers have experienced a 40-47 percent rate reduction between 1984 to 1994. Natural gas rates dropped 27-57 percent during the same period. In just these two industries combined, consumer benefits amount to nearly $10 billion nationwide. These benefits have gone to all customer classes and to both rural and urban customers. With these lessons learned, we can move to achieve comparable savings in the electric industry even more quickly.

Customer choice in electricity will likewise save Colorado industrial, commercial and residential consumers many millions of dollars each year. These savings will enhance the competitiveness of the Colorado economy and the well-being of homeowners, manufacturers and small businesses.

"As retail energy choice spreads, the benefits to customers are also becoming increasingly evident. In areas where major activity is occurring… customers are saving on average between five and 15 percent off their utility bill."—Cambridge Energy Research Associates

As the competitive retail electricity market develops, prices fall. This has been demonstrated in real-world results, first in the international arena and now across the country in states that have introduced competition. For example, in Norway customer bills dropped more than 20 percent after the market was opened to competition. In Montana, where prices were already lower than in Colorado, rates have declined by 10 percent (or more for some consumers) since retail competition was permitted. The results in Montana match those in other customer choice states where consumer savings of 5-15 percent are now being achieved.

"…The actual track record with deregulation…reveals not only no impairment to reliability, but overall improvement in reliability, increased benefits to retail consumers and lower prices.... The benefits of deregulation include enhanced product diversity, commercial innovation and financial innovation…" –Robert Levin, Senior Vice Pres., New York Mercantile Exchange

A recent U.S. Department of Energy (DOE) report projected that, if customer choice were in place, Colorado's average price for all customers would drop 19 percent, with residential consumers enjoying nearly a 21 percent price reduction. Indeed, a majority of the Colorado Electric Advisory Panel agreed that prices would decrease under competition for large businesses, even though that opinion contradicts a key conclusion reached by the Panel's consultant, Stone & Webster.

The much-disputed Stone & Webster model predicted prices would rise with competition, which is inconsistent with both common sense and real-world results. Model results are only as good as the assumptions on which they are based, and they have been notoriously incorrect in predicting energy prices over time.

The Stone & Webster model compared an unrealistic "perfect" version of the present system (e.g., assuming all power plants work together under the control of a single perfect operator) against a version of competition that assumed artificially high prices that include unrealistic costs. The model's results are far less meaningful than the consumer savings of 5-15 percent actually being achieved in other states that have moved to competition.

Lower retail electricity prices would mean Colorado consumers—individuals and businesses—could have more money to spend on other goods and services, generating new jobs and investment. Customers do not pay just for electricity they directly use. They also pay indirectly for electricity used to produce the goods and services they buy, so consumers can benefit twice when Colorado has competition in electricity supply.

Even the smallest residential consumers can benefit from competition, if properly implemented. With appropriate public policies, small consumers can gain meaningful opportunities to select their electricity supplier and to combine or aggregate their electricity needs with other consumers, such as a neighborhood or community.

Aggregation enhances bargaining power, just like the combination of small investors in mutual funds. A subdivision, apartment building, church or membership organization such as the AARP could purchase competitively priced electricity directly from suppliers.

"Some commentators argue that competition will allow large industrial customers to exert their influence and obtain rate reductions at the expense of residential customers. (However) true competition will drive prices down for each class of customers, residential customers included. In fact, since the size and negotiating strength of many large industrial users has already brought them lower rates in many cases, the best hope for the medium-sized and residential consumer is competition." –Professor Raymond D. Sauer, Dept. of Economics, Clemson University

In Montana, associations of retail grocers, hospitals, school boards and municipalities already are banding together to purchase electricity through aggregation. In other states with customer choice, farmers and food processors, churches and other groups are aggregating their loads to purchase electricity. Similarly, individual residential customers can also benefit from selecting brokers, aggregators and marketers who can combine their loads to obtain lower prices.

"The introduction of retail competition is projected to lead to lower electricity prices for consumers. Among customer classes in 2010, residential buyers are projected to see the largest price decreases with retail competition. "

—Office of Economic, Electricity and Natural Gas Analysis, US Department of Energy, May 1999

For example, in 1996, the towns of Black Creek, Lucama and Stantonsburg, North Carolina, with almost entirely residential loads, aggregated their energy needs and purchased power on the open market. Doing so allowed them to cut their electric costs significantly.

According to the congressional testimony of Virginia Johnson of Lucama, "in Black Creek, an electrical contractor [who] employs approximately 35 people recently relocated to the town due, in part, to lower electric rates. In Lucama, many residents are senior citizens that often live on Social Security checks alone. The 25 percent cut in the town's electric rates means that these senior citizens and other town residents will [collectively] save over $300,000 per year."

Competition allows electricity suppliers to offer new services to residential customers. For example, several utilities and AT&T have already developed an automated meter reading system that will tell customers how much they are paying by the hour so they can use appliances when they are cheapest to run.

Under customer choice, electricity suppliers are offering a host of customized options based on time of use, quality of frequency and voltage control, type of fuel source, credit terms and service plans. An overwhelming majority of the Panel agreed that "the availability of value-added products and services provided by energy service competitors – such as appliance repair, surge protection and home security – benefit consumers."

In Montana, residential consumers can buy "weatherproof" service providing a guaranteed bill amount no matter how cold the winter. Consumers can also consolidate their electricity bills with those of other utility services such as gas, water, cable television, telephone or home security. Energy suppliers also are marketing complete energy solutions, highly efficient appliances and new technologies to satisfy customer needs.

"A reduction in energy costs could spur economic development in depressed inner cities. Second, urban churches, nonprofit and community groups can aggregate to form large buying pools and gain the clout to negotiate for lower electricity rates. The current regulatory regime for the electric industry is welfare for the rich. We need to end it. We need to make everyone compete."

-- Ricardo Byrd, Executive Director of the National Association of Neighborhoods

Low-income consumers, like other residential consumers, will enjoy the benefits of lower electricity prices achieved by properly implemented competition, including opportunities to receive new products and services by joining power purchasing cooperatives. Unlike the present system, the competitive market looks for solutions to allow consumers to know electricity costs before

they use it (as with prepaid telephone calling cards), rather than after the bill arrives. In addition, low-income consumers will benefit from a stronger economy's job opportunities and cheaper goods and services, as well as from the continuation of low-income support programs.

Consumers who wish to remain with their utility and forego new choices would still share in the benefits of lower rates and new services. Competition will drive utilities to lower costs and improve service. The experience in the long-distance telephone market provides an apt model. Many customers who have remained with AT&T still reap the benefits of competition through lower prices, more services, technological advances and higher quality just as all shoppers in a grocery store benefit from lower prices, not just those who comparison shop.

"Nationwide," says Michael Vanairsdale of the Fulton County (Georgia) Board of Education, "K-12 public schools spend about $4.25 billion each year on electricity. If we could save 15 percent each year through deregulation, the result would be a nationwide savings of more than $635 million annually which local districts would be able to spend to address their classroom needs."

Schools, universities, hospitals, communities and all levels of government can take advantage of customer choice for electricity, reducing expenses and allowing reallocation of tax dollars. Lower electricity costs for universities, school districts and government also reduces the overall tax burden on citizens and communities.

A National Taxpayers Union study shows competition could slash federal costs by $67 billion over five years. The American Association of School Administrators believe that customer choice will not only reduce utility bills (a school's second largest budget item after personnel costs), but also allow schools to channel those savings back into the classroom.

The Chicago Housing Authority (CHA) has been able to save substantially as a result of competition. When natural gas was deregulated, the CHA began purchasing the commodity from the wellhead. Since 1988, the authority has saved $73 million—half the funds were returned to taxpayers and half retained by CHA. With choice in electricity supply, the agency estimates it would save $4-5 million annually, retaining half of that sum for further improvements to its housing units.

Pennsylvania hospitals and schools are seeing dramatic results under competition. The Hershey Medical Center is saving $350,000 annually, while the Milton Hershey School's electric savings total 32 percent per year.

"Bringing customer choice to electricity is one of the few ways to painlessly reduce the (federal) deficit while making consumers better off."—David Keating, executive vice president, National Taxpayers Union.

Customer choice in electricity could spur economic growth and diversification, create jobs, increase the state's competitiveness significantly and reduce the cost of doing business in Colorado. Companies in Colorado increasingly compete in national and international markets on very tight margins. The only way a company can truly hope to remain competitive is by lowering its costs of production. Electricity can account for more than 60 percent of production costs in some industries, but remains the most important cost Colorado manufacturers are unable to competitively obtain.

Customer choice in electricity is also a powerful economic development tool. At a time when more and more companies are choosing to locate abroad, the cost of electricity represents a key factor for companies to consider when selecting where to locate and invest. One obvious conclusion to be drawn from the Panel's report (by consultant DRI) on the state's economy is that as electric prices go down, Colorado gains jobs.

> *"Due to the excessive cost of electricity in this area, many people have lost their jobs simply because the businesses or factories they worked for were forced to close their doors or relocate to another area where the cost of electricity was more reasonable. Local people are forced to drive great distances daily for employment."*
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> *--F. Jane Toepfer, Chicago, in Congressional testimony, May 2, 1997.*

Now more than ever, states compete to provide the most favorable business climate. To remain an island of regulation amidst a sea of competition is not risk-free—lost opportunities and the lead-time required to make the transition to competition (once that decision is made) cannot be fully recovered.

Montana has used customer choice in electricity to attract and retain key businesses and employers like Montana Resources and Advanced Silicon Materials (ASM). ASM characterized its ability to achieve a competitive market rate for electricity as a "decisive" factor in locating in the state. Similarly, based on the immediate opportunity for customer choice, Amtrak recently chose to locate facilities in Pennsylvania rather than in Maryland.

Since industry is attracted by low electricity rates, almost every state is considering implementing some form of customer choice, following the successful pattern of regulatory reform implemented in other industries. As other states, including lower-cost Western states like Montana, continue to attract new investment associated with restructuring legislation, Colorado risks missing important economic development opportunities due to its delay in opening its electricity market to competition.

In many cases, Colorado companies are considering building their own power plants or relocating product lines or plant investments to states with lower rates. Industry no longer needs to view electricity as a non-negotiable cost of doing business; it is a commodity they can generate themselves or purchase for less from another utility or power supplier. Other factors being equal, a company will expand its operations and employment and make investment choices to modernize or build facilities where it can minimize costs by choosing from competing electricity suppliers.

Under current law, Colorado companies seeking an alternative to buying power from their monopoly supplier must generate it themselves on their business sites. This precludes environmentally preferable sites and the greater efficiencies that could result from using existing power plants and transmission lines belonging to another utility or power producer.

Customer choice has benefits for rural Colorado. If REA customers were provided a choice of electricity suppliers, competition could provide an avenue to reduce rural Colorado's relatively higher electricity costs. This would allow areas outside the Front Range to more fully share in the state's economic prosperity.

Competition and resulting innovation are the best equalizers to reduce the economic disparity between rural and urban areas. For example, in Arizona, consumers can sign up with an Internet-based energy service provider who offers a guaranteed 10 percent savings on electricity, a signing bonus, a variety of billing and payment methods, and a chance to monitor and manage their energy use online—regardless of the consumer's physical location in the state.

Currently and historically, the largest investments and electric loads in rural Colorado have been dominated by natural-resource-related industries that must locate where agricultural, mineral or recreation resources are found. Lower electricity prices made possible by customer choice would make rural Colorado more attractive to a broader range of industries and help offset natural disadvantages created by such factors as higher transportation costs and distance from expanding population centers and markets.

"Competitive markets will bring benefits to all customers—both urban and rural… Prices will become more competitive, choices will increase, and utility companies have and will become more innovative… Our customers will and have already benefited from competitive markets in other areas of the energy industry… Electric deregulation will add value for our customers."—Gene Argo, President and General Manager, Midwest Energy (rural energy cooperative, Kansas)

The benefits do not accrue only for industrial development—farmers and ranchers would also benefit. For example, a pilot program in New York involved more than 7,764 farmers and 303 food processors. The aggregator, New Energy Ventures, operated the

program for a year; during that time, participants saved between 9-15 percent on their electricity bills. "We support the deregulation of the electric industry," says Paul McDowell, Associate Director of the New York Farm Bureau.

Customer choice would allow Colorado to take better advantage of its abundant low cost native resources like coal, natural gas, wind and solar energy. Development of Colorado's fossil and renewable energy resources would be of particular benefit to the rural areas of the state. However, the economic investment and business opportunities presented by increased electricity competition and development of new electricity generation resources in Colorado will ultimately be lost to neighboring states if Colorado continues to delay restructuring its electricity industry. A competitive market would expand the state's use of renewables.

The competitive market, if appropriately structured, can lower costs, improve environmental quality and diversify the resource mix. New technologies in energy efficiency, renewable resources, distributed generation and environmental quality can all benefit by properly implemented competition. For example:

Energy Efficiency. The goal of energy efficiency or demand-side management is to replace the need for new generation by improving the efficiency of lighting, motor drive and temperature control equipment. In a competitive generation market, any supplier of energy efficiency or conservation products and services would be allowed to freely market those products and services to any end user. End users would be encouraged to become more efficient by innovative rate forms – like real time pricing – and improved metering and controls.

Competition would encourage the marketing of products and services that promote efficiency and are tailored to customers' needs. Competition would also give marketers an incentive to sell more than just electricity, including energy services like efficient lighting, innovative building design and heating, more informative metering, and energy controls that respond to changing prices. During the transition to fully competitive markets, however, energy efficiency improvement programs should be maintained and expanded.

Renewable Energy. Customer choice can help create powerful new incentives for companies to supply electricity generated by renewable resources, such as wind or solar energy, which produce little or no pollution. The experience with customer choice to date indicates considerable public enthusiasm for and growth of renewable energy sales through "green marketing." A 1999 National Renewable Energy Laboratory study found similar results in Colorado: 76 percent of respondents were willing to pay an extra $1 to $10 per month for electricity from renewable sources. The competitive marketplace can and should offer these choices and clear the voluntary customer market for renewable resources at current prices.

Increased demand for such services will ultimately increase the long-term viability of renewable energy. The trend toward lowered cost for renewable resources could

be further encouraged through economic development policies emphasizing job creation, local supply of renewable technologies and services and rural economic development.

In a competitive market, many expect power marketers to hedge against fuel price and environmental risks by diversifying their generation resources to include more renewable energy. Such diversification could perhaps more quickly be achieved by setting a voluntary target for renewable resources (e.g., as a percentage of total generation capacity).

In addition, some states that allow customer choice, such as Texas and New Mexico, provide for renewable energy programs through a system benefits charge (SBC) assessed on electricity providers. In Colorado, a portion the SBC could be devoted, as needed and appropriate, to research, development and demonstration of renewable technologies, products and services. During the transition to fully competitive markets, existing programs to promote renewable resource development should be maintained and expanded.

Environmental Protection. Competition would not affect existing environmental protection laws such as those that regulate emissions. However, public policies will be needed to ensure that the transition to competition does not result in loss of the air quality improvement and emission reduction benefits associated with prior utility investments. Competition should pave the way to more technological improvements and efficiencies, improved energy conservation efforts and increased use of renewable sources of electric generation.

Planning for Power Plants. The long-term planning process will also improve when electricity generators, subject to market forces, only build power plants actually needed and only at costs customers are willing and able to pay. Like other businesses, they will bear the risk of the power plants they own and operate, as well as any changes in environmental laws. Environmental protection and energy efficiency will be achieved at a lower cost to society, and continuing regulatory oversight by the PUC will alleviate reliability concerns.

The Transition: A Path to Customer Choice

The issues to be resolved in the transition to customer choice include such considerations as timing, stranded costs, consumer protection and taxes. Solutions have been developed all across the country to these and other issues raised in the transition to customer choice. Colorado can pick the best solutions from among the many being implemented in the 23 states that have made the commitment to allow customer choice. The next step for Colorado is to move forward with customer choice by beginning the transition to competition.

Now is the time for Colorado to act. Delaying the inevitable move to competition will cause increasing problems and uncertainties for power plant investments, raising the risks of power shortages as Colorado's demand for electricity grows exponentially.

Any potential federal mandate for customer choice will likely grandfather only those states that have previously enacted legislation with their own state-specific approaches and solutions. Meanwhile, as time passes, Colorado loses more and more ground to its regional neighbors who already can offer competitive prices, enhanced investment environments, better value and more wide-ranging products and services to prospective consumers, employers and investors.

"Introducing competition to the electricity industry will save American consumers $20 billion a year and give them choices about where their power comes from and how it is produced. Just as people can choose a phone company, they should be able to choose a power company."— US Energy Secretary Bill Richardson, testifying before the Senate Energy and Natural Resources Committee, 1998

A BLUEPRINT FOR CUSTOMER CHOICE IN COLORADO

The concerns identified by the Colorado General Assembly in Senate Bill 98-152, and further considered in the work of the Electric Advisory Panel, already have been addressed and solved in state after state across the nation. None of the issues raised in Colorado are new, and some possible solutions and approaches are addressed in the following blueprint for how customer choice should be implemented in Colorado:

A. Key Elements of Colorado Customer Choice

1. As of a specified date, competition and customer choice will apply to power generation and electricity sales; eventually, as the industry evolves, competition and customer choice also should apply to metering, billing, collection and customer services.

Under the present monopoly system, a vertically-integrated utility provides all utility services to retail customers. While customers can choose equipment and how much electricity to use, customers have no choice of electricity supplier, and the utility provides all of the following:

- Electricity Sales
- Metering, Billing, Collection and Customer Services
- Distribution
- Transmission
- Electric Power Generation

Under retail competition, these services must be "unbundled," and three of these services - electricity sales; metering, billing, collection and customer services; and electric power generation - will be provided by competitive companies. While in theory, all such services could be made competitive at the same time, competition in metering, billing, collection and customer services could be phased in at a later time to facilitate a smooth transition. The local electric utility will maintain regulated transmission and distribution functions.

2. Universal Service must be ensured, and local distribution service, safety and reliability will still be regulated.

The local distribution utility must ensure universal service through "Standard Offer" service, via competitive bidding or otherwise, for those customers who do not choose an electricity supplier, who require temporary service or for whom service is otherwise unavailable. In the event a new supplier fails to provide electricity, a consumer should be allowed to return to the default provider and must not be left without power.

The distribution (delivery of electricity) function will remain regulated. Colorado must continue its policies of exclusive monopoly service territories, a utility obligation to connect its end-use consumers to electricity suppliers, PUC oversight of safety and reliability and economic regulation of prices. In addition, nondiscriminatory open access to distribution facilities must be assured.

3. Competitive Energy Service Providers ("ESPs") will provide electricity and an array of customer services to end-use customers. Consumers will be protected by a Customer Bill of Rights.

Energy Service Providers will compete for end-use customers. ESPs will generate power or purchase wholesale power from generators and from a wholesale power exchange. They will contract with the transmission and distribution company to deliver that power to end-users through its system. ESPs will have a direct customer relationship with the end-users. Eventually they may provide such services as metering, billing, collection and customer services.

To ensure that customers are protected in this new relationship, all ESPs must comply with a "Customer Bill of Rights." Such consumer protections must include: universal service and a designated default supplier; opportunity for load aggregation; licensing and supplier standards; rules against discrimination and unauthorized switching of service ("anti-slamming rules"); required disclosure of comparable pricing, fuel source and environmental performance; liability for fines; and PUC dispute resolution.

4. To develop a competitive supply market, the transmission and distribution utility's power generation will be transferred to a competitive company (either an affiliate or an unrelated company).

To allow a competitive market to develop among suppliers, the incumbent transmission and distribution utility must transfer its power plants and power purchase contracts to a separate competitive company, which could be either an affiliate or an unrelated entity. This separation, together with a code of conduct, will help ensure non-discriminatory access to customers and the transmission and distribution system for ESPs, who will generate or purchase at market-based rates.

5. Competitive access to power supplies may require structural changes to transmission system ownership and operations.

Provisions and institutions must be created to provide for system reliability and power supply coordination. Regardless of whether the market relies on bilateral contracts, a power exchange or is limited only to certain participants, assurances that there is available supply to meet total customer demand and to reliably operate the system will be required. Functions and service to be provided include: load forecasting; scheduling of power supply; balancing of supply with demand; reconciliation of contract differences; and the provision of ancillary services to operate the system reliably. An Independent Transmission Company (ITC), Regional Transmission Organization (RTO), or Independent System Operator (ISO) can most effectively carry out these functions.

In addition, open access must be provided to the transmission and distribution system. Price setting for use of the transmission and distribution system must be nondiscriminatory and independent of the financial considerations associated with any specific generation owner. Here again, some form of ITC, RTO or ISO may be necessary to ensure meaningful open access and appropriate pricing.

6. Public interest programs will be funded by a System Benefit Charge.

In recent years, certain public programs have been funded through electric utilities. Such programs have included renewable resource development, energy efficiency, air quality improvement and low-income assistance. During the transition to competition and under restructuring, these programs should continue by implementing a non-bypassable System Benefits Charge (SBC) to fund low-income energy assistance and protections, renewable resources, energy conservation and air quality improvements. This charge will not increase rates, since these benefits are already embedded in today's rates.

7. All customer classes will be provided choices and an opportunity for cost savings.

Several steps could be taken so that all customer classes will have an opportunity for cost savings:

- Customer choice should be implemented sooner rather than later for all classes of customers.
- Customer choice must include provisions allowing residential and small commercial customers to choose to participate in aggregated groups (e.g., AARP, neighborhood groups or the Farm Bureau) so that individual customers could collectively have and exercise the buying power of large customers.

- Programs must be implemented to provide education to low-income, residential and small commercial customers about retail choice.

8. Colorado's air quality will be protected.

Customer choice must be designed to continue protecting air quality and to prevent loss of air quality improvements and emission reduction benefits associated with prior utility investments. Existing and new competitive suppliers must adhere to all current emission reduction goals and air quality requirements.

9. Renewable energy resources will be used based on customer demand, risk hedging, cost reductions and economic development.

Customer choice must be designed to allow customers who want renewable resources to buy them at market prices. SBC funding should be made available for appropriate research, development and demonstration of renewable energy technologies. Voluntary targets for renewable resources should be considered, as well as economic development policy emphasizing job creation, local supply of renewable technologies and services and rural economic development.

10. State or local government tax revenues and franchise fees should be protected.

Customer choice and competition should be implemented in a way that does not cause state or local governments to lose franchise fees or tax revenues. Revenue maintenance provisions or other similar mechanisms, akin to those developed in other states, should be included in Colorado's restructuring legislation to the extent necessary to protect against such revenue losses.

11. Stranded costs, if any, will be recovered through a non-bypassable charge.

"Stranded" costs are costs that are now in the current rate structure but that can no longer be recovered in a competitive market. In essence, they are the difference between (a) the book value for the assets used by a utility (currently included in rates) and (b) the market price for those assets. They also include regulatory assets, which are deferred expenses that regulators have required.

Utilities should, after reasonable efforts to mitigate all potential stranded costs, be given an opportunity to recover their legitimate, unmitigated net verifiable stranded costs, if any. Any needed recovery should be accomplished through a non-bypassable charge that does not discriminate among consumers, create a competitive advantage for any electric utility, impede competition or the entry of new generation suppliers, cause cost-shifting to occur or provide a greater return than currently exists.

In addition, to the extent a utility incurs significant transition costs to provide for a competitive marketplace and educate customers about retail competition and their new opportunities to choose competitive services, such costs should be recoverable through a non-bypassable charge. Securitization should be considered as a means for recovery of stranded costs.

12. Policies must be adopted to prevent abuses of generation and transmission market power.

The development of an effective and competitive market requires functional or structural changes, or both, in the control of generation and transmission to mitigate potential abuses of market power. No single supplier should exercise inordinate control of generation or access to transmission in any geographic market or "load pocket."

Examples of structural changes are the divestiture of generation assets, corporate separation and establishment of an independent transmission system operator. Examples of functional changes include formal accounting and regulatory procedures, codes of conduct and reporting requirements for treating commonly owed generation, transmission and distribution assets as separate businesses.

Once changes are made, transparent bilateral contracts such as standard offer service and transparent market mechanisms such as power exchanges will provide great benefit to customers and prevent manipulation of electricity prices. Access to low cost generation via open access transmission also benefits customers by providing access to the greatest numbers of suppliers.

B. New Roles for Participants Under Customer Choice in Colorado

1 . The Customer's Role

The basic difference a consumer will see is from a legally mandated relationship with a utility to a relationship of choice with a competitive ESP that must respond to customer needs. The customer's primary relationship will be with his or her chosen ESP, which could be an affiliate of the regulated distribution utility or an unrelated company. A customer may choose to use one provider (a 'one-stop shopping' ESP offering bundled services) or may choose to contract with multiple providers of energy services.

For customers who do not choose an ESP or who require temporary service, service will be provided under a bundled “Standard Offer.”

2. The Transmission and Distribution Utility's Role

The transmission and distribution utility has three primary roles:

- **Ensure system reliability.**

The utility will maintain and improve the transmission and distribution system at regulated rates, with PUC or other regulatory oversight.

- **Ensure universal service.**

The utility will ensure universal service through "Standard Offer" service via competitive bid or otherwise. The utility is entitled to recovery of costs incurred in providing this service, including a reasonable return on any investment necessary for providing this service.

- **Provide non-discriminatory access to transmission and distribution.**

The utility will provide transmission, distribution and related services to ESPS, whether affiliated or not, and customers on a non-discriminatory, open access basis under PUC regulation. Separating power generation from the transmission and distribution utilities will help ensure that ESPs and customers will have fair and equal access to the wires services they require.

3. The Energy Service Provider's (ESP) Role

While some ESPs may also generate electricity, their primary functions are to sell electricity directly to end-use customers and to provide for metering, billing, collection, and customer service. ESPs answer to customers and either satisfy customer demand or face a loss of business. ESPs must also be licensed by the PUC to ensure compliance with consumer protection and system operations rules. A utility affiliate may be an ESP.

4. The Power Generation Company's Role

Power generation becomes a separate and competitive business under restructuring. A meaningful competitive market in power generation will allow resources to be used to meet overall system requirements at the lowest possible or optimal cost.

FREQUENTLY ASKED QUESTIONS ABOUT CUSTOMER CHOICE

Aren't Colorado's electric rates low now?

Slightly more than a dozen of the roughly 60 utilities in Colorado have prices close to the state's average cost of electricity—the rest are higher. The low prices of the more urban utilities like Public Service Company and UtiliCorp United (Westplains Energy) is the primary reason the state's average price is as low as it is. Rural customers generally pay higher prices.

Colorado has the highest average electricity prices of the five remaining Western states that have not already moved to customer choice (the others are Utah, Idaho, Washington and Wyoming). Many Colorado consumers now pay above-market electric rates and, overall, Colorado consumers pay widely varying rates (in some cases twice as much for the very same power simply because of where they live).

Under the present system, Colorado's rural areas—with their relatively higher rates from utilities such as the rural electric associations (REAs)—are especially disadvantaged in attracting or retaining new businesses, and there is little regulatory oversight of the REAs to protect rural consumers. The rates of all of Colorado's electric utilities are detailed in the attached table.

What states have competition and what has happened as a result?

More than 60 percent of Americans live in the 23 states that, as of October 1, 1999, have committed to customer choice. These states include our regional neighbors Arizona, California, Montana, Nevada, New Mexico, Oklahoma, Oregon and Texas. No state choosing competition has reversed course.

Even though competition is still new in states with customer choice, consumers are already seeing 5-15 percent lower prices (even in states like Montana where prices were already lower than those prevailing in Colorado). These consumers are experiencing additional benefits, including technological and market innovations (e.g., smart metering, green pricing and guaranteed bills regardless of winter weather), economic development, an influx of investment, new services and products, a broader mix of renewable resources in response to customer demand for power from such resources, increased efficiencies and far more choices. Where electricity competition is permitted, we will see products and services that we cannot even imagine now.

What choices will consumers have if customer choice occurs?

To date, discussion has focused on allowing consumers to select their electricity supplier. Over time, it is possible they will also be able to select who reads their electricity meters, bills them and collects the payments and who provides customer service. The transmission and distribution of power (involving the electric infrastructure, such as power lines and substations) will most likely remain regulated while allowing open access to any energy supplier.

Doesn't competition create winners and losers?

Not among consumers. Consumers of all sizes will be the real winners in a properly implemented competitive electricity system. Under the current system, small customers often pay the highest rates. They have the most to gain from competition. Customer choice will lead to cost savings and competitive rates. Just as in any other industry or business, the only losers will be those suppliers who cannot compete effectively and efficiently,

What legislative protections can be provided to ensure benefits reach smaller consumers like residential, rural and low-income customers?

It is important that all consumers and communities share in the benefits of electric industry restructuring and customer choice. To ensure small consumers are not excluded from the savings and reduced costs associated with competition, consumer protection features (a "Customer Bill of Rights") should be included in Colorado's electric restructuring legislation:

No discrimination against any class of customers. The legislation should expressly require choice to be provided to all customer classes and prohibit discrimination against any class of customers with respect to the reliability, quality and safety of electricity.

Load aggregation encouraged for smaller customers. Both large and small customers must have the opportunity to combine (aggregate) their electricity use with other customers to obtain greater bargaining strength. Electricity suppliers could perform this aggregation. Municipalities, political subdivisions or membership associations (including existing REAs), among others, could also negotiate for electricity service on behalf of those constituents or members who choose to participate.

Universal Service (default electric supplier for all consumers). A default provider will be established that would provide service to all customers within a service area who do not--or cannot--choose their electricity supplier. The local, regulated distribution utility would continue to have the obligation to assure electricity is delivered to all customers. Further, in the event a new supplier fails to provide electricity, a consumer should be allowed to return to the original default provider and will not be left without power.

Licensing of electricity suppliers and "slamming" prohibited. All electricity suppliers would be licensed by the PUC. Unauthorized changes of suppliers must be strictly prohibited, with stiff penalties and license revocation for violators.

Supplier standards. The legislation must ensure that all suppliers of electric service are licensed by the PUC to meet minimum financial, technical and managerial standards to operate safely and reliably. In addition, the legislation should require electricity suppliers to provide pricing, fuel source, and environmental performance disclosures for customers, allowing easy comparison of available options from among competing suppliers.

Continued regulation of electricity delivery. While the supply of electricity would become competitive, the price for delivery of electricity (the transmission and distribution system) would continue to be regulated by the PUC under rates determined to be just and reasonable.

Reliability and safety. The legislation should require continued PUC oversight of reliability and safety in providing electric service.

Is Colorado too small or too rural a market to benefit from competition?

The airline industry is sometimes used as a negative example of competition because too few airlines compete in Colorado. Transmission and distribution lines are not as moveable as airplanes; open access to these lines will ensure the receipt of low cost electricity for rural communities and consumers.

In contrast to the airline industry, Colorado has over 60 electricity suppliers already. Regional and national suppliers are also poised to enter the market. In addition, Colorado's low-cost fuel resources provide a natural advantage in attracting new generation facilities—an occurrence that could counterbalance the fact that today, Colorado's urban residents rely extensively on imported electricity.

How will rural Colorado consumers be affected by customer choice?

Under Colorado's current electric system, rural consumers pay widely differing rates for the very same electric service. As shown on the attached table of Colorado electricity rates, thousands of rural Colorado residents now must pay as much as 7-9 cents per kilowatt hour, far more than the 5-6 cents most Coloradans pay. Competition will afford rural consumers access to competitively priced electricity, while continuation of the existing system would deprive rural consumers of the choices, benefits and new products and services flowing from competition.

What are the effects of customer choice on Colorado's rural electric associations?

In Colorado, there are numerous retail providers supplying electricity to rural consumers. Among those suppliers are investor-owned utilities and rural electric associations (REAs). Investor-owned utilities typically own electric generation plants as well as transmission and distribution wires. In contrast, the REAs typically are cooperatives that primarily provide only distribution services within a local monopoly service territory. The electricity supplied by the local REA is ordinarily purchased from a separate generation and transmission (G&T) company.

There was great confusion at the Panel's public hearings over what would be changed and what would remain the same under competition. In a restructured electric market, the REAs (like other distribution companies) will continue to own and operate the distribution facilities (poles and wires) to deliver electricity to their customers, just as they do now. The physical delivery system will not change, and the REAs would continue to be regulated as they are now.

On issues like reliability, consumers will still be dealing with the same REA service representative as they do today. *The only change a rural consumer would see is the opportunity to choose his or her own electricity supplier at competitive prices, while continuing to use and pay the REA for delivery of electricity from the consumer's chosen supplier.*

Because the REAs' delivery systems will not change and will continue to be used, maintained and paid for even by consumers who choose an alternate electricity supplier, the basic electric delivery service of the local REAs will not be substantially changed by retail competition. It is actually the generation and transmission companies, not the local REAs, that would compete in a restructured electric market. In fact, only the electricity generation portion of the generation and transmission companies' operations will become competitive; the transmission portion, like distribution, will still be regulated.

Are rural groups and co-ops elsewhere embracing competition?

Yes. For example, a recent study showed that rural co-op customers in New Mexico backed the right to customer choice. REAs in Montana and elsewhere are also beginning to compete successfully. The National Rural Electric Cooperative Association recently issued a news release entitled "Consumer-Owned Electric Co-ops Ready to Compete and Ensure Benefits for all Electric Consumers." Some state Farm Bureaus are lowering prices through aggregation of the loads of farmers and rural food processors, and even the cooperative G&T companies in our region are already marketing and selling power in those states where customer choice is now allowed.

Will low-cost power migrate elsewhere under customer choice?

No. The falling prices in Western states with competitive electricity markets and the physics of the interconnected Western electricity grid demonstrate that Colorado's low-cost power will not migrate elsewhere.

Colorado is the highest cost state remaining in the western United States that has not restructured its electricity industry. The states with restructured markets are attracting investment in new plants and lowering prices.

In California, the decline in prices is directly attributable to the influx of new generating capacity being installed (nearly 14,000MW), which is expected to lead to even further price decreases, according to the President of the California Independent System Operator. This new capacity is displacing older, inefficient resources and is driving down the price of wholesale electricity sold into the competitive California retail market. Due to the lower prices in the restructured markets and the economic penalty paid via hefty transmission fees to sell Colorado power in remote markets, there simply will not be an economic incentive for Colorado suppliers to sell into those markets.

The path for electricity sold in today's competitive wholesale market is a financial path and does not represent the actual physical flow of electricity from the buyer to seller. However, the flow of electricity follows the laws of physics, not the flow of economic transactions. Given Colorado's location at the remote edge of the western grid, the distance between Colorado and out-of-state electricity loads, plus significant physical constraints on regional transmission, there is only limited ability to sell electricity outside our borders. In addition, information provided to the Panel predicted even lower levels of electricity exports under competition as compared to the level under traditional regulation.

Some restructuring opponents claim that electricity industry restructuring might cause electric prices to somehow "average out" across the country, with rates in the highest-cost states decreasing and rates in the lowest-cost states increasing. However, no competitive market is a zero-sum game: the lowest-cost provider, not the average, drives prices. Electricity prices in the competitive market will largely be driven by suppliers who have access to the lowest cost electricity -- which today is much lower than even the relatively "low" rates in some areas of Colorado.

In a competitive marketplace, any electricity supplier that raises rates in Colorado would face competitors offering lower prices and better services. Further, the region's abundance of low-cost fuel and other electric generation resources assures that more low-cost power could be generated by competitors in Colorado and our region than in most other areas, even if additional sales were, on occasion, made to consumers located far away.

What about reliability?

An overwhelming majority of the Panel agreed that customer choice will not lead to a reduction in the reliability of electricity supply in Colorado. The same utilities that deliver power to Colorado consumers now will continue to do so, and the PUC or other local governing body will retain oversight for reliability issues. In fact, reliability may well improve as consumers have more choices about the degree of reliability they will receive.

Who would I call to restore electrical service if my power went out?

You would call your local utility representative, just as you do today. The local utility will continue to repair, maintain and operate the distribution system.

If I don't choose a supplier, will I still get service?

Yes. You will continue to receive service through your current local utility. A default provider approved by the Colorado PUC will have an obligation to offer a standard service to all customers who do not choose an electricity supplier or whose selected supplier fails to provide service.

What happens if the electricity supplier I choose does not provide me with enough power?

Customers will not experience an interruption in their service and additional power will be provided to the system as consumer needs dictate. This process will be invisible to the consumer.

Will the PUC or other local governing body still have the authority to ensure reliable and safe service?

Yes. Colorado’s customer choice legislation will require that safe and reliable service be maintained or improved.

How do we know that the new electricity suppliers will be reputable companies?

Electricity suppliers for retail customers will be licensed by the PUC to assure that they are financially sound companies that will provide safe and reliable service.

Will utilities and their stockholders suffer from customer choice?

With the state's abundant and low-cost fuel resources, Colorado utilities should have no problem competing. Any customer choice legislation will allow Colorado utilities to recover legitimate "stranded" costs, and other risks of competition have already been factored into utility stock values. Most utilities have been focusing on restructuring since 1994 (when competition was first introduced) so by now they should be well prepared to compete.

What about the effects on utility employees?

Colorado's utility employees are likely to be more greatly affected by a host of other developments than by customer choice. For example, utility mergers and acquisitions affect the location and status of utility workers. In addition, many of the state's electricity plants are owned or operated by utilities based outside Colorado who are and will be making business decisions regarding staffing and operational issues without regard to customer choice or other legislation in Colorado.

What about the Stone & Webster model considered by the Colorado Electric Advisory Panel?

The Stone & Webster model is merely a hypothetical rate forecast based on assumptions, not on actual facts. Further, the Stone & Webster model, which was limited to rate issues, failed to analyze any of the other benefits that are flowing from competition in the states that have moved to customer choice.

With respect to rates, a 1999 U.S. Department of Energy report concluded that restructuring would <u>lower</u> electricity prices by an average of 19 percent in Colorado, and by 21 percent for Colorado residential consumers. The Stone & Webster model is based on a very different set of assumptions, and was criticized throughout the Panel's deliberations as not providing any useful comparison of the present system and customer choice.

The theoretical model used by Stone & Webster simply could not and did not reflect how Colorado's electricity system actually works. Instead, it compared an unrealistic "perfect" version of the current system against a version of competition that assumed artificially high costs and prices.

The following list illustrates some of the unrealistic assumptions used in the Stone & Webster model:

<u>Flaws made in Stone & Webster assumptions regarding continued regulation</u>

- The model assumed an artificially perfect current system where all electric generators in the state are under the control of one entity. The reality is that each utility controls its own resources for its own loads, resulting in statewide inefficiencies not recognized or accounted for in the Stone & Webster model.

- Stone & Webster assumed access to all transmission lines is open and unrestricted with current ownership patterns. In fact, this is not the case under current regulation, causing significant inefficiencies and costs.

- Stone & Webster assumed under current regulation that new generation perfectly matches load growth, eliminating the rate increases that otherwise would occur under current regulation.

Flaws made in assumptions regarding competition

- Stone & Webster assumed federal water power resources in the West would be sold at market prices. This assumption would require federal legislative action and leads to grossly overstated prices for energy in Colorado and the West.

- Under the Stone & Webster model, older coal burning plants were assumed to receive energy and capacity revenues equal to what new gas plants charge, which artificially adds costs to the competition scenario.

- Stone & Webster did not account for any new operating efficiencies resulting from competition, meaning that costs to build, operate and maintain wires and generating assets continue to rise. This is contrary to what is observed with new non-utility owned plants and fails to recognize cost reductions brought about by improvements in technology.

- Stone & Webster included costs associated with electricity sold outside the state when calculating rates for instate customers.

- Stone and Webster applied a "profit margin" to all sales made, including those under default or standard offer service, which is a significant fraction of sales made under competition.

- Stone & Webster assumed only one type of market structure under competition. In reality, every competitive electricity market has many different commercial mechanisms for buying and selling electricity, squeezing out inefficiencies.

- Stone & Webster assumed that all suppliers would makes the same profits under competition, meaning there would be no losers among the competitors.

Given the model's underlying assumptions, it is not surprising that its hypothetical results run counter to both common sense and the 5-15 percent consumer savings actually being achieved in the states that have moved to electric competition. Because the Stone & Webster model only shows what might happen under a set of unrealistic assumptions, it can safely be discarded as a theoretical exercise that deviates far too much from reality to be meaningful.

Does a retail competition "pilot program" make sense for Colorado?

No. An experimental pilot program would simply prolong the debate and put off the difficult issues that need to be resolved in Colorado. Since 23 other states have committed to open their retail markets on a long-term basis, there is very little incentive for marketers, aggregators, brokers and other new market entrants to participate in short-term experimental pilot programs in the remaining states.

Experience has shown that the cost of participating in pilot programs is prohibitive to new entrants. This problem would be compounded in Colorado, where there would be no certainty regarding the eventual market structure or actual timing of the state's move to competition.

Pilot programs work best and can provide useful results only where they mimic a long-term market structure that is known and understood in advance. Colorado should begin now to adopt customer choice legislation that would provide market structure certainty and genuine competition. Implementation of a pilot program has no meaningful chance of success, would not provide a true measure of customer choice and would ensure continuing delay in bringing the benefits of competition to all Colorado consumers.

What type of market structure would facilitate effective competition in Colorado?

In determining an effective market structure for Colorado, we need to acknowledge our electricity interconnections and reliance on power sources outside the state. The type of structure must also take into account an even-handed approach to regulatory requirements imposed by appropriate federal, state or local governing bodies. Any market structure developed in Colorado should incorporate lessons learned from other countries and jurisdictions, including price transparency and risk mitigation. Lastly, the market developed in Colorado should be as flexible as possible to allow for different types of commercial transactions to occur while maintaining the reliability of the electricity system.

What would prevent incumbent generation owners from exercising monopoly market power and increasing prices?

Market power is the ability of one or more companies to manipulate prices to their advantage. The existing regulatory system assured that each utility controlled and had exclusive rights to serve 100 percent of their loads through the concept of exclusive service territory. Each utility constructed facilities to serve these franchised territories. The ability of other suppliers to serve customers in a competitive market is limited by the ability of suppliers to secure access to the market. For electricity, this means access to the transmission system or to local generating supplies. According to data given to the Panel, more than 3,000MW of transmission capacity can serve 7,800MW of Front Range loads from other low cost resources located to the north and west and, by 2003, one generating owner will own 3,600MW or 46 percent of the generating resources.

Unfortunately not all transmission owners in the state comply with rules governing transmission system access and operations. This limits the ability of customers to take advantage of low cost resources from outside eastern Colorado and limits predatory pricing by any one supplier. Any solution to address potential abuses of market power must take into account both generation and transmission ownership concentration.

COLORADO ELECTRIC UTILITY ALL CONSUMER RATES (BY RATE)			
Utility	**Customers**	**kWh (000)**	**¢/kWh**
Western Area Power Admin.	5	68,047	**1.73**
Moon Lake Electric Assn Inc.	2,450	489,116	**3.90**
Holyoke City of	1,192	20,884	**4.13**
Frederick Town of	1,206	24,855	**4.20**
Fort Morgan City of	5,849	187,157	**4.38**
Gunnison City of	3,509	56,001	**4.85**
Longmont City of	26,778	535,309	**4.94**
Loveland City of	21,385	456,231	**4.95**
Fleming Town of	215	2,792	**5.01**
Fort Collins City of	45,885	1,055,941	**5.11**
Center City of	1,040	16,610	**5.20**
Empire Electric Assn Inc	12,380	371,442	**5.24**
Colorado Springs City of	164,497	3,612,018	**5.28**
Poudre Valley R E A Inc	24,952	612,875	**5.30**
Utilicorp United Inc	80,590	1,416,438	**5.81**
Fountain City of	11,241	150,668	**5.89**
Public Service Co of Colorado	1,143,005	21,987,861	**5.93**
Mountain Parks Electric Inc	13,291	200,719	**6.03**
White River Electric Assn Inc	2,571	106,996	**6.19**
Las Animas City of	2,075	27,792	**6.24**
Highline Electric Assn	7,194	232,848	**6.31**
United Power Inc	30,124	568,096	**6.34**
La Plata Electric Assn Inc	28,377	652,790	**6.38**
Estes Park Town of	8,115	103,705	**6.39**
K C Electric Assn	6,052	155,169	**6.41**
Holy Cross Electric Assn Inc	40,204	774,236	**6.48**
Haxton Town of	584	6,377	**6.62**
Rural Electric Co	700	12,575	**6.74**
San Isabel Electric Assn Inc	15,605	243,259	**6.78**
Y-W Electric Assn Inc	7,694	271,193	**6.82**
Delta Montrose Electric Assn	24,326	414,715	**6.84**
Aspen City of	2,464	60,809	**6.85**
Yampa Valley Electric Assn Inc	19,807	403,802	**7.05**
Lyons Town of	750	7,108	**7.06**
Morgan County Rural Elec Assn	6,572	165,598	**7.19**
Springfield City of	1,033	10,200	**7.22**
Glenwood Springs City of	4,995	91,857	**7.31**
Delta City of	2,200	38,500	**7.36**
Gunnison County Elec Assn Inc	7,273	98,868	**7.37**
Yuma City of	1,484	20,330	**7.39**
Mountain View Elec Assn Inc	24,522	388,750	**7.40**
Lamar City of	5,591	85,046	**7.42**
Trinidad City of	4,922	42,292	**7.45**
Granada Town of	269	2,931	**7.51**
Oak Creek Town of	514	4,636	**7.55**
Intermountain Rural Elec Assn	74,682	1,061,157	**7.63**
Holly City of	708	6,722	**7.65**
La Junta City of	3,642	60,856	**7.89**
Wray City of	1,237	18,373	**8.01**
San Luis Valley R E C Inc.	9,382	175,060	**8.11**
Julesburg City of	835	9,419	**8.15**
Southeast Colorado Power Assn	9,313	139,300	**8.28**
San Miguel Power Assn Inc	9,321	132,826	**8.47**
Burlington City of	1,504	24,037	**8.48**
Grand Valley Rrl Pwr Line Inc	10,116	112,772	**8.51**
Tri-County Electric Coop Inc.	31	174	**8.62**
Sangre De Cristo Elec Assn Inc	7,608	72,697	**9.06**
Southwestern Electric Coop Inc	5	52	**13.46**
Wheatland Electric Coop Inc	58	347	**13.83**
State Total	1,943,929	38,069,234	**5.95**
Source Energy Information Administration US DOE EIA (1997)			

(This concludes this Report.)

KEEPING THE LIGHTS ON

Report of the Colorado Electric Advisory Panel Members Seeking to Resolve Urgent Problems in Colorado's Electric Industry

October 1999

The Colorado Electric Advisory Panel (EAP) has focused on evaluating the benefits and costs of retail competition. However, Colorado's electric industry faces critical near term problems and opportunities as it needs to develop large amounts of new resources to meet rapidly growing electric loads. The need for these resources is largely independent of how the retail competition issue gets resolved. This report identifies those problems and opportunities and urges stakeholders to craft solutions that can be adopted with or without a resolution of the retail competition issues.

I. Problems with Colorado's Electric Industry

Colorado's electric industry confronts serious, short-term problems that urgently need to be addressed by the legislature, regulators, and key stakeholders.

A. Meeting Rapidly Growing Electric Loads

Colorado has an enormous need for new resource in both the near and the long term. According to the economic and energy modeling undertaken by the Electric Advisory Panel's (EAP) contractor, Stone and Webster (S&W), the Front Range needs an estimated 4,750 MW of new resources by 2017 -- roughly enough to power two cities the current size of Denver at a cost in excess of $4 billion.

S&W forecasts that this resource need will be met by gas-fired generation, in either simple or combined cycle formats. S&W's finding that natural gas will be the fuel of choice was not affected by alternative input assumptions in the modeling (e.g., increased natural gas prices) or the scenario analysis.

The overwhelming majority of the new resource need is for Public Service Company of Colorado (PSCo), although several of the municipal utilities also need significant new resources over the next 15 years. Under the existing regulated monopoly system, PSCo is obligated to acquire new resources through the Integrated Resource Planning (IRP) rules adopted by the Colorado Public Utilities Commission (PUC). Despite the critical importance of the IRP process, significant transmission, economic, market, and environmental pressures are currently making it difficult, if not impossible, for PSCo to timely meet Colorado's new resource needs in an economically and environmentally acceptable manner.

1. Transmission Issues

One of the most significant problems involves transmission access into the Front Range area. There is insufficient transmission capacity to carry more power from outside into the Front Range load area. Thermal, system stability, and other constraints from the north (TOT3), west (TOT5), and east limit the physical access of additional out-of-state sources of generation to serve loads in the Front Range. Moreover, unresolved market power concerns associated with access to, and the pricing of, the existing transmission lines that comprise these TOT constraints further limit the potential for power transfers to meet rapidly growing Front Range loads.

Even within the Front Range region, transmission line upgrades and construction of new transmission lines are likely to be needed to support the new gas-fired generating capacity necessary to meet rapidly growing customer demands. Moreover, challenges associated with the existing siting process may make it difficult to site and construct adequate new transmission in a timely enough fashion to bring online sufficient amounts of new generation.

2. Investing in the Face of Uncertainty

These problems and inadequacies of the existing transmission system are exacerbated by the uncertainty associated with the potential for future changes in the structure of the electric industry. Given this uncertainty, key stakeholders are discouraged from investing in new resources -- frozen in the headlights. For example, utilities like PSCo understandably do not want to commit to long-term contracts for new generation without knowing future wholesale market structures, the terms for stranded cost recovery, their role as a provider of last resort, etc. Likewise, independent power producers (IPPs) do not want to sign shorter term contracts because they do not understand how to evaluate the market value of their generation plants after their utility contract ends in the absence of a clear wholesale market structure.

The end result of all this uncertainty is likely to be that IPPs will charge a significant premium for signing shorter term contracts or choose not participate in the bidding process. Indeed, the initial findings from the IRP process confirms this prediction. Few bidders participated when the contract length offered by PSCO was less than seven years. The impact of these uncertainties will be to drive up the cost of acquiring new sources of power to Colorado consumers.

In addition to the direct costs of uncertainty, other consumer cost issues are at stake. Infrastructure investments in T&D, command and control, and other system improvement technologies that pay-off only over the longer term are also likely to be discouraged in the face of future uncertainties about the structure of Colorado wholesale markets. Likewise, these uncertainties are also reducing investments in DSM, distributed generation, and renewable resources that produce environmental, risk diversification, and cost reduction benefits for

consumers over time. Finally, initial voluntary utility green pricing offerings have been sold out across the state and utilities are hesitant to aggressively market green power in the face of uncertainty about future markets. As a result, there are no clear plans for meeting green customer demands and customers who want to purchase wind power are once again on waiting lists.

3. Market Power

Other concerns surrounding wholesale markets and the IRP process also exist. For example, Colorado must ensure that independent power producers (IPPs) can own, finance, and construct new gas-fired capacity so that, if restructuring occurs in the future, the market power of incumbent utilities is reduced or eliminated. If they have these assurances, they are more likely to bid aggressively for power contracts. PSCO's recent proposal to sell-off the new capacity it recently constructed at Valmont and elsewhere helps to diversify the ownership of the generation plants.

4. Air Quality

The size of the new resource need also raises air quality concerns as the construction of thousands of megawatts of new gas-fired capacity along the Front Range may exacerbate air quality concerns. Indeed, some initial concerns have already arisen surrounding the environmental permitting of the first round of new gas-fired power plants.

5. Tentative Conclusion

The IRP process is frustrating, expensive, unwieldy and time consuming making it difficult for utilities like PSCo to bring on new resources in a timely fashion. As such, the IRP process and transmission access and pricing, as currently structured in Colorado, seems ill-suited to bring online the new conventional supply, green power, and demand-side resources necessary to meet rapidly growing electric demands in an economically and environmentally acceptable fashion.

B. Protecting Key Stakeholders

The existing industry structure should do more to protect key stakeholders, particularly low-income customers and utility employees.

Support for low-income energy assistance has fallen significantly over the past few years at both the federal and state level. There is a back log of needs and the financial and personnel resources required to meet these needs are inadequate. As the potential for retail competition has

expanded, the regulated system is focusing increasingly on the needs of larger customers. Low income customers are rightfully fearful of change, since the status quo already fails to meet their needs.

Utility mergers have resulted in a large reductions in the total number of utility employees. Overtime is a problem for the current workforce. Young workers are absent from the workforce in numbers necessary to fill workforce requirements over time. More utility mergers and consolidations are likely to occur. An adequate and well-trained utility workforce is required to meet Colorado's growing needs for quality power service and to manage recovery from outages. Entry of younger workers and training, as well as support for employees that lose their jobs, are important.

III. The Need to Improve on the Status Quo

Improvements to the status quo urgently need to occur in Colorado. Key stakeholders in Colorado's electric industry need to pull together to solve these problems in a timely fashion, either as part of implementing industry restructuring or as an improvement to the existing regulated monopoly system.

Conclusion

The Colorado EAP has split on the issue of whether restructuring to allow customers to choose their electric supplier was in the best interest of the state of Colorado. Many on the panel thought restructuring was not a good idea. Others thought it was. Whether or not the legislature decides to restructure Colorado's electric market, together, we need to focus quickly and intensively on the problem of acquiring sufficient supply and demand-side resources to meet growing electric loads at prices that are reasonable for Colorado's electric customers. The existing processes for acquiring and siting new resources -- focusing around administrative litigation at the state and county level -- are not likely to result in a quick, or an economically and environmentally attractive, solution.

(This concludes this Report.)

MINORITY REPORT

PREPARED BY LOW-INCOME REPRESENTATIVE

KAREN M. BROWN

OCTOBER 14, 1999

GENERAL RATIONALE FOR RESTRUCTURING:

Restructuring Trend: There is a national trend or movement to restructure industries where ever possible. The intent of such restructuring is to provide lower prices, better customer service and product innovation. In the last few years, particularly with the advent of airline, banking, gas and telecommunications restructuring, there is recognition that the electric industry may have reached a state where part of the electric market, the supply side, could be restructured.

Enhanced Technologies: Part of the reason that it now appears that restructuring of the supply side of the electric industry may be feasible is that enhanced technologies exist that allow for power generation on a much smaller scale, by the existing utilities or third party providers. This technological gain and others on the horizon could help lower costs. (The enhanced technologies are similar to the development of fiber optics that allowed the telecommunications industry to deregulate and provide cheaper long distance service.)

Innovations: A competitive market place will lead to more innovation and differing products from which consumers can choose.

CONCERNS WITH THE CURRENT INDUSTRY:

Transitional Regulation: Nearly half of all states in the nation have passed some form of electric restructuring. The states that have not passed restructuring are currently operating within the traditional regulated system. The regulation being provided has become "transitional regulation." Most commissioners in regulated states recognize the movement toward restructuring and are providing as much latitude as possible within the overall rules to allow for their existing utilities to prepare for restructuring. The interpretation of the rules is changing because the environment is changing.

Customer Service: Utilities have been adapting their entire customer service departments to be more bottom-line focused and as a result, consumers are seeing reductions in service. For example, some utilities have closed regional offices located throughout the state of Colorado. It is true that one can still call a 1-800 number to seek assistance, but consumers have lost the ability to have a face to face conversation with an individual regarding their bill or utility service. Consumers are also faced with more of what many of us do not like - waiting in a phone queue to

get our questions or problems addressed. These changes have been happening over the last 8 years. Because they are gradual, the average consumer is not acutely aware of the decline in service.
Service Reductions for the Low-Income Customer: Utilities are moving toward focusing more on the bottom line and thus reducing services offered to low-income customers. Credit and collection policies have tightened significantly for the poorest of the poor; time spent on the phone to resolve issues with residential customers including low-income customers is being monitored and incentives may be developed to keep calls short; utility funding and support of low-income energy assistance programs is declining. For some utilities, customer service people are no longer located in the state of Colorado, leading to some confusion and lack of knowledge of local conditions, local assistance, even knowledge of the fact that the company services a particular city in Colorado.

Generation Shortfalls: In an electric industry anticipating restructuring, regulated energy providers are reluctant to build the generation that Colorado needs today and in the future. They are unwilling to invest because of the uncertainty of how they will recover costs. Until guarantees are made either under the existing system, or a restructured market place allows for demand to drive generation development, Coloradans may be put at potential risk of inadequate power supply to meet their needs, or if met, solutions may use inefficient higher cost options. Inadequate power supplies are leading to and may continue to lead to "brown outs" and/or "black outs" in the state of Colorado. (Low-income customers have the fewest options available to respond to "brown-outs" or "black-outs.")

Additionally, projecting need will become much more difficult in the future with the use of electricity growing exponentially.

Transmission Constraints: The transmission system is inadequate to address Colorado's current needs. Work needs to be done to interconnect our system with other states and to enhance the existing system to improve efficiency within the state of Colorado.

Job Loss: As utilities merge and work to get operating costs to lower levels, jobs at all levels throughout the company are being lost now. This impacts service, reliability, the Colorado economy and many family's individual lives.

Environmental Protections: Utilities seem less willing to do what is necessary to maintain the environment in the way we found it years ago. There seems to be great reluctance, even in a system of guaranteed cost recovery, to choose alternative energy sources that would at a minimum maintain the quality of air we breathe.

VIRTUAL DEREGULATION:

Many of the concerns expressed above are fears about what will happen in a restructured market place. Some of these concerns are realities today in a regulated market place. So it seems that Coloradans are faced with the negative consequences of a restructured market place in a regulated system. It is as if restructuring is happening - "virtual restructuring" - without protective mitigating measures and the ability to choose a supply provider.

TRANSITION PERIOD:

Any legislative or regulatory change allowing for customer choice is likely to create considerable confusion for low-income consumers, particulary in the short-term. It took more than 10 years for approximately 50% of long-distance consumers to become educated, to understand and embrace long distance choice. It is expected that it would take equally as long to work through the radical changes and educational processes necessary to have an effective retail competitive electric supply market.

Because of the changes occurring in the current industry and knowledge of the challenges of the telecommunications restructuring, the transition period will require many mediating measures to protect low-income and residential consumers. Some mitigating measures will need to be continued indefinitely as they are items that are currently needed today.

In the long term, it seems that competitive markets could deliver what is being proposed by those who support restructuring - cheaper prices for all, better service, more product diversity and innovation.

But in either a market-driven system or in a monopoly system, there are customers who because of age, disability, bad luck, education, lack of opportunity or even, sometimes, human frailty, lack economic and political buying power. Without this power, these consumers as a whole always fare the worst. Market forces do not and will not remedy the imbalance. These customers, the so-called “low-income” population, absolutely cannot be required to participate in a competitive, deregulated electric market place without strong, just and certain protections.

SUPPORT OF THE DEREGULATION OF THE ELECTRIC INDUSTRY:

The low-income representative supports restructuring conditional upon inclusion of the enclosed mitigating options as a part of any restructuring legislation.

The transition period to restructuring will be lengthy and challenging. During that transition period, many mitigating measures will be necessary to address all issues as outlined in the electric study legislation.

MITIGATING OPTIONS FOR THE LOW-INCOME POPULATION:

Electric restructuring cannot occur without, at a minimum, integration of the following remedies to protect the low-income population:

- public benefits charge consistent with the Governor's Energy Assistance Reform Task Force Report, such funds to be used for weatherization, energy education, conservation, home energy bill assistance and new low-income housing needs

- public benefits charge directed toward the Colorado Energy Assistance Foundation for distribution statewide to appropriate agencies, non-profits and governmental provider agencies

- omit the low-income consumers from the public benefits charge

- studies to be done over time on the impact of restructuring on the low-income consumers with the ability to remedy problems

- electric consumer aggregation assistance for the low-income consumer

- non-discrimination legislation to prevent discrimination on geography, income, etc.

- rate protection

- specific restructuring public relations and choice education programs geared toward the low-income population

- service performance measures targeted to the low-income population

- legislative language allowing, but not mandating, discount rates

- continued energy provider participation in soliciting customers for low-income funding, particularly in times of energy crisis

- energy provider participation in creating awareness of help for low-income consumers.

(This concludes this Report.)

Colorado Industry Perspective
on
Electrical Restructuring

by

Eugene Packer
Industrial Representative
Colorado Electrical Advisory Panel
Colorado Legislature

The author has participated with the Colorado Electrical Advisory Panel for the past 16 months as the Industrial Representative. Comments within the body of this document are representative of industry's position on restructuring. The panel's process has been beneficial for the State of Colorado and has been a "process with a conscience". The Colorado General Assembly formed the Electricity Advisory Panel and tasked it with determining whether electrical restructuring of the retail electric industry is in the best interest of all Colorado electricity consumers and the State as a whole. Also, the General Assembly asked that the Panel to address the manner in which restructuring should be implemented and timed (if the General Assembly decides to go forward with implementation of electric industry restructuring).

The term restructuring is widely defined and has multiple definitions and connotations. Colorado Industry recognizes the wide meaning of this term and desires to overall maintain a fair and equitable process for all of Colorado's electrical consumers. The State of Oregon has recently gone through a restructuring process and Oregon's SB 1149 may potentially serve as a template for a process in Colorado.

Electrical consumers had opportunity during the month of July 1999 to provide input to the Advisory Panel. Hearings were conducted in the Colorado Cities of Craig, Montrose, Durango, Ft. Morgan, Denver, and Pueblo. A total of 199 individuals spoke. Twenty-one favored restructuring. Seventeen were undecided. One hundred and sixty-one were opposed to. Colorado Industry was not well represented well in these meetings and an overall industrial input was not provided. That input is herein provided. Industry is aware of other customer input and is sensitive to the cost, service, and social issues.

Colorado Industry input to the Electrical Restructuring Process:

Shell Continental Companies

This is to confirm that Shell is a major industrial electricity consumer in Colorado. We favor electrical deregulation because we believe it will create consumer choice and market driven competition.

Rich G. Hansen
Public Affairs Manager
Shell Continental Companies
(281) 544-2020
(281) 544-2012 Fax

Anheuser Bush

We have a brewery in Ft. Collins and are behind free market generation. We support electrical deregulation.

Bob Merlow
314-984-4559

Anheuser Bush
Deregulation would help from a cost standpoint—we're concerned about costs.

Lucille 970-686-4102

Asarco

Asarco is an industrial consumer active in the State of Colorado and we support retail competition that allows choice for consumers.

Bob Quick

Holnam Inc.

I am the Commodity Manager for Energy for Holnam Inc. We are the largest cement manufacturer in the United States. We operate two plants in Colorado, one located near Fort Collins and the other at Florence. The cement manufacturing process is very energy intense in terms of both electricity and fuel. Electricity costs are critical to viability and competitiveness of our plants. My reason for writing today is to encourage customer choice in the electrical restructuring process. Customer choice is the only way to keep our facilities and other industries viable and competitive in Colorado.

Holnam also operates a plant in Montana, a state that was low cost in terms of electricity, but opened their system to customer choice in July of 1998. Holnam was the first industrial to take advantage of the market opportunities. The results were savings that were in excess of 15%. The process of change went smoothly and the plant has experienced no supply problems. In fact the hardest adjustment for us has been having to deal with energy suppliers that, as part of their competitiveness, have been extreme in their customer service efforts as compared to the old system. I feel the Montana example is a good reference and a "blueprint" to follow.

In Holnam, our plants compete not only against outside competitors, but also amongst ourselves for internal resources such as capital. The savings at our Montana plant gave them a cost advantage over the Fort Collins plant, which can serve part of the same market. The Montana plant's cost of electricity is also significantly lower than the plant located near Florence. In fact, out of Holnam's 14 major manufacturing sites, there is only one plant with higher electricity costs than the Colorado plants and 11 with cheaper electricity.

Holnam is currently building a new facilities in Texas and at our Florence site. We are working on plans to build new facilities in South Carolina, Missouri, Alabama and Illinois in the near future. There is nothing planned for Fort Collins. Production costs are a major factor in these decisions and electricity prices drive production costs. These other sites are located in area that are either working toward customer choice or have special contracts that result in cheaper electricity costs.

I would like to summarize by reiterating that the current electricity prices in Colorado could threaten the viability of current industrial facilities and put Colorado at a disadvantage when competing for new facilities. Customer choice is the best way to deal with this and will lead to lower cost in Colorado.

Jim Gilbert
Holnam Inc.
Commodity Manager - Energy
4070 Trident Road
Three Forks, MT 59752
PH (406) 285-4962

Hewlett-Packard Company

The electrical industry is in the midst of a complete restructuring. With a deregulated market, customers will have full market access for their electrical power needs. Regulatory bodies at the state and federal levels are responding to customer desire for greater "choice" in how they purchase electric energy. The U.S. Congress and state legislatures have already begun to address this issue.

A deregulated electric power market will allow customers choice and will introduce competition into the purchase of electricity and associated services. A successfully restructured electric industry will:

Provide for participation by all customer classes;
Exhibit a full competitive market for the purchase of electricity;
Guarantee non-discriminatory access to transmission and distribution facilities;
Insure all customers requesting service will be connected by the local distribution utility;
Provide detailed billings of all electrical costs;
Safeguard against excessive market power by a few players;
Phase out unwarranted cost shifting;

Funding for certain utility programs (conservation, renewable resources, low-income assistance, fish and wildlife)may need to be restructured to make them more market compatible.

Hewlett-Packard Government Affairs
Public Policy Brief
March 1999

Lockheed Martin Astronautics

Lockeed Martin Astronautics has actively researched this issue and strongly supports restructuring in Colorado. It is our firm belief that opening the electric markets to competition will benefit both private consumers as well as industry. Naturally, if a restructuring bill is burdened with riders such as "green power" or other constraints, the competitive advantage would diminish. Lockheed Martin Astronautics favors restructuring.

Gary Oertli
Manager, Plant Operations
Lockheed Martin Astronautics
303 977 4572 phone
303 977 5160 fax

Conoco

Conoco supports the development of fully competitive electric markets consisting of a competitive generation sector, unbundled, open and non-discriminatory access to transmission and distribution services, and a customer supply sector linking customers to the competitive market. As it has in other industries, competition in the electric industry will bring lower prices, technological efficiency, environmental improvements, enhanced Reliability, and increased innovation in pricing and services.

Joan Walker-Ratliff
Conoco Global Power Inc.
Ponca City, OK
(580) 767-4070 or ETN 442-4070

IBM

IBM is in favor of customer choice in Colorado. We believe that there could be significant savings if we were allowed to purchase power in a competitive market. In fact several commodity suppliers have shown interest in servicing IBM nationwide. I believe that savings can range from 10 to 25% of current cost.

Ray Tafoya
Real Estate / Site Operations, Boulder Colorado
tl 263-6725, ph 303-924-6725, fax 303-924-9890

Cyprus through Climax Molybdenum Company

Climax Molybdenum Company is Public Service Company's second largest electric customer and its largest natural gas customer. Power is a very large component of a mining company's variable cost and a competitive environment will create efficiencies and cost savings that regulation cannot. Cyprus has worked for 5 years in Arizona for electric competition which the Commission recently issued competition rules to be effective October 1, 1999. Two utility stranded cost settlements have been approved with Commission decisions anticipated by the end of the year for the remaining utilities in the state. Already 14 energy service providers are authorized to supply competitive generation service to customers. Customers are benefiting from competition. I understand the public power issue in Colorado, and am confident that given an opportunity, a competitive electric environment would provide creative and innovative solutions to address the public power concerns. I am responsible for the power requirements of our mines (mostly copper mines) in North and South America and would enjoy talking with you personally about this topic

Mike
480 929-4507.

Amoco
Anheuser-Busch
Asarco
CF&I Steel (Rocky Mtn. Steel)
Chevron
Colorado Industrial Energy Consumers Group
Colorado Oil & Gas Association
Conoco
Coors Brewing Company
Cyprus Amax
Engage Energy
Enron
Exxon
Holnam
IBM
KN Energy
Kodak
Lockheed Martin
Royal Crest
Seneca Coal Company
Shell

The above companies support customer choice and restructuring for Colorado:

Bob Pomeroy
Holland & Hart

Colorado Industrial Energy Consumers (CIEC):
Air Liquide
Anheuser Bush
Ball
BP Amoco
Chevron
Conoco
Coors
Holnam
IBM
Lockeed/Martin
Shell

It is easy to get bogged down in computer models, mathematical analyses, etc. when investigating a matter such as the restructuring of the electric utility industry. However, the members of the Colorado Industrial Energy Consumers coalition, CIEC, have real-time experience in other restructured states where they have operations. The benefits are real.

Logic and common sense, known and measurable experience with competition in other states and the results of competition in other industries should prevail over questionable hypothetical assumptions in a study. At least the members of CIEC hope this will be the case. However, it seems that some of the panel members studying the question are relying solely on the findings of one study, which comes to the unique conclusion that prices will rise under a competitive structure.

A decision to restructure Colorado's electric utility industry will have a direct impact on the financial well being of all Colorado businesses, which have, made a substantial capital investment in Colorado. Increasingly, Colorado businesses compete in a national and sometimes international market. The ability to stay competitive depends on the ability to reduce costs wherever possible, particularly the cost of electricity which can account for upwards of 60% of the production cost for certain products. Keeping Colorado's businesses financially healthy is good for Colorado as well, for that financial health flows over to the economy generally in terms of employment and tax base. The same basic analysis applies to all types of electric consumers, not just to businesses.

The key to remember is that this is not a battle between business and consumers. The health of Colorado's economy ties us all together.

Competition has clearly benefited consumers in other industries over time. For example, the introduction of competition into the long distance telecommunication industry resulted in a 40% - 50% reduction in rates between 1984 and 1994. Likewise, introduction of competition into the natural gas industry resulted in a 30% - 60% reduction in rates during the same time period. The members of CIEC believe that Colorado can and will experience similar reductions in rates if electric restructuring is implemented here.

Colorado Industry Recommends the Following Principles for Electrical Restructuring Legislation:

1. **All Utility Customers Must Have the Freedom to Choose Their Electricity Supplier.**

In the public input process, many customers desired to be represented either by their municipal government or cooperative suppliers. The desire to be locally represented and supported was a consistent input. Municipal governments and cooperative suppliers should be sensitive to industry needs and work to provide a competitive process for industry.

2. **Generation Services Should be Competitive. Transmission and Distribution Should Remain Regulated for Now.**

The electrical industry is vertically integrated with utilities providing generation and delivery of power. Currently, only generation is readily open to competition and that portion of the business should be open to full customer choice. The generation costs also represent the greatest percentage of the total utility cost, as high as 80%, and offer a true opportunity for savings.

3. **Residential Customers Must Have the Ability to Benefit from Customer Choice.**

Non Industrial Customers can benefit from customer choice. Legislation should create and protect the ability for all customers, including small business and residential consumers, to combine loads (aggregate). Communities could buy power on behalf of their citizens, purchasing cooperatives can be formed, and associations could purchase for their members.

4. **Reliability, Quality, Universal Service, and Safety Must be Maintained.**

If reliability and quality suffer, consumers will shift to other suppliers. Good regulation of the operation of electrical grids is critical for reliability and safety. All that should change is who contracts with the generation supplier and how much should be paid. Legislation should require reliable and safe service and should mandate that the PUC assure reliability and safety of the system.

5. **Rural Customers Must Benefit from Customer Choice.**

Rural customers are more expensive to serve in a restructured market. Rural customers must not suffer from lack of service because of competition. This was a strong point during the public testimony process. Those customers should only pay for a competitive price for generation. Legislation should provide for minimum service, quality, safety, and reliability standards.

6. Licensing of Power Merchants.

All Power Merchants (suppliers) should be licensed by the PUC. Legislation should provide for minimum service standards, including fair practices for connection and disconnection, metering, billing, and protection against fraudulent practices. The PUC should establish complaint resolution process open to public review.

7. Utilities Must Not be Permitted to Surcharge Customers for Uneconomic Investments.

Past uneconomic investments by utilities can result in higher than competitive market prices for electricity. This is generally not true in Colorado, but utilities should not be allowed to recover these investments through unfair surcharges.

8. Conservation, Renewables, Low-Income, and Environmental.

Funding for certain utility programs (conservation, renewable resources, low-income assistance, fish and wildlife) may need to be considered and they should be market compatible.

In summary, Colorado Industry is aware and concerned with the needs of all Colorado's interests. Furthermore, industry recognizes the broad meaning of the term "deregulation" and advises the Legislature to use time, caution, and wisdom in the process of deregulation. The industrial inputs herein provided present industry's point of view, and future modifications to the electrical industry in Colorado should be guided by additional consumer input, and experience.

(This concludes this Report.)

Electricity Advisory Panel Report
10-15-99

Position Statement of James W. Spensley, Member-at-Large

I was appointed by Governor Romer to serve as a Member-at-Large on this Panel. I agreed to serve in that capacity to the best of my ability recognizing that as a sole legal practitioner (and representing no client interest in these matters), I would be limited in the time I could commit to these proceedings.

The Public Utility Commission staff and the Panel members have worked diligently to fulfill the mandate of the Legislature in evaluating the sixteen specific issues identified and the myriad of sub-issues involved in restructuring of retail electric competition. It has been an arduous task because the issues are complex and relational to one another. Unfortunately, I feel that the effort has fallen short of my expectations for providing a valuable roadmap for possible legislative action. There are two principal reasons for this in my opinion.

First, one of the major obstacles in this process from the beginning has been the necessity for a "vote" by the Panel members at the end of our deliberations. This statutory requirement has placed this process in an adversarial context focusing on winners and losers. This adversarial context has engendered positional and defensive debate and a lack of interest or willingness among key members to explore creative, "win-win" solutions. Thus, the outcome of our voting will be of little surprise to anyone and of very marginal utility in understanding what is best for Colorado. It does not advance our understanding of the potential for improvements and efficiencies in our energy transaction and distribution system.

Second, this effort has been hampered by the fragmented approach to evaluating the multifaceted issues that involve trade-offs in efficiency and costs to meet our differing objectives. The educational efforts of the PUC staff in bringing numerous outside experts to the table should be lauded. Hearing the evaluations of other states and sharing their experiences in addressing these issues have been insightful. But this Panel has not had the opportunity to assemble a "complete package(s)" for a true evaluation of the trade-offs and mitigation steps that may be needed to find a common consensus on improvements. Unfortunately, the parceling of issues and competing interests into sixteen questions to be answered has oversimplified the task at hand. Taking a position on any one of these issues, beyond expressing support for the necessity that they be addressed in a cohesive and integrated proposal, does not advance our common cause or provide the needed guidance to the Legislature. The outcome of this effort could have been more productive if our focus had been on constructing several alternative course of action or "structures" for improving the current system and evaluating their costs and benefits to different interests in the present structure.

For these two reasons, I have chosen not to vote on many of the separate issues that were presented to us in detail. My only votes and endorsements have addressed those issues that reflect the direction or more integrated approach that I believe is needed in order to provide reliable and sustainable energy services in the future.

(This concludes this Report.)

VIEWS OF ELECTRICITY ADVISORY PANEL MEMBER
PHILLIP H. TOLLEFSON, P. E.
Colorado Springs Utilities
REPRESENTING
Municipal Distribution Utilities

As a member of the Electricity Advisory Panel representing municipal distribution utilities, I am exercising my right to submit a report for inclusion within the final report. In addition to submitting my own report, I have signed onto the three page majority report submitted by those who voted "no" on the question as to whether restructuring is in the best interests of all Colorado electricity consumers and the state as a whole. The purpose of this report is to further explain my vote, present a brief overview of some of the drivers of restructuring and outline some thoughts on restructuring issues.

On the ultimate question as to whether or not restructuring is in the best interests of all Colorado consumers and the state as a whole, I voted "no". One of the primary reasons for my vote was the fact that the panel did not adequately define the term "restructuring". One could define "restructuring" as unregulated and unmitigated retail competition for electric services; this is something I could not support, as it would represent a return to the days of unregulated monopolies earlier this century. "Restructuring" which would allow consumers to realize the benefits of competition while protecting against some of the risks would be something that I can support. However, in my role as a member of the panel representing municipal distribution utilities, it would be irresponsible of me to vote in favor of "restructuring" when the term has not been fully defined so as to permit a clear understanding of how the risks will be addressed. Regardless of how well I think Colorado Springs would fare under restructuring, there are other areas of the State which face greater risk. Therefore, a "no" vote is appropriate until greater clarity is achieved.

I believe that most American consumers, including those within my community, basically desire greater opportunities for choice and related benefits of competition afforded by the free market system. I continue to believe this despite the public input received by the Panel during its deliberations; most of this input was provided by representatives of specific groups whose positions appeared to be based on fear of the unknown. My Board of Directors shares this view. Further, I believe that Colorado Springs Utilities, and other similar municipal utilities, have reason to feel confident that they can be very competitive if the rules are properly established. To argue against competition when one's owners desire its benefits is not practical in the long run.

During the past 18 months the panel has spent a large amount of time discussing the potential impacts of implementing electric retail competition in Colorado. Less time has been spent on discussing the drivers or motivating forces towards restructuring. In fact, I believe we have spent more energy talking about "what not to do" instead of "what we should do" in response to these motivating forces. Key drivers include the potential benefits of competition,

economic development concerns and the impact an uncertain market will have on future investments.

To date, approximately 24 states have or are in the process of implementing some form of restructuring within their borders. The primary reason for these states going forward was the belief that competition for retail electric consumers would lower rates and create more choices. To date, the majority of states that have proceeded with restructuring have retail electric rates higher than those of Colorado. Whether and how much rates will be reduced has yet to be seen, although costs have generally dropped in other industries following restructuring. Proponents of competition have also argued that electric competition will bring better products and innovative technologies, better customer service and greater efficiency. I can speak from personal experience that these latter points are in fact true. The mere specter of future competition has stimulated tremendous effort throughout the industry to become more customer-focused and performance oriented. Deadwood is being trimmed and needless cost eliminated in the name of getting ready. New products and services are being created. One can only wonder what will happen when competition actually arrives.

As the competitive markets in states that have restructured mature, we will be able to determine whether or not the introduction of retail electric competition has lowered rates and if so, for what classes of customers. However, one fact of which we can be fairly certain is that at least in the short term the benefits of competition will flow to those who use the most power, primarily large industrial companies. These same companies are some of the more active proponents of electric restructuring. As other states restructure, there will be continued pressure from within Colorado to proceed with restructuring. This will ultimately become an economic growth question for Colorado, particularly as our failure to act creates more uncertainty.

The last driver of restructuring that I will mention is the uncertainty issue. The potential for future changes has created uncertainty which in turn is discouraging investment in needed generation and transmission projects in Colorado. An unfavorable investment climate will make it extremely difficult for Colorado to meet the Stone & Webster projected need of an additional 4750 megawatts of demand by the year 2017.

After all, what sane businessperson would invest hundreds of millions of dollars in facilities over which he could easily lose control (operationally and financially) in a regulatory shift widely believed to be imminent? Indeed, some argue for forced divestiture with sales proceeds directed to others besides the owners. This situation must be brought to closure, and I fail to see how that is possible without moving forward in some fashion.

Another aspect of this “uncertainty” issue involves the risk of federal mandates. While the likelihood of a “one size fits all” edict from Washington is becoming more remote as more states act, there may be still some risk that our failure to define the rules could result in someone else defining them for us.

Within the final report submitted by the panel are several mitigation options that received 20 or more votes. These mitigation options were voted on in a piece-meal fashion, e.g., to mitigate the impacts of restructuring on low-income consumers would you support a systems benefit charge? I would like to discuss these options, and several others of my own, in a big picture context. How do these options fit together, if at all, and what are the potential

impacts of implementing them? Below are what I view as critical issues in any restructuring debate as well as my views on these subjects.

Market Structure

There was not support among the panel for a market structure consisting of a "poolco". I was one of those that voted against a poolco, primarily because I did not believe that a poolco would be an effective market structure for mitigating market power in Colorado. Also, others' experience suggests that such a mandated structure can be very expensive and cumbersome to set up. There appears to be ample private sector initiative to establish competitive power exchanges without having the State of Colorado do so. Further, the relationship of power exchange functions to operations of the transmission system suggest the topic would be better taken up in considerations of a regional transmission organization. Such considerations are clearly beyond the scope of what Colorado can or should try to influence.

My preference would be for a market primarily consisting of bilateral contracts. In a competitive electric market, bilateral contracts would be agreements between suppliers and customers that specify the terms and conditions for pricing and delivery of electric service. A bilateral market would not be a panacea for mitigating market power but it would reduce the potential for market power abuse relative to that which could occur in a mandated poolco market structure. Voluntary power exchanges will likely arise from the private sector over time. A bilateral market would also help prevent the cost shifting that could occur in a poolco market structure.

The Wholesale Market

In a restructured market, what transpires at the wholesale level will greatly impact the retail market. A workable wholesale market will be a prerequisite to a workable retail market. At present, because of the market dominance that exists there can be no effective wholesale market. Prior to the implementation of restructuring, Colorado will need a developed wholesale market. In order to get to that point, Colorado should proceed with the integrated resource planning process and other planning processes that encourage the development of independent power resources, distributed generation and environmentally friendly resources within the Front Range of Colorado. In particular, the environment must begin to encourage longer term contracts and greater certainty to stimulate sufficient investment.

Transmission Issues

Colorado faces severe transmission constraints that limit Colorado's access to out-of-state generation sources to serve loads on the Front Range. One reason for these transmission constraints goes back to reluctance on the part of utilities to make investments in an uncertain market. Transmission development has also been constrained by land use regulations and siting difficulties. As soon as possible, Colorado's transmission constraints should be addressed by mitigating the hurdles posed by existing regulation.

Just as Colorado experiences market power in generation, there also arguably exists market power in transmission. It will be necessary for Colorado to participate in some type of regional transmission entity to ensure fair access to transmission. It is my position that the

rules governing such a transmission entity should not allow for unfair cost shifting. Any restructuring legislation should support existing joint transmission planning activities such as the Colorado Coordinated Planning Group and joint planning that may be required with the formation of RTO's. The joint planning efforts, especially in a competitive environment, will be necessary to ensure system reliability.

Rate Impacts

The Stone & Webster report commissioned by the panel predicted rate increases for all customer classes should Colorado proceed with restructuring. This finding is probably the greatest single concern to those who fear restructuring; the potential risks of such increases are also a concern to me since Colorado currently has an economic advantage over other states due to our low costs. Should Colorado proceed with restructuring, there should be some mechanism in place to mitigate any potential unwarranted rate increases. Unfortunately, the time spent by the panel discussing how best to deal with this issue was minimal. There were too many who simply seized upon the projections as a reason not to go any further.

One aspect of the modeling interpretations seems to deserve some comment. The way municipal utilities and rural electric cooperatives were portrayed is unrealistic, particularly for those who own substantial generation. The advent of competition is unlikely to increase our operating costs, and I find it hard to imagine my City Council approving a rate increase just because market price levels elsewhere in the state are higher. Rural electric cooperatives are in a similar position in their approach to the protection of consumer interests. The Stone & Webster report projections of large increases for utilities similar to Colorado Springs merely suggest the potential market prices that could be charged, not the actual probability. I agree those who are largely dependent upon purchased power from the wholesale market have more risk, particularly if the major sources of new generation are independent power producers and marketers. This will remain the case until substantially more generation and/or transmission capacity into the Front Range is built. Therefore, the removal of barriers to a healthy wholesale market (land use control reform and siting processes, etc) needs the greatest level of attention. We were never able to really focus on such discussions.

There was agreement among the panel that a cost-based standard offer service could serve as a means to mitigate potential rate increases. To ensure that a cost-based standard offer service is effective in a restructured market, every utility should be required to provide such an offering, at least in the short term. In addition, when reviewing the cost-based standard offer service the regulatory body should pay close attention to wholesale purchases made by a utility to ensure that they are prudent and that existing low cost resources remain in the rate base. Thus, the higher costs of new generation would be blended with existing low cost generation. The purpose of this is to help ensure that Colorado’s low-cost generation assets remain in the state.

I would also argue that a cost-based standard offer service should not be permanent and should only continue until such time as determined by the regulatory body. Once the supply market develops fully there may be no longer be a need for a cost-based standard offer service.

Market Power

The panel agreed that since one utility, Public Service Company, owns approximately 2/3 of the generation utilized by Colorado there is an excessive degree of market power in Colorado. Two potential areas of market power abuses are rate increases to customers and predatory pricing upon competitors. To a great extent, rate increases to consumers could be controlled by a cost-based standard offer service discussed above. The panel did agree that regulators should be provided with the authority and enforcement tools to limit the exercise of market power. This should also help control predatory pricing. Some divestiture would help address this problem, but it should be incented, not required at the expense of its owners.

Opt-In

The panel agreed that should Colorado proceed with restructuring, rural cooperatives and municipal utilities should have a choice as to whether they opt-in or not. I strongly support an opt-in provision. This is consistent with the manner in which every state, with the exception of Maine, has proceeded with restructuring.

Open Records

The panel agreed that all utilities should be subject to the same requirements concerning open records and public meetings. Furthermore, the panel strongly believes that current open records laws put municipal utilities at a competitive disadvantage. I voted with the majority of the panel on this and strongly concur with their recommendation.

Under current law, municipal utilities must comply with strict public records and open meetings laws. These laws are designed to ensure that local government and its decision process remains accessible to its citizens. These laws do not function well in a competitive environment. For example, when Colorado Springs Utilities signs a coal transportation contract competitors can and often do obtain a copy of that contract and ascertain the price CSU paid for coal transport. As troublesome as this is for a production input such as coal transport, it would be devastating for CSU to have to release its retail sales contracts to direct competitors. In addition, documents related to marketing and business plans could also be obtained by potential competitors that would place CSU at a severe competitive disadvantage.

Metering and Billing

The panel has agreed that metering and billing should remain part of the regulated distribution function. I strongly agree that this should be the case in any restructuring plan. Removing the metering and billing functions from the distribution utility would not promote competition and would greatly increase possibilities for uncompensated use of the distribution system to the disadvantage of other customers. In order to preserve the integrity of the local distribution system, these functions must remain exclusively with the distribution utility.

Stranded Costs/Benefits

The Stone & Webster study has provided the panel with evidence that rather than having stranded costs, Colorado will have stranded benefits. The manner in which the Stone & Webster report calculated stranded benefits was by calculating utility income earned under the current structure versus income earned in a fully competitive market.

As mentioned previously, I am concerned about the panel's failure to discuss a specific mechanism for returning stranded benefits. However, I believe the cost-based standard offer service advocated by the panel will play a major role in addressing the issue of stranded benefits. If rates increases are mitigated through a standard offer this will help reduce the amount of stranded benefits utilities receive. The major factors needing further attention to fully address this risk are the development of healthy wholesale markets and better PUC integrated resource planning processes for private utilities.

Should Colorado develop a restructuring plan and it turns out that utilities have stranded costs, those utilities should be entitled to recover costs associated with resource supply assets, power purchase contracts, production costs and other investments related to the utility's obligation to serve its customers. Consumer-owned utilities (municipals and cooperatives) have no other place to turn; it is illogical to suggest otherwise. These organizations serve approximately 38% of the customers in Colorado. It is my position that the prudent costs related to ongoing commitments or contracts that were made prior to the date when legislation is enacted should be recoverable.

Duplication of Distribution Facilities

The panel's vote to prohibit local by-pass is synonymous with agreeing to prohibit the duplication of distribution facilities. Should Colorado proceed with restructuring, the unnecessary and economically wasteful duplication of transmission and distribution facilities must be prohibited.

Renewable Energy

The panel agreed that the historic level of Colorado investment in renewable energy should be maintained and that tax incentives for development and operation should be provided. Some utilities in Colorado, such as Colorado Springs Utilities, are already offering green pricing as an option to their customers. The utilities that have proceeded with green pricing have received strong support from their customers for these programs. This would demonstrate that a market for renewable energy would exist in a restructured market and could be further enhanced via appropriate tax treatment. This seems especially timely since there now seems to be widespread agreement that Colorado should be finding new ways to reduce existing tax burdens.

Obligation to Serve

The term "obligation to serve" was never formally defined by the panel; however I believe a reasonable interpretation could translate to an obligation to connect. My concern with the term "obligation to serve" relates to customers who leave a utility system when market costs are low then wish to return when market costs are high. Utilities should not be required to provide sales service at standard offer prices to retail wheeling customers who have left but wish to return to sales service. The main reason for this is that a utility may have already obligated the generation capacity used by that customer. In addition, this "gaming" of the system will ultimately be to the detriment of those customers who do not leave. Obviously this is much more of a concern with larger consumers than with residential or smaller consumers. Any restructuring plan should place a utility under no obligation to provide sales service to retail customers who have opted to receive supply service from another entity.

Value Added Products and Services

The panel voted in support of a position statement that all utilities should be allowed to equally offer value-added products and services (VAPS) in a competitive market. This is a position with which I strongly agree. VAPS can provide significant benefits to customers, through one-stop shopping and increased choice, and will play a major role in a utility's ability to compete in a restructured market. Obviously, there needs to be some attention to unfair competitive practices, etc.

Low-Income Assistance

The panel expressed support for a system benefits charge for low-income energy assistance. I support this recommendation. However, I do have some concerns that issues related to the system benefits charge were not considered in the panel's final recommendations. For example, should utilities that don't opt into restructuring (i.e., open their service areas to competition) have to pay a system benefits charge and if not, should they receive the benefits of the charge in the form of fund distributions from CEAF. If this is truly a statewide issue, then all utilities should enact the charge and be eligible to receive funding, regardless of whether they participate in competition or not. To do otherwise would institute an economic advantage of one area over another and inequitably transfer money from one utility to another.

In addition, I support the implementation of a geographic formula in a system benefits charge through which a distribution utility would be assured that they will receive an amount close to that which was paid by their customers into the system over time. To do otherwise would seem to make the charge much more likely to be considered a form of tax subject to TABOR. Some argue that rural counties have highest percentages of low-income people and therefore have the greatest need. To urban interests, this could easily sound like an argument to institute some redistribution of wealth from the urban areas to the rural areas, thus arousing unnecessary opposition. In fact, available data suggest the actual numbers of low-income people are probably roughly proportional to electric load. For example, one source indicates El Paso County has a little less than 10 percent of the total number of low income people in the state; this also corresponds to our share of the total load, even though rural counties may have higher percentages of their population considered low income. I believe such an approach is the fairest and most logical way to institute such a charge. Additionally, I agree

with the panel's findings regarding various mechanisms and performance-based standards to further protect the poor.

Conclusion

There will be continuing pressure upon the General Assembly to implement restructuring. I believe that there is a potential for adverse impacts upon customer classes as a result of restructuring; however, many of those impacts can be mitigated. As there may be adverse impacts of proceeding with restructuring, as mentioned earlier, there may also be adverse impacts if we do nothing. If a restructuring plan is to succeed, the critical issues referred to in my report will need to be appropriately addressed. Despite the best efforts of many people, this panel has not been able to do so.

(This concludes this Report.)

Note to readers: This concludes the Statements prepared by Panel Members.

Sixteen issues mandated to be evaluated

Sections 40-4-113(3) and (3.5) of SB 98-152 require the Panel to examine sixteen specific issues, assess how those issues might be impacted by retail electric competition, and offer any recommendations relating to them. Results of that effort are summarized below. The exact wording of each of the sixteen issues is provided, and appears in the order listed in the legislation. The discussion of each issue begins with a very brief background statement to provide context for the issue. This is followed by a listing of the Panel's Recommendations, that is, those votes and mitigation options that received the necessary two-thirds (twenty) or more votes to be considered a Panel Recommendation as specified in SB 98-152. Please note that the Panel determined that all such majority votes, including those "no" votes on a particular question, should be included in the Panel's Recommendations.

In addition, there are many impacts and mitigating options that, while not receiving the necessary twenty votes to be considered a Panel Recommendation, did receive a simple majority of 15 or more votes. A summary of the simple majority votes is also incorporated in each subsection of the Panel's evaluation of the issues studied. SB 98-152 gives each Panel Member, or group of Members, the right to write a minority opinion. These minority opinions are found in the preceding section of the report.

(3)(a) A COMPARISON OF COLORADO'S ELECTRIC RATES AND COSTS OF GENERATION, TRANSMISSION AND DISTRIBUTION WITH THE EQUIVALENT RATES AND COSTS IN OTHER STATES.

Background (based on COPUC Staff's rate research): Compared to regulated rates in neighboring states, Colorado's residential and industrial rates are average, but both classes of rates are lower than the average in states that have made a decision to restructure. Compared to regulated rates in neighboring states, Colorado's commercial rates are lower than the average and lower than the average in states that have made a decision to restructure. Compared to regulated rates in neighboring states, Colorado's irrigation rates are lower than those found in all neighboring states.

Within Colorado, rates for residential customers are slightly lower for municipal customers, average for investor-owned utility customers, and slightly higher for residential customers of cooperatively-owned utilities.

Most states that have made a decision to restructure are higher-cost states. Western states that have not made a decision to restructure are primarily low-cost states. Colorado's rates are the highest of the remaining Western states that have not made a decision to restructure.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- Colorado's electric rates do not fall into the high-end compared to equivalent rates in other states.
- The numbers presented in Staff's report accurately represent the rates in Colorado and neighboring states.

Discussion of the Panel's vote: A simple majority of Panel members voted that Colorado electric rates fall into the medium range compared to other states.

In addition to the compiling rate information, which was based on average revenue per kilowatt-hour, Staff was assigned the task of comparing Colorado's generation, transmission, and distribution costs with the equivalent in other states. Initially the Staff presented tables based on

expense data reported by various utilities on their FERC Form 1-As, or equivalent. Several Panel representatives expressed concern that using expense data alone may misrepresent such costs. The Staff attempted to obtain more comprehensive costs data from Colorado entities. While all the Colorado utilities were cooperative with the Staff's effort to obtain this information, in the final analysis, the data is not available on a comparable basis. Due to variations in the methods used to determine costs between various types of utilities, the Panel determined that it was not possible to develop reliable comparisons of transmission, distribution, and generation costs.

(3)(b) AN ASSESSMENT OF WHETHER RETAIL COMPETITION IN ELECTRIC POWER SUPPLY CAN BE EXPECTED TO REDUCE OR INCREASE RATES FOR EACH CATEGORY OF ELECTRICITY CONSUMER IN COLORADO, INCLUDING LOW INCOME CONSUMERS OF ELECTRICITY, BOTH IN THE SHORT TERM AND IN THE LONG TERM.

Background: An energy model was used by the Panel's modeling consultant, Stone & Webster, to analyze Colorado's future electricity prices. While such a tool cannot accurately predict the future, its value lies in helping generate a range of estimates. One case supported an estimated increase of up to 29% on an average statewide basis. All cases resulted in increases.

Key assumptions were developed by Stone & Webster with input from the Panel's Energy and Economic Modeling Contractor Management Committee. A majority of the Panel and its Modeling Committee supported Stone & Webster's key assumptions, their overall modeling effort, and the general results outlined within their report. A minority of the Panel disagreed. Disagreement revolved around a few of the key assumptions used during the modeling, plus the inability of computer models to fully capture dynamics of fully functioning markets and related innovations.

Panel's Recommendations (two-thirds or more of the Panel Members support):
If retail electric competition is adopted:

- Rates for industrial customers are likely to decrease for both the short- and long-term.
- Rates for large commercial customers are likely to decrease for the long-term.
- Rates for residential customers are likely to increase for the long-term.
- Rates for low-income customers are likely to increase for the long-term.

Discussion of the Panel's vote: In addition to the Panel's Recommendations listed above, a simple majority of the Panel voted that overall, rates are more likely to increase and are not likely to decrease. A simple majority voted that residential and low-income rates would increase in the short-term and small commercial rates would increase in the long-term. Finally, a simple majority of Panel Members voted not to impose mandatory rate decreases.

(3)(c) AN IDENTIFICATION AND ASSESSMENT OF THE TYPES OF SAFEGUARDS NECESSARY TO PROTECT CONSUMERS IN THE EVENT RETAIL COMPETITION IS INTRODUCED, INCLUDING ASSESSMENT OF IMPACTS ON LOW-INCOME CONSUMERS OF ELECTRICITY AND LOW-INCOME ENERGY ASSISTANCE PROGRAMS.

Consumer Safeguards:

Background: Retail electric competition requires consumers to take responsibility for many decisions which were not required when service is provided by traditional utility suppliers. Consumer safeguards are necessary to assure that consumers possess the necessary education, information, and protection to make informed judgments.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- The Panel voted unanimously that if electric competition is introduced, safeguards are generally necessary to protect consumers.
- A uniform electricity disclosure label should be adopted to enable consumers to shop and compare offers. The label should include information concerning price and resource mix.
- A standard offer service for customers should be provided by the incumbent utility as a default provider. Default rates shall be based on cost of service as determined by the Colorado Public Utilities Commission or the local regulating body.
- A statewide consumer education program should be developed prior to the commencement of retail electric competition in Colorado. The education program should be consistent and competitively neutral and should enable customers to make informed decisions about customer choices available in a competitive market**.**

Other consumer safeguards should include:

- Assuring reliability of service through the setting of performance-based service quality standards.
- Universal service provisions should be included in any Colorado restructuring plan.
- Regulation of credit and debt collections practices.
- Customer privacy protections; no customer-specific information should be released without the customer's permission.
- Establish and police the standards of regulated and competitive business functions to assure the development of a competitive market structure.
- Enable aggregation and group buying power, to improve the market power of small consumers.
- Prohibit unfair trade and marketing practices.
- Establish dispute-resolution process.
- Enforcement tools, including open access to records and ability to levy direct fines.

Discussion of the Panel's vote: Most consumer safeguard options were adopted as Panel Recommendations and are shown above. A simple majority of the Panel voted that standard offer service should not be implemented through a bid process or at market-based rates and that customers who fail to choose a supplier should not be randomly assigned to a supplier. A simple majority of the Panel supported access to interconnection terms and standards for customers wishing to produce power in parallel and supply it to the grid.

Low-income consumers and energy assistance programs:

Background: Based on income statistics, roughly 20% of Colorado's residents meet the criteria for a "low-income consumer" (at or below 150% of poverty level). Colorado counties with the highest percentages of low-income households are rural counties. Low-income consumers bear a larger percentage of income for energy use than other consumers do. Funding

mechanisms provided $52 million to Colorado's low-income consumers during 1998. Funding is expected to continue decreasing due to revenue decreases in all funding sources.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- The Panel voted unanimously that if electric competition is introduced, safeguards are necessary to protect low-income consumers and low-income energy assistance programs.
- Periodic studies should be performed to determine the impact of competition on low-income electric customers in Colorado.
- Electric providers should utilize a quality of service metric, such as customer satisfaction, business office performance, service reliability, and regulatory performance measurements.
- Systems Benefits Charge: Include a Systems Benefits Charge in distribution rates that will fund energy assistance program benefits for low-income consumers.
- No undue discrimination should be allowed.
- Customer service charges applied to the availability of distribution service shall continue to be regulated in the rates of the distribution service provider.
- The Panel voted to reject the creation of a state-operated purchasing pool which would purchase electricity for state facilities and individuals receiving means-tested assistance.

Discussion of the Panel's vote: A simple majority of the Panel supported the idea that customer choice ought to be open to all customer classes at the same time, and should "cap the gap," a proposal under which the differential between residential and industrial rates would not be allowed to increase in the future.

(3)(d) AN ASSESSMENT OF THE POTENTIAL IMPACTS OF MARKET-BASED RETAIL COMPETITION ON THE DEVELOPMENT OF RENEWABLE SOURCES OF ELECTRIC SUPPLY, ENERGY EFFICIENCY PROGRAMS, AND ENVIRONMENTAL ISSUES AND PROGRAMS, TOGETHER WITH ANY RECOMMENDATIONS TO ADDRESS SUCH POTENTIAL IMPACTS.

Background: Under the existing regulated structure, Colorado consumers have typically found ways to invest in energy efficiency, renewable resources, and air quality improvements. It appears that Colorado utility investments in energy efficiency have declined since about 1995 when the potential for retail competition first became real.

Panel's Recommendations (two-thirds or more of the Panel Members support):

<u>Renewable Resources</u>

- If electric competition is adopted, the current level of development of renewable resources of electric supply in Colorado is not likely to decrease.
- Since some renewable resources cannot be dispatched by the system operator, questions about reliability and generation adequacy are raised that should be addressed as part of restructuring.
- If electric competition is adopted, the historic levels of investments in renewable resources and energy efficiency should be maintained for a transitional period.
- Funds should not be collected and distributed back through a rebate to customers who purchase qualified renewable energy generation.

- Taxes should not be assessed on generators based on emission of pollutants and use of the funds should support renewable energy generation through incentives or rebates.
- Property tax reform, production tax credits, or tax exemptions for renewable energy facilities should be enacted.
- Colorado should rely on green marketing activities and successes to set and meet renewable energy goals.
- Colorado should create periodic disclosure and labeling for electric power,
- Green power should not be given priority in retail pilot programs

Energy Efficiency

- If electric competition is adopted, the current level of Colorado-utility-sponsored investment in electric efficiency programs will not increase.
- Funds should not be collected through a system benefits charge and distributed as rebates to customers purchasing, installing, or initiating energy efficiency measures.
- Funds should not be collected through a system benefits charge and distributed through a trust fund to encourage energy efficiency.
- Taxes should not be assessed on generators based on emissions (with the funds intended to support energy efficiency).
- Colorado should rely on Energy Service Company markets to deliver energy efficiency.
- A systems benefits charge should not be used to support cost effective energy efficiency efforts developed under the status quo.

Environmental Issues

- Electric competition will neither positively nor negatively impact environmental issues and programs.
- All new generators should meet existing air quality standards as they apply.

Discussion of the Panel's vote: Overall, a simple majority of the Panel voted that the current level of renewable resources would not increase under electric competition. With respect to specific mechanisms to support renewable energy, a simple majority of the Panel voted the following: no public policy support for non-hydro renewable energy, no public policy support for renewable energy priced at or close to market, no minimum portfolio standard, no system benefits charge, and no surcharge for renewable energy.

Regarding energy efficiency, a simple majority of the Panel voted that the current level of utility-sponsored energy efficiency would remain unchanged and would not decrease if retail electric competition is adopted. A simple majority voted that energy efficiency programs should not receive public support under restructuring. In addition, a simple majority voted that distribution companies should not purchase efficiency measures meeting an avoided cost standard.

Finally, with respect to environmental issues, a simple majority rejected the following mitigation options: emission caps with tradeable allowances, emission taxes, and requiring new market participants and incumbent generators to meet new source performance standards.

(3)(e) AN ANALYSIS OF THE EFFECTS RETAIL COMPETITION MAY HAVE ON THE AMOUNT AND COLLECTION OF TAXES, FEES, PAYMENTS IN LIEU OF TAXES AND FEES, AND OTHER REVENUES BY COLORADO TAXING AUTHORITIES, INCLUDING LOCAL GOVERNMENTS.

Background: The electric utility industry has a significant impact—amounting to several hundred million dollars--on the tax base of state and local governments in Colorado.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If electric competition is adopted, the gross amounts of taxes, fees, payments in lieu of taxes and fees and other revenues paid to Colorado's taxing authorities, including local governments, is not likely to increase or remain unchanged and is likely to decrease.
- If electric competition is adopted, the process of collecting taxes, fees, payments in lieu of taxes and fees and other revenues paid to Colorado's taxing authorities, including local governments, is likely to become more complex and is not likely to become simpler or remain unchanged.
- If electric competition is adopted, the allocation of taxes, fees, payments in lieu of taxes and fees and other revenues paid to Colorado's taxing authorities will be sufficiently negatively impacted to warrant mitigating options.
- If electric competition is adopted, provisions to enable subsequent changes to the various tax and fee structures should be built into the initial restructuring legislation.
- A restructuring plan should be adopted that results in a level playing field for all electricity providers. For example, some states require all entities selling power in the state to have an office--a physical presence--within the state, therein creating "nexus."
- Out-of-state sellers should have a comparable tax/fee burden as in-state providers.
- A revenue neutral tax/fee scheme should be established.
- There should be a stated legislative intent specifying that restructuring should be revenue neutral, should apply equally whether services remain bundled or are unbundled, and should apply regardless of whether the provider is in-state or out-of-state.
- It should be clarified that the sales transaction occurs where the electricity is used or consumed.
- There should be an affirmative duty for all providers, regardless of where located, to collect applicable sales and use taxes.

Discussion of the Panel's vote: A simple majority of the Panel supported: changes in local taxes and fees (such as a consumption fee) to mitigate revenue shifting and a "soft landing tool" to spread any negative local tax impacts of electric competition over a fairly long and known time period.

(3)(f) AN ASSESSMENT OF WHETHER COLORADO'S EXISTING ELECTRIC UTILITIES WILL INCUR STRANDED COSTS AND INVESTMENTS IF RETAIL COMPETITION IS INTRODUCED, THE ESTIMATED AMOUNTS OF ANY SUCH STRANDED COSTS AND INVESTMENTS, AND THE RECOMMENDED METHODS FOR TIMELY RECOVERY OF SUCH STRANDED COSTS AND INVESTMENTS THAT IS JUST AND REASONABLE TO BOTH CONSUMERS AND EXISTING UTILITIES, INCLUDING WHETHER OR NOT REGULATORY EXPECTATIONS

SHOULD TRANSLATE INTO RECOVERABLE EXPENSES AS A RESULT OF THE INCURRENCE OF STRANDED COSTS.

Background: The issue of stranded costs and/or benefits is both complex and contentious. Stranded benefits means that the market value of electric generating assets is greater after the introduction of retail competition than their book value under regulated monopoly. Stranded costs mean just the opposite. To date, no state that is restructuring has been faced with significant stranded benefits. Between now and the year 2017, Stone & Webster forecasts that Colorado utilities will experience stranded benefits ranging between $500 million and $2.7 billion, depending on which structure for retail competition is assumed.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If Colorado determines that there are net stranded costs, some should be recovered from ratepayers.
- If Colorado determines that there are net stranded benefits, some should be returned to ratepayers.
- Stranded costs should be determined by a settlement method. Under this approach, the requesting utility would submit an application to its regulatory agency (either the COPUC or the local governing body in the case of municipal systems or rural electric cooperatives) proposing the amount and treatment of stranded costs or benefits.
- The recovery of any stranded costs, or the reimbursement of any stranded benefits, should be equitable for all customer classes and such recovery or reimbursement should be allocated based on the usage of stranded assets.
- Prohibit the shifting of costs from generation assets to the transmission and distribution system as a method of stranded cost recovery.
- Allow full recovery of costs associated with the ownership of the distribution system that delivers electric supply to the retail wheeling customer.
- Stranded costs should be recovered in a fair and equitable manner and should not place an undue burden on residential and small commercial customers.

Discussion of the Panel's vote: A simple majority of the Panel voted that Colorado utilities generally, and investor-owned utilities and large municipal utilities specifically, are likely to have stranded benefits and are not likely to have stranded costs. However, a simple majority voted that it is likely that small municipal utilities will incur stranded costs and are not likely to have stranded benefits. Rural electric cooperatives will likely incur some net stranded costs. None of the ranges of stranded costs and benefits received an affirmative vote of the Panel. However, the largest estimate of net stranded benefits that was included on the ballot (over $500 million net present value) received the most votes (fourteen). A simple majority voted that the "implicit regulatory compact" created a reasonable expectation on the part of regulated utilities that ratepayers should pay all stranded costs resulting from any change in the regulatory regime. In addition, a simple majority voted that if there are stranded costs, ALL should be recovered from ratepayers and if there are stranded benefits, ALL should be reimbursed to ratepayers. A simple majority of the Panel voted no to the proposal that stranded costs should be determined by requiring divestiture and auction of generating assets. In addition, a simple majority of the Panel voted that the recommended recovery period for stranded costs (positive or negative) should be ten years.

(3)(g) AN ASSESSMENT OF THE ESTIMATED IMPACTS OF RETAIL COMPETITION ON THE REQUIREMENT OF UNIVERSAL SERVICE, INCLUDING THE AFFORDABILITY OF DISTRIBUTION SERVICE, AND ON THE RELIABILITY OF GENERATION SUPPLY AND TRANSMISSION SERVICE, INLCUDING THE CONTINUED AVAILABILITY OF COLORADO'S GENERATION RESOURCES FOR COLORADO CONSUMERS.

Background: The first step in the consideration of universal service is to establish a definition for the concept. Today's statutory and regulatory structure does not contain such a definition, though a number of statutory provisions establish a kind of outline for universal service policy for Colorado. Utilities not jurisdictional to the COPUC--cooperative electric associations and municipal electric utilities--approach universal service issues as individual entities.

As used by the Panel, universal service applies to a customer's connection to "wires"—the distribution system and the provision of a standard offer service for electricity supply (also called Provider of Last Resort).

Panel's Recommendations (two-thirds or more of the Panel Members support):

Universal service

- If retail electric competition is adopted, the current status of universal service in Colorado is likely to be negatively impacted.
- The legislature should establish a statewide definition of universal service to include access to an affordable block of basic, reliable and quality services for all customers.
- The legislature should establish a broadly worded obligation on competitive market participants to ensure universal service without specific funding or program prescriptions.
- The legislature should establish options for performance based regulation (PBR) for distribution utilities incorporating universal service and service quality standards.
- The Panel voted that a new state agency should not be created to be the provider of last resort.
- The Panel voted that the provider of last resort should not create a "Universal Service Facility." Under this concept, the provider of last resort would have the option of ceding the risk of a customer's account to this Facility or retaining the customer in its own portfolio.
- The Panel voted that the provider of last resort should not create a Joint Participation Association (JPA). Under this concept, all electric generators would be required to participate in a JPA that would agree to handle "involuntary" customers whom the competitive market does not choose to serve.
- The Panel voted that state regulatory officials should not promulgate a standard set of rates and terms for customers in the high-risk pool.
- The Panel voted that state regulatory officials should not create a mechanism to conduct periodic competitive auctions of the right to serve as the provider of last resort.

Affordability of Distribution Services

- The Panel voted that if retail electric competition is adopted, the current status of the affordability of distribution services in Colorado is not likely to be positively impacted.

Reliability

Background: The Panel's energy modeling consultant, Stone & Webster, stated: "We strongly believe that there is no reason that the reliability of generation supply needs to decrease due to the introduction of retail competition. However, we believe equally strongly that, except in fairly unusual circumstances, it is not enough to simply state that generation reliability will not be degraded; instead, mechanisms to ensure that generation reliability is not degraded must be established. It is important to note that generation supply reliability is not free. Establishing a reserve margin and a mechanism to enforce it increases the total amount that customers must pay for electricity. In order to maintain adequate reserves, Stone & Webster projects that 4,700MW (megawatts: one megawatt will provide electric service to 1,000 houses for one year) of new generating capacity will be needed during the 2000-2017 period."

Panel's Recommendations (two-thirds or more of the Panel Members support):

- The Panel voted that retail electric competition will not increase the reliability of generation supply in Colorado.
- Load serving entities should be required to have an amount of capacity under their control equal to their peak load, plus a regionally specified reserve margin.
- The Panel voted that retail electric competition will not increase the reliability of transmission in Colorado.
- Colorado utilities should participate in an Independent System Operator framework if retail electric competition is adopted in Colorado, and ISO type entity is necessary to mitigate transmission market power.
- The Panel voted that a for-profit transmission company would not provide a more cost-effective option for Colorado than an ISO if retail electric competition is adopted.

Discussion of the Panel's vote: With respect to universal service, a simple majority voted that if retail electric competition is adopted, new legislation will likely preserve universal service for utilities covered under restructuring law. In addition, a simple majority voted that the provider of last resort responsibility should be assigned to the incumbent utility (of the various provider of last resort options, none received more votes).

Regarding the affordability issue, a simple majority voted that new legislation will likely be required to preserve the current level of affordability of distribution service, if electric restructuring is implemented.

A simple majority of the Panel voted that retail electric competition will decrease the reliability of generation supply in Colorado. Finally, a simple majority of the Panel voted that cost-shifting is a problem in establishing an ISO and the Panel should recommend a process or legislative language to develop either an ISO or a transmission company.

(3)(h) AN ASSESSMENT OF THE LIKELY EFFECTS THAT THE INTRODUCTION OF RETAIL COMPEITITION MAY HAVE ON THE EMPLOYEES OF ELECTRIC UTILITIES.

Background: While demand for electricity is increasing, employment at utilities is declining. There is a relationship between skilled employees and system reliability.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If electric competition is introduced, mitigation measures are generally deemed necessary to safeguard utility employees.
- Where performance regulation is applied, specific performance standards should be imposed.
- A systems benefits charge should be assessed, for a reasonable transition period, to support employee retraining, relocation, early retirement, and severance packages.
- Utilities should adopt minimum standards for training and certification of any, and all, employees who operate and maintain electric generation, transmission, or distribution facilities.
- Restructuring could create new demand for a broad range of services, thus leading to staffing growth.

Discussion of the Panel's vote: A simple majority of the Panel voted to create a legal liability to apply to utility service providers whose failure to maintain an adequate work force leads to property losses or personal injury. A simple majority supports a requirement that if utilities are forced to divest generation, the new buyer must retain employees for two years. In addition, a clear timetable should be adopted, including a date certain for restructuring, in order to resolve market uncertainty and resolve employee levels. Finally, increased demand for utility services could lead to wage increases, worker shortages, and a partial reversal of staff reduction trends.

(3)(i) AN ASSESSMENT OF THE LIKELY EFFECTS OF THE INTRODUCTION OF RETAIL COMPETITION ON RURAL COMMUNITIES, RURAL AREAS, AND RURAL CONSUMERS OF ELECTRICITY.

Background: Representatives from rural utilities and rural communities consider electricity to be something more than a commodity, and that local control is an essential part of the rural human and economic infrastructure. The differences in distribution costs between rural and urban utilities raise concerns that rural communities will not be attractive markets for energy service providers.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- The Panel voted that if competition is adopted, rural communities, rural areas, and rural consumers of electricity generally will not be positively impacted or will not essentially remain unchanged.
- Opt-in/opt-out provisions (for municipal electric utilities and rural electric cooperatives) should be included if the legislature decides to implement restructuring.
- Transmission and distribution should remain as regulated functions.
- Metering and billing should remain regulated parts of the distribution franchise.
- Local bypass should be prohibited.

Discussion of the Panel's vote: A simple majority of the Panel voted that rural communities, areas, and consumers will be negatively impacted by retail electric competition. In addition, a systems benefits charge to cushion or offset these potential impacts on rural customers should be adopted.

(3)(j) AN ASSESSMENT OF THE IMPACT ON COMPETITION, INCLUDING ANY COMPETITIVE ADVANTAGE AFFORDED TO ANY PROVIDER OF ELECTRICITY, INCLUDING INVESTOR-OWNED UTILITIES, COOPERATIVELY OWNED UTILITIES, MUNICIPALLY OWNED UTILITIES, AND INDEPENDENT POWER PRODUCERS, PROVIDED BY ANY FEDERAL, STATE, OR LOCAL LAWS. ISSUES TO BE ASSESSED SHALL INCLUDE, BUT NOT BE LIMITED TO, DEFFERING TREATMENT UNDER TAX LAW, PREFERENTIAL ACCESS TO FEDERAL ELECTRICITY, ACCESS TO LOWER THAN MARKET RATE CAPITAL AND PREFERENTIAL SALES.

Background: The resolution of federal, state, and local jurisdictional issues promises to be one of the most complex and difficult facing policy makers considering comprehensive electric industry restructuring. In order to create a "level playing field" for all competitors, one is confronted with a broad range of complex technical, financial and legal issues. The current industry structure and different treatment for municipal, cooperative and investor-owned utilities is a result of historical circumstances and must be carefully considered in creating more competitive markets.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- Existing legal requirements could impose both unfair competitive advantages and unfair competitive disadvantages on existing and potential providers of electric service if retail competition is adopted.
- It is likely that municipal utilities will gain a competitive advantage over other utilities due to differing treatment under the tax laws.
- It is likely that municipal utilities will gain a competitive advantage over other utilities due to access to lower-than-market-rate capital.
- If competition is introduced, all utilities should be subject to the same laws concerning public documents and open meetings.
- A utility would be placed at a competitive disadvantage if its competitors could view contracts, marketing strategies and business plans and it could not view similar documents produced by competitors.
- All market participants should be subject to the same reporting requirements.
- Restructuring legislation should include provisions that public power utilities are entitled to the same privacy protections regarding public documents and meetings that investor-owned utilities currently enjoy.
- The resale of preference power should be prohibited (already prohibited by current federal law).
- Rules concerning access to lower-than-market capital should not benefit some while creating disadvantages for others.
- If a public power entity wishes to compete outside its traditional service territory, it should be subject to the same financial and regulatory requirements as investor-owned utilities.
- Standards of conduct should include a requirement that regulated transmission and distribution companies share market information equally and simultaneously with all competitors, including the utilities' affiliates.
- Wholesale wheeling should be fully implemented and its results evaluated before moving to retail competition.

Discussion of the Panel's vote: A simple majority of the Panel voted that investor owned utilities would gain a competitive advantage due to differing treatment under the tax law and due to access to lower than market rate capital. Consistent with the vote in the market power section, a simple majority voted that to guard against cross-subsidization, the monopoly and competitive holdings of electric utilities must be divided into separate and distinct subsidiaries.

(3.5)(a) LICENSING REQUIREMENTS FOR SUPPLIERS OF ELECTRIC ENERGY.

Background: Every state that has moved to retail competition has authorized its public utilities commission to license suppliers. Licensing requirements should be sufficiently comprehensive to protect customers without raising unreasonable barriers to entry on the part of potential electricity suppliers.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If retail competition is adopted, licensing requirements should be instituted for new suppliers.
- The following specific requirements were approved by a two-thirds majority of the Panel:
  - Identification of the electricity provider, including DBAs (doing business as), and affiliated interests.
  - Proof of authority from Colorado Secretary of State to do business in Colorado.
  - Availability of regulatory and customer contact information.
  - Description of how service will be provided.
  - Description of customers and territory to be served.
  - Agreements to comply with rules and contribute to State funds.
  - Annual reporting requirements.
  - Demonstration of financial and technical fitness.
  - Attestation by authorized representative as to the accuracy of the information included in the application.
  - Disclosure to licensing authorities of cost information by the electricity supplier to prevent predatory pricing, and
  - Other such requirements that the public utilities commission deems to be in the public interest.

Discussion of the Panel's vote: In addition to the Panel's Recommendation that licensing requirements be adopted for new suppliers, a simple majority voted that licensing requirements be imposed on all suppliers of electricity.

(3.5)(b) LOCAL CHOICE PARTICIPATION OPTIONS FOR COOPERATIVELY-OWNED AND MUNICIPALLY-OWNED UTILITIES.

Background: About 38% of Colorado electricity is sold through municipal and rural cooperative utilities. Of the first 19 states to adopt restructuring legislation, all but one have provided an option for municipal utilities to participate in, and be subject to, restructuring.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If retail competition is adopted, cooperatively-owned and municipally-owned utilities should have the right to choose whether to participate in the competitive market for electricity.
- On the question of whether a local governing body should be able to annex and take service territory from neighboring utilities without opening its service territory or franchise to competition, the Panel voted "no."
- Municipal or cooperative systems should be required to open their traditional service areas to competition as a condition of allowing these entities to provide competitive generation services outside their traditional service territories.
- A distribution customer of a utility participating in retail competition should have grandfather rights preserving the customer's ability to choose a competitive electric supplier upon annexation by a municipal utility that has not chosen to participate in competition.
- Rates, terms and conditions for on-going regulated distribution service offered through municipal utilities and RECs should be established by the local governing body.
- Consistent with existing law, exclusive distribution service areas should be maintained to avoid duplication of electric service and additional costs.
- The local distribution company should continue to own, operate and maintain all distribution facilities
- The constitutional and statutory right of consumer-owned utilities to establish their own rates should be maintained.
- Generation and transmission associations, or a municipal joint action agency would be allowed to compete on a comparable basis to the extent that any of their members based in Colorado opted in for competition.

Discussion of the Panel's vote: A simple majority voted that if electric competition is adopted, the local governing bodies operating cooperatively-owned and municipally-owned utilities have the right to establish the rules implementing the "opt-in' decision. In addition, the incumbent utility should have the right to retain an existing customer by matching any bona fide offer to provide comparable power at comparable prices.

(3.5)(c) MARKET POWER AND MEASURES TO MITIGATE SUCH MARKET POWER.

Background: Courts often define market power as the ability to control prices or to exclude competition. When effective competition doesn't exist in the electric utility industry, a firm or group of firms is said to have market power and can profitably set their price above the cost to produce the next unit of electricity. Horizontal market power is the ability to raise prices based on share of the market for a single product. Vertical market power is the ability to raise prices for one good, such as generation, as a result of controlling one or more other levels of the supply chain (such as transmission or fuel supply).

Panel's Recommendations (two-thirds or more of the Panel Members support):

- If competition is adopted, an excessive degree of market power would exist in the Colorado electricity market.
- A specific definition of effective competition should be in place before restructuring occurs in order to prevent the creation of entities with excess market power.

Treatment of utilities' affiliates

- Competitive services must be provided by a utility's affiliate that is separate from the provider of non-competitive services, with no opportunity for preferential treatment of the affiliate.
- If vertical divestiture is not required, provide extensive authority to prevent abuse of affiliate transactions, including imposition of affiliate transaction rules.
- Adopt and enforce appropriate standards of conduct governing the relations and transactions between the monopoly and its competitive affiliate.
- A noncompetitive affiliate, such as a transmission or distribution company, should not share essential resources (for example, personnel or equipment) with its competitive affiliate.
- Prohibit electric providers from coercing or inducing their customers towards the purchase of non-regulated goods and services from affiliates.

Regulatory Authority

- The Panel voted unanimously to provide regulators with the authority and tools to limit the exercise of excessive market power.
- The Panel voted unanimously to provide regulators with the authority to ensure non-discriminatory access to transmission and distribution (including the imposition of just and reasonable rates for access).
- Provide regulators with the authority to monitor and investigate market conditions (including the authority to gather evidence, hold hearings, and order corrective action that includes penalties and restitution).
- In the case of adoption of a poolco structure, ban capacity withholding.

Discussion of the Panel's vote: The Panel's Recommendation as discussed above envisions the implementation of functional unbundling. It should be noted that a simple majority of the Panel voted to require vertical divestiture, separating the ownership of generation from the ownership of transmission and distribution facilities, and further to require utilities to divest assets to multiple non-affiliated companies that do not own a large portion of the Colorado generation capacity, and to decide how generating units should be bundled for divestiture. In addition to the regulatory authority noted in the Panel's Recommendations, a simple majority voted to provide regulators with the authority to apply conditions or limitations on mergers to protect ratepayers, promote competition, or prevent anti-competitive actions. Finally a simple majority voted to allow for market structures in addition to poolcos (such as bilateral markets).

(3.5)(d) EXISTING LEGAL REQUIREMENTS THAT COULD IMPOSE UNFAIR COMPETITIVE ADVANTAGES AND DISADVANTAGES ON EXISTING AND POTENTIAL PROVIDERS OF RETAIL ELECTRIC SERVICE.

Background: The Panel determined that this requirement was substantially the same as the requirement (3)(j). Therefore, the Panel's decision regarding this requirement is reported in the earlier section.

(3.5)(e) TRANSITION ISSUES.

Background: The consideration of transition issues involved two general areas: 1) the phase-in of restructuring and 2) the use of pilot programs.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- Utilities that will participate in competition should file implementation plans with the COPUC.
- Although the Panel did not achieve a two-thirds majority with respect to whether restructuring should be implemented simultaneously for any class, or whether one particular customer class should go first, the Panel recommends that if the dates for access to retail competition vary by customer class, the legislature should establish a date for each customer class.
- While the Panel did not achieve a two-thirds majority concerning whether pilot projects should be mandatory or optional for participating utilities, the Panel recommends that pilot projects should be used to learn about implementation issues for residential customers.

Discussion of the Panel's vote: With respect to phase-in of competition, a simple majority voted that restructuring should be implemented in the residential sector first and should not be implemented first in the commercial and industrial sector. While there was not even a simple majority on the overall question of whether pilot projects should be used to learn about restructuring issues, a simple majority voted that if pilots are to be used, they should be optional and not mandatory and should be used to learn about customer reaction in specific geographic locations.

(3.5)(f) ANY OTHER ISSUE DEEMED APPROPRIATE BY THE PANEL.

Background: The Panel determined that three additional issues were appropriate for consideration.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- **Distributed generation**: A majority of the Panel voted that the consideration of distributed generation is relevant to the Panel's work and utilities should be encouraged to integrate distributed resources into their systems.
- **Value added products and services (e.g., telecommunications, appliance repair, security services, green energy products, etc.):** The majority of the Panel voted that these issues are relevant to the Panel's work and will benefit customers. In addition, the majority voted that all utilities and energy service providers should be equally able to offer value-added products and services if they choose.
- **Aggregation:** The majority of the Panel approved the concept that municipal/community aggregation should be accomplished through a voluntary cooperative buying group.

Discussion of the Panel's vote: In addition to the Panel's Recommendation that distributed generation should be integrated into utilities systems, a simple majority of the Panel that distributed generation should not be considered primarily as a customer-centered matter. With respect to aggregation, a simple majority supports a strong community choice "opt-out" form of aggregation, where a community, whose utility is subject to competition, can choose to aggregate for all of its citizens and businesses except those who want to be served by another supplier.

Timing and Implementation

In addition to addressing the sixteen individual issues discussed above, SB 98-152 requires the Panel to address timing and implementation questions irrespective of the Panel's opinion of whether the Panel believes that restructuring is in the best interests of all Colorado electricity consumers and the state as a whole. This portion of the Final Report is intended to fulfill the requirements of Section 40-4-113(2)(f), which states:

> "The report shall address the manner in which restructuring should be implemented, including the timing of implementation, if the general assembly decides to go forward with implementation of electric industry restructuring."

Timing: To fulfill the first portion of this requirement, the Panel considered a series of questions concerning the timing of restructuring if the Legislature decides to go forward.

Panel's Recommendations (two-thirds or more of the Panel Members support):

- There should be a designated length of time between the passage of any restructuring legislation and the implementation of restructuring.
- The Panel voted that the length of time between the passage of any restructuring legislation and the implementation should not be less than six months. In addition, the Panel voted "no" to a one to two year implementation period.
- Wholesale competition should be fully implemented and its results evaluated before moving to retail competition (from the Competitive Advantage section).

Discussion of the Panel's vote: The Panel was presented with a series of time periods over which the implementation of restructuring should occur. While no time period received a two-thirds majority "yes" vote of the Panel, eleven Members selected two to three years and eleven selected greater than three years. Four Members selected six months to one year and two Members selected one to two years.

Implementation: As noted earlier, SB 98-152 generally requires the Panel to address the manner in which restructuring should be implemented if the General Assembly decides to go forward with electric industry restructuring. This section describes the Panel's Recommended View on how retail electric competition should be implemented, if the General Assembly decide to go forward with restructuring. This is based on the Panel's Recommendations, that is, those options that received two-thirds or more of the Members' votes. Please note that this Section will not report in detail the many majority views that are contained in the first part of this Section. Instead, this Section provides a broader overview of how the Panel recommends that

restructuring should be implemented and focuses on recommended actions that should be taken. This section discusses the industry structure, continued regulatory provisions, market power, and the expected rules for the various industry participants. This is followed by a consideration of various mitigation measures that the Panel has determined is appropriate, such as: consumer protection, low-income provisions; the consideration of renewable energy, energy efficiency, and the environment; taxes; and utility employees. This Section concludes with a discussion of systems benefits charges and the use of performance based regulation.

General Industry Structure

At the heart of retail electric competition is the concept of customer choice, which means that retail electric customers in Colorado would have the opportunity to select their supplier of electricity. Transmission and distribution functions would remain a regulated monopoly subject to either COPUC regulation in the case of investor-owned utilities and non-exempt cooperatives and local governing body regulation in the case of municipal electric utilities and exempt rural electric cooperatives.

In its consideration of reliability, the Panel determined that all Colorado utilities should participate in an Independent Systems Operator (ISO). The Panel expressed the concern that the state of Colorado may be too small for an efficiently functioning Colorado-only ISO, but participation in a larger geographic area ISO is essential to help mitigate market power concerns in a restructured retail system.

In its consideration of stranded cost issues, the Panel determined that stranded costs or benefits should be determined on a settlement basis. Under this approach, the requesting utility would submit an application to its regulatory agency (either COPUC or local governing body in the case of municipal systems or rural electric cooperatives) proposing the amount and treatment of stranded costs or benefits. In addition, the Panel determined that stranded costs or benefits should be recovered or paid to the various customer classes on a usage allocation basis. Finally, the Panel voted that stranded costs should be recovered on a fair and equitable basis that does not place undue burdens on residential or small commercial customers.

Continued Regulation of Distribution Utilities. The Panel voted for the following provisions concerning continued regulatory treatment of Colorado distribution utilities:

In its consideration of local choice issues, the Panel determined that the local governing body should establish the rates, terms and conditions for regulated distribution service; exclusive distribution service territories should be maintained in accord with existing law; the local distribution company should continue to own and operate distribution facilities; and consumer-owned utilities should have the constitutional and statutory right to establish their own rates.

In its consideration of low-income issues, the Panel determined customer service charges (distribution service) should continue to be regulated as a local distribution company function.

From the rural impacts section comes the requirements that transmission and distribution should remain as regulated functions, metering and billing should remain regulated, and local bypass of the incumbent utility's transmission and distribution system should be prohibited.

Market Power

The Panel voted that if competition is adopted, an excessive degree of market power would exist in the Colorado electricity market. The Panel's recommended implementation plan

requires separate affiliates to provide competitive and non-competitive services, the imposition of affiliate transaction rules, and standards of conduct governing affiliate relations. In addition, regulators should be given the authority and tools to limit the exercise of market power. Note that electricity suppliers must disclose cost information as a part of licensing requirements. Finally, the Panel voted to ban capacity withholding in the event a poolco structure is adopted.

Treatment of Industry Participants

The Panel's recommended implementation plan consists of detailed descriptions of rules governing the future industry participants in a restructured electric industry.

In the local choice provisions, the Panel determined that cooperative and municipally owned utilities should have the right to choose whether to participate in the competitive market. Such an "opt-in" right is consistent with how other states have addressed participation by municipal and cooperative electric systems in retail restructuring. This opt-in provision was also approved by the Panel in the rural impacts section. The Panel determined that if customer-owned utilities provide competitive retail generation services outside their traditional service territories, they must first open up their distribution service areas to competition. Finally, a generation and transmission cooperative or a municipal joint action agency should be allowed to compete on a comparable basis to the extent that any of its members based in Colorado opted into competition.

As part of the competitive advantage provisions, the Panel determined that reporting requirements and access to capital should be equal for all participants; public power utilities should be given the same privacy protections as IOUs; the resale of preference power should be prohibited as is the case under existing federal law and regulations; and public power utilities should be subject to the same financial and regulatory requirements as IOUs, if they choose to compete outside their traditional service territory.

Consumer Protection

The Panel's Recommended implementation plan consists of a strong set of requirements from the Consumer Safeguards, the Licensing, the Universal Service, and the Local Choice sections discussed above.

The Consumer Safeguards requirements include a disclosure label showing price and resource mix, as well as a standard offer service at cost-based rates with the incumbent utility as the default provider. Additional consumer safeguards include: a statewide consumer education program, quality of service through performance based regulation; universal service; regulation of debt and collection practices; consumer privacy provisions; customer aggregation; prohibition on unfair trade and marketing practices; and the establishment of a dispute resolution process and enforcement tools with the ability to levy fines.

The Licensing Requirements apply to new electricity suppliers and include: identification, proof of authority to do business, regulatory and customer contact, service description, agreement to comply with state rules and contribute to state funds, annual reporting requirements, demonstration of financial and technical fitness, attestation to information accuracy, and disclosure of cost information to prevent predatory pricing. Finally, the Panel suggests the COPUC be authorized to impose additional requirements it deems to be in the public interest.

From the Local Choice section comes the provision that the distribution customer of a utility participating in retail competition should have grandfather rights preserving the distribution customer's ability to choose a competitive electric supplier upon annexation by a municipal utility that has not chosen to participate in competition.

The Panel recommends supporting municipal/community aggregation through a voluntary buying group.

As a part of the Universal Service considerations, the Panel determined that the General Assembly should consider the establishment of a statewide universal service definition, should obligate all competitive market participants to ensure universal service, and should incorporate universal service standards in performance-based regulatory plans.

Low-Income Issues

The Panel's recommended implementation plan consists of periodic studies to determine the impact of competition on low-income customers, a systems benefits charge to fund low-income energy assistance programs, no undue discrimination, the regulation of customer service charges and the use of a quality of service metric in a performance-based regulation mechanism.

Renewables, Energy Efficiency, and Environmental Issues

The Panel's recommended implementation plan consists of maintaining the historic level of investments in renewable resources and energy efficiency during some transition period. The plan also includes requiring periodic disclosure and labeling for electric power, and relying on tax incentives for renewable energy support. The Panel supports the use of voluntary green marketing for renewable energy, energy service companies to deliver energy efficiency, and finally, requiring generators to meet existing air quality standards.

Taxes

If electric competition is implemented, the amount of taxes, fees and other revenues paid to Colorado's taxing authorities is likely to decrease, and the collection of revenues is likely to become more complex. The Panel's recommended implementation plan calls for including in the restructuring legislation various adjustments to the tax law. The goals of these tax law changes are to provide a level playing field for all industry providers and their customers, place out-of-state providers on a comparable basis with in-state providers, and eliminate revenue losses to state and local governments.

Utility Employees

The Panel's recommended implementation plan consists of a systems benefits charge, to be implemented during some transition period, to support employee retraining, relocation, early retirement, and severance packages. In addition, minimum employee training and certification standards are recommended, and specific performance standards are recommended where performance regulation is applicable.

Systems Benefits Charge

The Panel has recommended the adoption of a systems benefit charge to support utility employee programs and provide assistance to low income consumers. The following provisions would apply to the systems benefits charge.

- A systems benefits charge in the amount of __ *[intentionally left blank]* cents per kilowatt-hour would be imposed on all sales of electricity by utilities subject to competition;
- The System Benefits Charge shall be separately stated on the consumer's bill and will fund the low-income and utility employee provisions.

Performance-Based Regulation

If electric restructuring is adopted, reliable service should be assured by setting performance-based quality of service standards.

- Utilize a quality of service metric, such as customers' satisfaction, business office performance, service reliability, and regulatory performance measurements for low-income customers.
- The General Assembly should establish options for performance-based regulation for distribution utilities incorporating universal and service quality standards.

COLORADO ELECTRICITY ADVISORY PANEL EVALUATION STUDY REPORT

SECTION TWO

A REPORT ON THE PANEL'S PROCESSES

Acknowledgments

The Electricity Advisory Panel (the Panel) acknowledges the work of its contractors, the appearance by subject matter experts, and the Staff of the Colorado Public Utilities Commission ("COPUC Staff" or "Staff"). The Evaluation Study Report contains language from all of these sources.

The Legislative Intent to Conduct a Study

In enacting Senate Bill 98-152, the legislature stated:

> Certain states are implementing electric industry restructuring and retail competition. Other states are studying the issue. In addition, the United States Congress is considering the issue. The General Assembly needs to be thoroughly prepared to consider the implications of electric industry restructuring proposals on the citizens, businesses, and economy of the State. Before any changes are made in Colorado's existing system of retail electric service regulation, an objective analysis of retail electric industry restructuring issues should be undertaken in order to evaluate on an impartial basis the potential risks, benefits, and impacts of restructuring on all Colorado consumers and the state as a whole. Experience has shown that utilizing the best technical advice currently available, drawing upon both public and private sources, can lead to a more informed legislative decision and thereby better help to shape public policy for the future.

Study Tasks

In addition to asking the Panel to advise on whether restructuring is in the best interest of Colorado and to make recommendations regarding implementation and timing, the legislature specified certain issues be studied and assessed. At a minimum the legislature mandated that the following restructuring issues be evaluated:

1. Compare electric rates and costs in Colorado with other states.
2. Assess whether retail competition will be expected to reduce or increase rates for each category of customer.
3. Identify and assess what consumer safeguards may be necessary.
4. Assess the potential impacts on development of renewable sources of supply.
5. Analyze the effects of retail competition on the amount and collection of taxes.
6. Assess whether Colorado utilities will incur stranded costs and investments.
7. Assess the impacts on the requirement of universal service and reliability of service.

8. Assess the likely effects on employees of electric utilities.
9. Assess the likely effects on rural communities, rural areas, and rural consumers.
10. Assess competitive advantages afforded to the various types of electricity providers.
11. Recommend licensing requirements for suppliers of electric energy.
12. Recommend local choice participation options for cooperatively-owned and municipally-owned utilities.
13. Determine the potential for the exercise of market power and measures to mitigate such market power.
14. Determine whether existing legal requirements could impose unfair competitive advantages and disadvantages on existing and potential providers of retail electric service.
15. Determine transition issues; and
16. Address any other issue deemed appropriate by the Panel.

Reports to the Legislature and Governor

Interim Report

The General Assembly mandated that an Interim Report be submitted to the legislature by November 1, 1998. This was completed, and is accessible in the electronic appendix to this report.

Draft Evaluation Study Report

Senate Bill 98-152 requires that a Draft Evaluation Study Report be released to the public by July 1, 1999. This was completed, and is accessible in the electronic appendix of this report.

The Final Report

The Final Report is due by November 1, 1999. The Final Report takes into account public input and contains specific findings and advice to the General Assembly and the Governor. The findings and advice are based upon studies and assessments of the Panel spanning a fifteen-month period (July 15, 1998 to October 30, 1999). As required by Senate Bill 98-152, the Final Report contains the Panel's assessment of whether restructuring of the retail electric industry is in the best interests of all classes of Colorado electricity consumers and the state as a whole. In addition, the Panel provides recommendations regarding implementation and timing of restructuring if the General Assembly were to determine that it wants to proceed with restructuring Colorado's electric industry. The Final Report contains the Panel's Recommendations on all issues on which two-thirds or more of the Members of the Panel agree, and contains narratives on many issues where a Panel vote of a simple majority agreed. The statute states that a minority report on any of such issues will be included at the request of one or more of the dissenting Members. This has been accomplished by inclusion of these views in the Executive Summary and Section One of the Final Report.

The General Assembly may consider electric industry restructuring legislation during the Year 2000 legislative session. The Final Report contains data and recommendations that should be pertinent to those deliberations.

The Panel's Budget

The General Assembly provided $219,156 to fund the efforts of the Electricity Advisory Panel, and $50,000 to the Colorado Office of Consumer Counsel to support the OCC with additional research assistance. In addition, the Panel received $175,000 from the Governor's Office of Energy Management and Conservation to supplement the legislative authorization. Although the statute provided for receipt of private monies, no further support was solicited or received from other sources. The Director of the Colorado Public Utilities Commission was mandated to provide ministerial assistance, including contracting, budget management, arrangements for meetings and speakers and necessary staffing to ensure the timely delivery of reports.[6] The total Panel budget for the fifteen-month effort was $394,156. The Panel allocated $310,000 to research contractors and $20,000 to a Report Writer. The remaining $64,156 was allocated to printing, postage, books, Panel travel to public meetings, and other administrative expenses. The Members of the Panel generally served without compensation for their participation.[7]

Members of the Panel

The following Members were appointed to serve on the Panel. Governor Romer appointed twelve members; Senate President Norton appointed nine members; and Speaker of the House George appointed eight members (a ninth appointment was made, who subsequently resigned).

Name	***Affiliation***	***Representing***
Blank, Eric	Land and Water Fund of the Rockies	Environmental interests
Bonavia, Paul	Public Service Co. of Colo.	Investor-owned electric utility
Brown, Karen	Colo. Energy Assistance Foundation	Low-income consumers
Broyles, David	First National Bank, Alamosa	Residential consumers in a county w/ a population of less than 30,000
Clifton, Ray	Colorado Rural Electric Association	Cooperatively-owned distribution electric utility
Demel, Jerry	Tri-State Generation & Transmission	Cooperative-owned generation and transmission association

[6] Staff Members who worked with the Panel on a multitude of tasks include Gary Schmitz, economist; Morey Wolfson, Assistant to the Commissioners; Saeed Barhaghi, engineer; and Shirley Wallace, secretary. The Panel acknowledges the important contribution of their report writer, Steve Andrews.

[7] The exceptions are by a provision in SB 98-152 that states: "members who represent residential and low-income consumers shall be entitled to reimbursement for their reasonable and actual expenses incurred to attend meetings" and a provision in SB 99-169 that states that "all panel members are entitled to reimbursement for reasonable and actual expenses incurred to attend the public meetings associated with obtaining public comment on the Panel's Draft Report."

Entz, Lewis	Hooper	Agricultural consumer of electric energy
Henderson, James	Arkansas River Power Authority	Joint action agency
Holgerson, Thomas	T.K. Construction Company of Rye	Small business consumers who employ less than 50 persons
Hollingsworth, Dale	Grand Junction	Fixed income, senior, citizen
Hopper, Jay	KN Power	Independent power generator, producer, or provider
Janosec, Joe	Moffat County Commissioner	County where electricity is generated, coal and gas.
Kort, Roger	WestPlains Energy, Pueblo	Investor-owned electric utility that distributes electricity
Lehr, Ronald	Attorney, Englewood	Renewable energy producers
Lewis, Richard	Prima Energy, Denver	Business that produces natural gas in Colo. for sale to electric utilities
Mason, Robert	AFLCIO Local #111 IBEW, Denver	Utility employees
McCulloh, Charles	Peabody Coal Company, Craig	Business that mines or produces coal in Colo. for sale to electric utilities
Michie, Thaine	Platte River Power Authority	Municipally-owned utility that generates electric energy
Oaks, James	Mountain Nat'l Bank, Woodland Park	Commercial consumer of electric energy
Packer, Eugene	Hewlett Packard, Fort Collins	Industrial consumers
Ramsey, Kerry	Denver	Residential consumers
Reif, Kenneth	Office of Consumer Counsel	Office of Consumer Counsel
Runco, Guy	I.B.E.W. 667, Pueblo	Distribution utility employees
Rutledge, Donald	Yuma	Agricultural irrigators
Spensley, James	Denver	At Large

Tollefson, Phillip	Colorado Springs Utilities	Municipally-owned electric utility that distributes electricity
Wattenberg, Dave	State Senator, Walden	At Large
Wedding-Scott, Jacque	Lakewood Finance Director	Municipal government
Williams, Robert	Engage Energy, Denver	Marketer or broker of electricity

The Panel's Work Plan

Pursuant to legislative direction, the Colorado Public Utilities Commission (COPUC) prepared a draft work plan and budget on June 26, 1998. The work plan proposed that the Panel retain professional research services from consultants who would bid for specific issue assessments mandated by the legislation. The work plan also offered that the COPUC Staff would conduct certain tasks. The Panel approved the Work Plan with minor modifications at their first meeting on July 13, 1998. At this meeting, the Panel also elected Senator Dave Wattenberg as Chairman, and Lewis Entz as Vice-Chairman. The Panel created four Subcommittees to prepare draft Requests for Proposals (RFPs) to contractors to bid for research and consulting work. These detailed RFPs carefully tracked the statutory requirements for studies and assessments, and were issued on September 25, 1998. Twenty companies submitted responses to the RFPs.

Selection of Contractors and the Scope of their Tasks

Following an evaluation period that narrowed the field based on contractors' qualifications, the Panel selected three contractors on November 13, 1998:

Stone & Webster Management Consultants was awarded a $180,000 contract to conduct a detailed energy and economic computer modeling of the Colorado and regional interconnected electric system. Stone & Webster was assigned the tasks of: assisting the Panel in its assessment of the expected impact on rates in Colorado if retail competition were mandated; the impacts of restructuring on the state's economy; the nature and magnitude of stranded costs (or benefits); and the extent to which excessive market power could be exercised by one or more electricity providers in the event restructuring was implemented. The contractor was required to develop detailed baseline information about generation, transmission, and electric pricing and to employ a specific, credible computer model widely used in the industry to create a baseline database. A committee of Panel Members and their designates formed an oversight contractor management committee to ensure that Stone & Webster would use accurate data and oversight committee stipulated assumptions. The committee also worked together with the contractor to refine the assumptions underlying different competition scenarios. Data Resources International (Standard and Poor's) subcontracted with Stone & Webster to apply the modeling output to assess the economic impact on seven urban and five rural sub-regions in Colorado. The results of the Energy and Economic Modeling contractors' work is described in some detail in the "Summary of Contractors' Work" section of this report. The contractor's full report is available in the electronic appendix.

A contract team composed of Econergy International Corporation and CH2MHill was awarded a $110,000 contract to conduct Social-Economic-Legal assessments. They were tasked in their Scope of Work to conduct a detailed stakeholder analysis of industries and communities that may be impacted either positively or negatively by restructuring. Their work product resulted in a compilation of detailed assessments of Colorado electricity pricing and policy alternatives. The results of the Social-Economic-Legal contractors' work is described in some detail in the "Summary of Contractors' Work" section of this report. The contractor's full report is available in the electronic appendix.

A $20,000 contract was awarded to Roger Colton to assess the potential impact of restructuring on low-income electric customers. The results of the Low-Income Issues contractor's work is described in some detail in the "Summary of Contractors' Work" section of this report. The contractor's full report is available in the electronic appendix.

The Staff of the Colorado Public Utilities Commission was tasked by the Panel to conduct certain research tasks, including rate comparisons, consumer safeguards, licensing, transition issues, and a history of the Colorado electric utility industry and regulatory structure. The results of this work is explained in some detail in the "Summary of Contractors' Work" section of this report.

By agreement between the Panel, the COPUC Staff and the Office of Consumer Counsel (OCC), the Staff relied on the work of a Consumer Affairs Consultant, Barbara Alexander, to prepare consumer safeguards information for the Panel. The results of this work is explained in some detail in the "Summary of Contractors' Work" section of this report. The OCC made separate arrangements to retain the Tellus Institute to assist the OCC with the study. The contractors' full report are available in the electronic appendix.

The Seminar and Dialogue Series

During the time the contractors were preparing their studies, the Panel hosted day-long monthly Seminar and Dialogue Series. These took place from November 1998 through April 1999. The Series meetings were free and were open to the public, providing an educational opportunity for the Panel and the public. Approximately 50 speakers, including the Panel's contractors, key Colorado constituencies, and recognized experts gave presentations on a wide variety of restructuring topics. These topics included electric system operations, regulatory history and practice, independent system operators, the wholesale market, restructuring perspectives, views from Colorado constituents, Colorado energy resources, the Year 2000 computer problem, economic/environmental/energy trends, technological change, taxes and fees, market power, and stranded costs. The Series featured an opportunity for the Panel Members to interact with the speakers. Detailed notes from the Seminar and Dialogue Series are accessible in the electronic appendix to this report.

In addition to the contractors, the following individuals addressed the Panel:

John Allum	Platte River Power Authority
Bob Bergman	COPUC Staff engineer
Ron Binz	Co-Director, Competition Policy Institute
Joel Bladow	Regional Manager, Rocky Mountain Power Area, Western Area Power Administration
Matthew Brown	Program Director, Energy, National Conference of State Legislatures

Ken Bueche	Executive Director, Colorado Municipal League
Ron Cattany	Deputy Director, Colorado Department of Natural Resources
Jim Cappa	Chief Minerals Geologist, Colorado Geological Survey
Janis Carey	Assistant Professor, Division of Economics and Business, Colorado School of Mines
Dave Carter	Director, Colorado Chapter, Rocky Mountain Farmers Union
Charles Cicchetti	Co-Founder and Participant, Pacific Economics Group, Pasadena, California
Ed Comer	General Counsel, Edison Electric Institute
Paula Connelly	Attorney, Public Service Company of Colorado
John Conway	Attorney, Tri-State Generation and Transmission, Colorado Rural Electric Association
Tom Corr	Director of Governmental Affairs, Electric Power Research Institute
Bruce Driver	Executive Director, Land and Water Fund of the Rockies
Steve Fausett	Assistant General Manager, Transmission Planning & Regulatory Activities, Tri-State
Daniel Fessler	Partner, LeBoeuf, Lamb, Greene & MacRae; former President, California PUC
Dennis Greene	President, Metro Denver Building Owners and Managers Association
John Hilke	Economist, Electricity Project Coordinator, Federal Trade Commission
Phillip Horwitz	Manager, Discovery Unit, Tax Audit & Compliance Division, CO Dept. of Revenue
Henry Klaiman	Senior Operations Coordinator, Public Service Company of Colorado
Dave Lock	Executive Director, Colorado Association of Municipal Utilities
Ralph Lufen	Director, Colorado Electrical Contractors Association
William McEwan	Attorney, Arkansas River Power Authority
Jack McNally	International Brotherhood of Electric Workers #1245, Walnut Creek, CA
Mark Mills	Mills & McCarthy, Chevy Chase, Virginia.
Nick Mueller	Executive Director Colorado Independent Energy Association, Denver
Jeffrey Pearson	Attorney at law, Kelly/Haglund/Garnsey/Kahn LLC
Dave Penn	Deputy Director, American Public Power Association
Bob Pomeroy	Holland and Hart, representing industrial customers
Marc Roper	Manager, Renewable Energy Programs, Gov.'s Office of Energy Conservation
Rich Rosen	Tellus Institute
Ken Ross	Director, Structured Power, West Region, Engage Energy
Terry Ross	Center for Energy and Economic Development (CEED)
Dennis Senger	Colorado Springs Utilities
Fred Stoffel	Managing Director, Regulatory Administration, New Century Energies
Carl Stover	President, Chairman & CEO, Guernsey & Company, Oklahoma City
Jim Tarpey	Public Service Company of Colorado
Richard Timberlake	Sr. Utility Appraiser, Div. of Prop. Taxation, CO Dept. of Local Affairs
David Wagman	Resources Data International
Terri Walters	Sr. Project Manager, State & Local Initiatives, Nat'l Renewable Energy Lab.
Joe Wilson	Attorney, Colorado Association of Municipal Utilities

Public Participation

Senate Bill 98-152 encouraged public participation in all Panel activities. The Panel took many steps to meet this expectation. All meetings of the Panel, including subcommittee meetings and planning meetings, were open to the public. All Panel meetings contained an agenda item for public participation at the beginning of each meeting. Following the Panel's first meeting, a letter was sent to over 500 individuals identified as likely to have an interest in the Study Panel's activities. The primary purpose of the letter was to encourage the recipient to visit the Panel's

website, which contains notices of meetings, minutes of meetings, the work plan, budget, instructions on how to contact the Panel, and other pertinent information. The public also was encouraged to attend the Seminar and Dialogue Series.

In July and August 1999, the Panel issued press releases to inform the public about six public comment hearings (Craig, Montrose, Durango, Ft. Morgan, Denver, Pueblo) designed to hear directly from the public. A total of 199 individuals spoke. One hundred and sixty-one speakers were opposed to restructuring. Twenty-one speakers favored restructuring. Seventeen speakers were undecided. The following entities sent written comments to the Panel in response to the Panel's Draft Report: Allied Signal, Colorado Association of Municipal Utilities, Coloradans for Consumer Choice in Electricity, Craig Cox Consulting Service, Kirk Cunningham, Thomas G. Farnum, City of Fort Collins, City of Fort Morgan, Platte River Power Authority, John Tobin, and Del Worley.

The Panel's Decision-Making Process

At the Panel's May 6 1999 meeting, each Panel Member took a few minutes to characterize his or her views of retail competition. A record of that discussion is available to the interested reader by viewing the minutes in the electronic appendix. Panel Members displayed a wide variety of viewpoints on whether Colorado should embark upon retail competition.

During six day-long meetings in May and June 1999, the Panel reviewed detailed Issues Packets which summarized the contractors' output and other information. These Issues Packets are available to the reader by viewing "Issues Packets" in the electronic appendix to this report. The Panel then employed a straw vote balloting process to develop the Panel's views on the Panel's Study Tasks. The voting tallies on these votes are available to the reader by viewing "Tallies" in the electronic appendix to this report. Following the six public meetings and receipt of written comments, the Panel decided to convert the straw ballots into questions that could be answered by either a "yes" or "no" vote. This was done to determine what constituted both two-third and simple majority Panel opinions on the sixteen issues that the legislature mandated to be evaluated. Over three hundred questions were asked and answered. The results of this process are reflected in the "Panel's Decisions and Recommendations" section of this Final Report. The electronic appendix contains detailed tabulations on the questions asked, a voting record, and a summary of those questions that received a two-thirds majority.

COLORADO ELECTRICITY ADVISORY PANEL
EVALUATION STUDY REPORT

SECTION THREE

A REPORT ON
ELECTRIC UTILITY INDUSTRY RESTRUCTURING ISSUES AND THE CONTRACTORS' PRODUCTS

The Electric Utility Industry Restructuring Framework

National Framework

The electric power industry in the United States is undergoing major changes that are reshaping traditional roles, creating opportunities for new participants, and redefining the scope and character of government regulation. These changes are arising out of the interaction of a number of driving forces:

- Dramatic discrepancies in rates between regions, and between utilities within regions;
- Growing regulatory and public policy support for market competition, including restructuring of the natural gas and wholesale electric markets;
- Large industrial customers, large investor-owned utilities and energy marketers desiring more flexibility;
- Customer demand for choice, desire for more accurate price signals, and desire to rely on market discipline rather than government regulation;
- Dissatisfaction by customers in states with high electric rates;
- Growing electricity demand resulting from a persistent – albeit modified – linkage with economic growth;
- Public perceptions and public policy regarding the dangers and costs of air and water pollution, climate modification, and industrial safety;
- The current economics of power generation and power purchase, which work against electricity producers whose costs are heavily fixed.

The electric power industry is responding to these forces by experimenting with a host of business strategies: flexible pricing for large customers; increased power purchases; consolidations through mergers and acquisitions; diversification into non-utility businesses; aggressive efforts to contain costs; new service offerings and corporate restructuring. Emerging from these experiments is a less tightly integrated, more diversified, and above all, much more competitive industry. It is an industry that, during the next decade, may shift from the traditional generation, transmission, and distribution relationships to a much more heterogeneous structure. Entities in the new regime may include utility companies fulfilling various traditional roles, independent power producers, regional power producers, independent systems operations, power exchanges, marketers and brokers, and a wide range of novel energy service providers.

But the path from the traditional electric power business to the more competitive industry of the future is strewn with issues and obstacles, some of which may resist resolution and movement more stubbornly that is commonly assumed today. These issues may include:

- Disagreements over the rules and procedures that should govern access to transmission and distribution facilities;
- The division of regulatory authority between federal, state and local government agencies;
- Protection of all customer classes;
- Who will be the winners and losers in a restructured electric utility industry;
- New demands for more stringent environmental protection;
- Constraints imposed by the Public Utility Holding Company Act and other federal legislation;
- A number of questions related to cost allocation, cost recovery, and system reliability.

How these issues are resolved will control the pace and scope of change in the power industry and, in turn, will answer an overarching question of increasing concern that is specifically set forth in Senate Bill 98-152: "What are the potential risks, benefits, and impacts of electric utility industry restructuring on all Colorado consumers and the economy of the State as a whole?"

Colorado Electric Power Industry Profile

The following table and accompanying text provide background about the three types of electric utilities in Colorado (investor-owned utilities, rural electric cooperatives, municipal utilities).

	No. Employees	No. Customers	No. Meters
IOU	3,466	1,260,956	1,183,653
REC	1,503	--	460,174
Muni	1,598	271,504	326,530

Municipal Utilities

There are 29 municipal electric systems operating within the state of Colorado. In combination, these serve a population base of approximately 656,000 residents. Sixteen of the 29 municipal systems own and operate generation resources; however, only three of these systems operate generation of greater than 10 megawatts. The largest municipal generator is Colorado Springs Utilities, which owns and operates 554 megawatts, with Lamar and La Junta operating 27 and 17 megawatts, respectively. Most municipal systems purchase some or all of their wholesale power requirements from other utilities, including Western Area Power Administration (WAPA), Public Service Company of Colorado (PSCo), Tri-State Generation and Transmission Association (Tri-State), or from a municipal joint-action power authority.

Municipal Power Authorities

Three municipal power authorities operate within Colorado. The Arkansas River Power Authority was created in 1973 and serves six cities in Colorado with 66.3 megawatts of installed generation. The Platte River Power Authority was created in 1975 and provides electricity to four cities (Estes Park, Fort Collins, Longmont, Loveland) in Colorado with 425 megawatts of installed generation. The Nebraska Municipal Power Pool provides electricity to 10 small Colorado municipalities.

Rural Electric Cooperatives

Twenty-five rural electric distribution cooperatives (RECs) provide retail electric service to customers in Colorado. Three RECs (Moon Lake, Rural, and Wheatland) provide service in Colorado, but most of their customers are outside the state. Eighteen RECs purchase power from Tri-State under long-term all-requirements contracts and four purchase power from PSCo and

WAPA. RECs in Colorado serve 443,000 meters that range in size from White River (2,600 meters) to Intermountain REA (75,000 meters).

Generation and Transmission Association

Colorado has one generation and transmission cooperative, Tri-State Generation and Transmission Association, Inc., which provides wholesale service to 18 RECs in Colorado, as well as RECs and public power districts in Nebraska and Wyoming. Tri-State has 870 employees, approximately 4,000 miles of line and 1,255 megawatts of generation capacity.

Investor-Owned Utilities

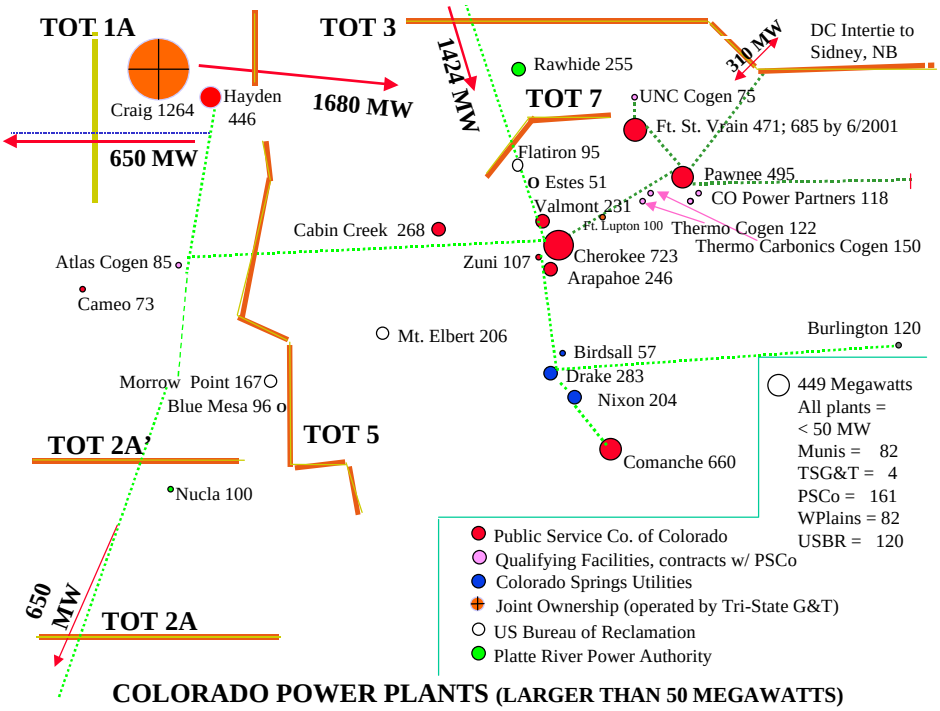
Two investor owned electric utilities provide service to customers in Colorado: Public Service Company of Colorado (PSCo), an operating division of New Century Energies, and WestPlains Energy (WPE) an operating division of UtiliCorp United. PSCo is the largest electric utility in Colorado, providing service to over 1.1 million customers, including, but not limited to, the metro Denver area, northeast Colorado, the San Luis Valley, parts of the I-70 corridor, and Grand Junction. WPE provides service to 80,000 customers in the Pueblo area.

Independent Power Producers

About 30 independent power producers generate power in Colorado. Independents provided just 51 MW of generating capacity in 1986, but by 1996, they had increased their capacity to 688 MW. With presently signed contracts, independent power producers expect to have more than 1,000 MW of power generation capacity in place by the summer of the year 2000. The majority of their capacity is spread along the Front Range and is contracted to PSCo. An estimated 100 employees work in the independent power producer sector.

Colorado Power Plants

The following map displays Colorado power plants larger than 50 MW in size. A megawatt serves roughly 1,000 residential customers. The size of the circles approximates the relative size of the plants. The key provides an indicator of ownership. The qualifying facilities have purchase power contracts with, and are under the operational control of, PSCo. The term TOT means TOTAL megawatts that can move in a certain direction. The significance of these available transmission constraints is described in detail in the Stone & Webster report.



COLORADO POWER PLANTS (LARGER THAN 50 MEGAWATTS)

Summary of the Contractors' Work

The Panel issued three requests for proposals and awarded contracts to consultants to perform research and make recommendations in the areas of Low Income issues, Energy and Economic Modeling, and Social-Economic-Legal issues. In addition, the Staff performed research for the Panel. The following are brief summaries of this research.

Low-Income Issues

Roger D. Colton prepared a report titled "Electric Restructuring and the Low-Income Consumer: Legislative Implications for Colorado." The following is a summary of basic background material concerning low-income Colorado consumers, as well as both their electric and total home energy bills:

- While low-income is defined to include incomes at or below 150% of Poverty there are a substantial number of low-income households who live *far* below that 150% ceiling;
- While 20% of all consumers statewide are low-income, the distribution of low-income consumers is not uniform throughout the state. There are 23 counties having at least 30% of their population that is low-income. Eight counties have 40% or more of their population that is poor.

- While low-income home energy bills are only 80% as big as the average consumer's home energy bill, that low-income bill as a percentage of income --known as the energy burden-- is nearly three times that of the average consumer.

The following is basic background material concerning existing public and private low-income fuel assistance in Colorado:

- Three major sources of fuel assistance exist for low-income Colorado households: the federally-funded Low Income Home Energy Assistance Program (LEAP), the Property Tax Credit program (PTC), and the utility allowances provided to tenants of assisted housing programs (Section 8).
- The Colorado LEAP program is quite limited. It serves fewer than 1-in-4 low-income consumers and covers less than one-third of the home energy bill of those consumers who do receive benefits.
- Even aside from its existing limits, the Colorado LEAP program is becoming more limited, as Congress reduces federal funding.
- The PTC and Section 8 programs are specific programs targeted to narrowly defined populations. They do not provide sources of general fuel assistance to the low-income population.

The following is a range of concerns, expressed by this contractor, about the impact of electric restructuring on low-income consumers in Colorado and about the limited funding available for mitigation:

- Colorado's private fuel funds provide crisis assistance and are unavailable, both by size and by design, to help supplement basic energy affordability subsidies in the state.
- The Colorado Energy Assistance Foundation (CEAF) provides a modest supplement ($2.5 million in 1997) to the Colorado LEAP program.
- CEAF funding is inadequate to address either the limited number of households covered by LEAP, or the limited proportion of a low-income consumer's total home energy bill covered by LEAP.

The theory behind electric restructuring, as is true for any reliance on a market economy generally, is that competition can effectively enforce price discipline and service quality standards in the delivery of goods and services. If rates or charges are too high, the theory goes, or if service quality is unacceptably low, consumers will simply buy from someone else. The economic Darwinism of the market economy will ensure that those market participants providing the highest quality goods at the lowest prices will stay in business, while others will not.

These theoretical benefits from competition are, according to the contractor and his sources, not likely to materialize for low-income consumers due to two general types of problems: (1) the failure of competitive markets to compete for low-income consumers; and (2) the inability or unwillingness of low-income customers to participate in the competitive market.

Low-income customers are not expected to be active participants in a competitive electric market. This is true both because competitive service providers are not expected to actively compete for small user customers generally, let alone for high cost, high-risk small user customers such as low-income customers. In addition, low-income customers face specific consumer-side market barriers involving low potential economic gains even if they do shop for electricity. In addition, the risks of changing are great (given the frequent need to avail themselves of customer services), and search costs are high.

A variety of adverse impacts are expected to arise because of these barriers that impede the participation of low-income consumers in a competitive electric market. Adverse consequences to low-income customers are expected in the areas of rates, bills and customer service.

Energy and Economic Modeling

Stone & Webster Management Consultants, Inc., and its subcontractor, Standard & Poor's Data Resources International prepared a report titled "Energy and Economic Modeling Issues related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado." The following is a brief summary of the key findings of this study:

Several U.S. states have made a decision to restructure their electric industries, and most of the others have either considered or are considering such restructuring. Most of the states that have already restructured tended to have high-cost generation and therefore high retail electricity prices or rates prior to restructuring. They restructured their electric industry with the expectation that introducing competition into the generation and retail services would result in lower retail prices or rates for electricity and related services.

Most states with low-cost generation and therefore low electricity rates, have either rejected electric industry restructuring or delayed further consideration of it until the effects of restructuring in other states have been observed. Colorado has had relatively low generation costs and, therefore, fairly low retail electricity rates relative to other states. This situation, which continues to the present, is a result of the close proximity of very high quality, inexpensive coal to the state's electric customers. According to this contractor, one result of this relatively advantageous situation is that it is not obvious, as it is in some other states, whether electric industry restructuring in Colorado will result in lower or higher retail electric prices for the consumers in the state.

The study yielded the following primary conclusions:

- Restructuring the electric industry in Colorado will likely lead to an increase in retail electricity rates throughout the state. This finding holds for the current customers of all utilities, for all but one customer class (irrigation customers), for all years, for all regulatory cases considered, and for all scenarios considered.
- Restructuring the electric industry in Colorado will likely lead to significant stranded benefits (value to utilities in excess of book (cost) value) for four of the five generating utilities in the state (WestPlains Energy being the exception).
- Public Service Company of Colorado (PSCo) controls nearly two-thirds of the utility-controlled generating capacity in the state. In the short term, it will possess market power, and be able to raise prices in a PoolCo-like market structure by increasing its bids to the PoolCo (a central electric dispatching organization) above its costs. This will result in higher profits for PSCo, as well as the other utilities in the state. Within five years of the introduction of competition, however, Stone & Webster projects that additional merchant plant developers, attracted by the higher prices, will enter the market. This will drive the incremental profits to PSCo of such a strategy to zero, causing them to abandon the strategy.

To summarize, without stranded cost recovery, industrial electricity prices, in the PoolCo (competitive) case, are 11 to 52 percent higher than in the Base Case (regulated monopoly structure, business as usual projected into the future) by 2010 in the Colorado regions. The average electricity price for the State is up 22 percent. By 2017, regional industrial electricity prices are 16 to 64 percent above Base Case levels, and average Colorado prices are 32 percent higher. Regional increases in commercial and residential electricity prices are more moderate. Commercial prices are 9 to 34 percent above Base Case levels in 2010, and 15 to 43 percent above Base Case levels by 2017; residential electricity prices are up 9 to 28 percent by 2010, and 14 to 39 percent by 2017.

Economic Impacts. To assess the economic impact of full retail competition, two alternative sets of regional electricity prices generated by Stone & Webster were fed into the Colorado State and Regional Economic Model by Data Resources International to capture the direct and indirect effects of the electricity prices changes on Colorado and its regional economies. The differences in employment, population, personal income, and prices between each of the two alternative cases and the *Base Case* define the economic impacts of competition with PoolCo. The economic impacts of the PoolCo Case without Stranded Cost Recovery can be summarized as follows:

- Both the Base Case and the PoolCo Without Stranded Cost Recovery Case depict a growing Colorado economy, but the growth pace is dampened over the forecast period with higher electricity prices under the PoolCo Case.

- Colorado would have 19,000 fewer jobs by 2010 and 29,000 fewer jobs by 2017 in the PoolCo Case than in the Base Case. This difference in jobs represents 0.7 percent and 1.0 percent of Colorado employment in 2010 and 2017, respectively.
- The impact on electricity-intensive manufacturing industries would be significantly larger. Employment in the primary metals and chemical industries would be expected to average more than 6 percent below Base Case levels by 2017, and employment in the paper, leather, stone, clay, and glass, and miscellaneous manufacturing industries would be more than 4 percent lower.
- The reduction in jobs would attract fewer residents to Colorado, since people follow employment opportunities. Colorado's population would be lower by 16,000 residents in 2010 and 26,000 residents by 2017.
- The job reduction translates into a $1.6 billion reduction in personal income for the State by 2010, and a $3.5 billion reduction by 2017. Over the 2000 to 2017 period, income losses total $25 billion.

Social-Economic-Legal Issues

Econergy International Corporation and CH2MHill performed a study for the Panel titled "Social, Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado." This report addressed universal service; affordability of distribution service; renewables, efficiency, and environment; taxes and fees, utility employees; rural issues; energy resources; competitive advantage; and local choice. The following is a brief summary of these issues.

Universal Service. Coordinated national, state, and local economic and regulatory policy has resulted in near-universal connection of customers to electricity supply, but the evolving nature of electricity services, and the introduction of market-based retail competition, suggests a need to re-examine the nature of universal service policy in Colorado. In more open and competitive markets, the obligation to serve may be replaced with an obligation to connect, and raises the issue of whether competition for customers will improve electric service for every customer, or whether some customers will be left behind. Some have argued that the introduction of competition must be accompanied by specific regulations addressing an expanded concept of universal service, including issues such as disconnection rules, customer service requirements, service quality standards, and access to information necessary to make purchase decisions. Others argue that competitive markets will address these issues without the need for statutory and/or regulatory intervention.

According to this contractor, the mechanisms most commonly suggested to support universal service are financial and regulatory in nature. Financial mechanisms include system benefits charges, taxes, high-cost assistance funds, and other mechanisms. Regulatory mechanisms include service quality standards, consumer protection enforcement mechanisms, anti-discrimination rules, and other laws and regulations. In some jurisdictions, it has been suggested that the right to provide default service could be competitively auctioned, under contractual terms and conditions that would guarantee universal service. Because the concept of electricity universal service has not been rigorously defined or articulated in Colorado, the critical first step facing policy makers is the articulation of a policy definition and framework.

Affordability of Distribution Service. Concerns over affordability of electric service have been mitigated in Colorado as a result of averaged, regulated rates, and relatively low electricity generation costs. Most residential heating load is provided by natural gas. In addition, energy assistance programs have been supported by federal and state funds. Public funding is declining, however. Retail competition raises a concern that large, sophisticated customers may be "cherry-picked" by competitors, leaving former incumbent utilities with only high-cost residential customers to bear system costs. This concern is especially great in rural areas where a very few large customers

may constitute a large percentage of industrial and large commercial loads. Colorado does not have any legally mandated affordability programs in place for all electricity customers.

The mechanisms most commonly suggested to support affordability are essentially financial in nature, establishing statewide assistance funds (perhaps through a "system benefits charge" added to the per-kWh price) or mandating standard offer tariffs at an administratively determined level. Additional structural mechanisms, such as anti-discrimination rules or competitively allocated default provider "franchises" may help address the problem. Some assert that open markets will, by themselves, create incentives for suppliers to find ways to ensure affordable electricity service. Others argue that restructuring the electricity industry is both complicated and confusing, and that price savings or prohibition of price increases is essential to ensuring the political and economic viability of the effort. They assert that affordability is a "public good" and that competitive markets will not, by themselves, allocate a societally optimal level of resources to this "good."

Renewables, Energy Efficiency, and the Environment. Market-based retail competition may favor low-priced electricity supply to the detriment of less mature markets for renewable energy and energy efficiency services. A number of studies suggest that market-based retail competition could result in an overall increase in emissions of pollutants. Other studies suggest that more open and competitive markets, if properly structured, could benefit renewables, efficiency, and environmental protection.

This contractor reported that the mechanisms most commonly suggested to support efficiency and renewables are essentially financial in nature, addressing the price disadvantage these emerging industries face. Public funding mechanisms or portfolio standards seek to direct more resources toward these industries than a market focused on price might otherwise allocate. Public funding mechanisms necessarily have the effect of reducing the overall level of savings made available by electricity restructuring. Whether this impact is significant will depend on the overall magnitude of savings and costs.

Some structural changes may serve to enhance the opportunity for energy efficiency and renewable energy industries to emerge and succeed and may not require direct collection and distribution of funds. These changes could also offer the benefit of creating more favorable conditions for the emergence of a competitive market in general. However, experience to date suggests that such structural mechanisms alone would not deliver the same level of industry support in the short-term. Advocates of renewable energy and energy efficiency argue that short-term success is critical, and that these industries may not exist in the long-term without short-term support.

Taxes and Fees. As one of the largest industries in the State, the electric industry has a significant impact on the tax base of state and local governments. The current structure of taxes, fees, payments in lieu of taxes, and other revenue items related to the sale of electricity is based on a long history of a regulated marketplace. Any significant change in the structure of the industry and/or in the number and character of companies and entities engaged in the supply of electricity products and services could have a significant impact on the tax base of the state, counties, and municipal authorities. Restructuring will likely bring about a shift in the amount and the distribution of tax and fee revenues.

A shift to retail competition implies a change in the amount and distribution of tax and fee revenues and in the allocation of tax and fee burdens. Regional (Front Range, Western Slope, Rural) and local (city, county, state) difference may become more prominent, as will the relative competitive positions of different electricity provider groups. The difficult task of designing an acceptable tax and fee structure is further complicated by the restrictions imposed by the Taxpayers Bill of Rights (TABOR) laws.

Utility Employees. Market-based retail competition, as envisioned by its proponents, will create incentives for increased operational efficiency and reduced operational costs in the electric utility industry. This suggests a potential for continued decline in employment in some businesses such as electric utilities and mining. A critical issue is whether adverse employment impacts will be

regionally concentrated, or exaggerated by multiplier effects in certain regions and communities. Some businesses could actually see growth in employment as a result of restructuring if restructuring creates a competitive environment sufficiently attractive to support business expansion. Finally, some express concern that the historical shift from full-time to contract employment at utilities could lead to a long-term shortage of trained employees and a resultant risk to system-wide reliability and safety.

As utilities and new market entrants seek to minimize labor costs by reducing full-time employment, a concern is raised over whether Colorado will continue to enjoy the reliability and safety benefits of a well-trained, experienced electricity infrastructure workforce. However, some argue that reductions in highly skilled workers at utilities are more a function of pre-competitive cost-cutting strategies in the face of uncertain market conditions and will stabilize. Restructuring could improve business certainty within functional areas likely to remain regulated (i.e., transmission and distribution), and safety and reliability standards imposed through regulation could create incentives for maintaining a highly trained and skilled infrastructure workforce.

Rural Issues. The potential impacts of electric industry restructuring on rural consumers of electricity, rural communities, and rural areas have several dimensions: structurally--how electricity is provided to rural consumers; and administratively--how governance, consumer protection, and local accountability could be altered. One of the principal concerns for rural consumers is the extent to which the pillars of rural public power--local control and community stewardship--could be affected by restructuring proposals directed at improving economic efficiency, increasing competition, and enhancing customer choice.

This contractor states that any policy decision to support the restructuring of the electric utility industry must consider that the costs and benefits of competitive markets may not be uniformly distributed between urban and rural areas. The implication is that if the policy decision is made to move forward with restructuring, careful attention must be given to remedial actions to ensure that service quality is not unduly compromised and that vulnerable utilities and consumers receive adequate protection. These statutory and/or regulatory actions fall broadly into seven categories: equitable treatment of all consumers; nondiscriminatory access to affordable electric service; safety and reliability; consistency in the standards, regulations and oversight of all retail electric service providers; duplication of retail delivery systems; recovery of stranded costs; and exercise of market power.

Competitive Advantage. Competition in electric power markets must be healthy and energetic for consumers to realize the benefits believed to flow from more open and competitive markets. A robust competitive market could be compromised if one group of competitors is advantaged by market structure, market rules, or financial incentives and subsidies.

The contractor reported that the principal concern among stakeholders is the extent to which structural, legal and financial advantages currently enjoyed by different competitive groups in Colorado could translate into a cost advantage in a competitive market for retail customers. This is especially true in the industrial sector where rates differ by almost a factor of four--from a low of 2.6¢/kWh to a high of 9.5¢/kWh. The concern among rural representatives is that cost-based commodity competition could have a disproportionate impact on small public utilities. For instance, the loss of several industrial customers for a large utility like Public Service Company of Colorado will have a much smaller impact on the company than, for example, Fort Morgan Utilities, that derives 30% of its revenues from a single large customer. It is important to note that while average retail rates for municipal and cooperative utilities are higher than for PSCo of Colorado, average municipal rates in the residential and industrial sectors are below those for both investor-owned utilities and rural electric cooperatives.

In order to first define, and then create, a “level playing field” for all competitors, consideration of a broad range of legitimately complex technical, financial, and legal issues should be made. These issues include: differing treatment under tax law; preferential access to federal

electricity; access to lower than market capital; preferential sales; disagreements over the rules and procedures that should govern access to transmission and distribution facilities; the division of regulatory authority between federal, state and local government agencies; protection of all customer classes; obligation to serve; open records and public meetings laws; new demands for more stringent environmental protection; the impact on municipal utilities of Internal Revenue Service Private Use rules; constraints imposed by the Public Utility Holding Company Act; and a number of questions related to cost allocation, cost recovery, and system reliability.

There is unanimous agreement among stakeholders that the current structure of the industry and the differing benefits enjoyed by municipally-, cooperatively-, and investor-owned utilities is a result of historical circumstances, and needs to be carefully reconsidered in the context of more open and competitive markets.

Local Choice. Many cooperatively-owned and municipally-owned utility stakeholders are concerned about the possible impacts of restructuring on their unique role in the community as suppliers of electricity. Publicly-owned electric utilities are expected to aid their communities by promoting local economies, enhancing the environment, and improving the quality of life through appropriate provision of electricity. The principal concern for most stakeholders is the question of prescriptive jurisdiction--that is, who will be vested with the authority to make decisions about the rules and procedures to govern access to local electricity transmission and distribution facilities, and to retail customers.

Representatives from the cooperatively-owned and municipally-controlled electric utilities feel very strongly that they should determine through their own political processes what policies best serve their communities. How public power systems carry out their tasks of procuring and delivering energy services for their customers is affected by their relationship to the larger context in which they operate--the economy, demography, work force, natural resources, legislation, regulation, technological innovation, politics, financing, and communications.

Representatives from rural cooperatively- and municipally- owned utilities feel very strongly that their participation in competitive retail electricity markets should be predicated on a voluntary choice, and not mandated by either state or federal authorities. To this end, they have enumerated several conditions as a prerequisite for local participation. Other stakeholders feel that these conditions are too broad and expansive, are not warranted by the competitive risks, will inhibit fair competition, and serve to protect competitive advantages not afforded to other groups of competitors. They feel that if competition is deemed to be in the best interest of the State, all consumers should be given equal access to competitive supplies and energy services, and that consumer protection, universal service, and public benefits should be prescribed and administered on a uniform basis across the State.

COPUC Staff Research

The Panel assigned five tasks to be performed by the COPUC Staff. Four of the tasks are: A Comparison of Colorado Electric Rates and Costs, Licensing Requirements for Suppliers of Electricity, Colorado Utilities and Regulatory History, and Transition Issues. The responsibility for the fifth task--Consumer Protection issues--was initially assigned to the Staff, however, with the Panel's approval, Barbara Alexander ultimately performed the work with the financial support of the Colorado Office of Consumer Counsel.

A Comparison of Colorado Electric Rates and Costs.

The Panel assigned the task of gathering and organizing information concerning rate, bill, and cost information to the Staff. The Staff used the following sources of information to carry out this assignment: Statewide average monthly bills and revenue per kilowatt-hr data for selected states was obtained from the DOE-EIA web site. Data were collected back to 1988, and reflects data from *all* of the utilities within each state. Average irrigation data was collected from the U.S. Department of Agriculture's Rural Utilities Service (RUS)

publication, Statistical Report on Rural Electric Borrowers (Irrigation Rev. Data), back to 1988. Data for selected utilities within each state was collected back to 1988 from the U.S. Department of Energy- Energy Information Agency web site. [*Note to the reader*: The data below come from eleven restructuring states analyzed over a multi-year period. For a more complete list of states that have made a decision to restructure, and their recent (1998) rates, please refer to the three-page section entitled "Today's Rates."] The following is a brief summary of the results:

1. Residential Customers, 1988 - 1997:
   a. **Colorado -** Average bills for customers of rural electric coops were ~$15 to $20 a month more than for customers for PSCo/WestPlains and municipal utilities ("Munis"). Average bills for PSCo/WestPlains and Munis were almost the same. Revenue per kilowatt-hour (Rev/kWh) was lowest for the munis, highest for the RECs.
   b. **Neighboring States** (All of those states that physically border Colorado) - Colorado had the lowest monthly bills, averaging between ~$40 and $48. Arizona had the highest bills, averaging between $80 and $90. New Mexico had the highest Rev/kWh, while Colorado ranked third with between 7¢ and 7.5¢.
   c. **States (11) which have committed to restructuring** - Colorado's monthly bills were the lowest. Pennsylvania, Illinois and New Jersey were the highest. Colorado's Rev/kWh was the second lowest, after Montana. Rhode Island had the highest Rev/kWh, averaging between ~10.5¢ and 14¢.

2. Commercial Customers, 1988 – 1997:
   a. **Colorado** – Average bills for Muni customers were the lowest, averaging ~$50 to $250 a month less than for customers of PSCo/WestPlains, which were the highest of the three groupings of Colorado utilities. Rev/kWh was the highest for the RECs, averaging 7.2¢ to 7.8¢. PSCo/WestPlains and the munis Rev/kWh were almost the same.
   b. **Neighboring States** – Colorado's bills averaged between $312 - $341/month, placing it fourth out of eight states, after Nebraska, Oklahoma, and Wyoming. Wyoming had the lowest Rev/kWh, while New Mexico had the highest. Colorado was in the lower middle of the group, between 5.7¢ and 6.07¢/kWh.
   c. **Electric restructure states (11)** – Colorado's bills were the second lowest, after Montana. New Jersey had the highest bills, between ~$480 - $650/mo. Colorado had the second lowest Rev/kWh, again after Montana. New York had the highest, from 9.7¢ - 12.2¢/kWh.

3. Industrial Customers, 1988 – 1997:
   a. **Colorado** – Munis had the lowest industrial monthly bills, averaging from ~$6,000 to $80,000. For all but three years (1993-1995), PSCo/WestPlains bills were the highest. Rev/kWh was lowest for PSCo/WestPlains (4.2¢ - 4.8¢), highest for the RECs and Munis.
   b. **Neighboring States** – Colorado's monthly bills were the highest, except for the years 1988 and 1997. They ranged from ~$7,500 to $19,500. Utah had generally the lowest overall bills. Colorado's Rev/kWh (4.3¢ - 4.6¢) generally ranked in the middle of these states, with Utah having the lowest and New Mexico and Arizona vying for the highest (between 4.3¢ - 7.0¢/kWh).
   c. **Electric restructure states (11)** – Colorado's monthly bills ranked between second and fourth highest, ranging from ~$7,000 to $19,000/mo. Montana had the lowest

Rev/kWh (2.9¢ – 3.7¢), while Rhode Island had the highest (7.3¢ - 10.4¢). Colorado's Rev/kWh was the fourth lowest.

The Panel also assigned the Staff the task of **comparing Colorado's generation, transmission, and distribution costs with the equivalent in other states**. Initially the Staff presented tables based on expense data reported by various utilities on their FERC Form 1-As, or equivalent. Several Panel representatives expressed concern that using expense data alone may misrepresent such costs. The Staff attempted to obtain more comprehensive costs data from Colorado entities. While all the Colorado utilities were cooperative with the Staff's efforts to obtain this information, in the final analysis, the data is not available on a comparable basis.

Licensing Requirements for Suppliers of Electricity

The Panel assigned the task of gathering and organizing information concerning the licensing of electric providers to the Staff. The Staff used the following sources of information to carry out this assignment:

- An examination of existing COPUC regulatory oversight, including current requirements for telecommunications companies and common carriers of passengers.
- An examination of licensing requirements that were adopted or contemplated as a part of electric restructuring in other states or jurisdictions.
- The results of a questionnaire that the Staff sent to interested parties in Colorado. This questionnaire was developed after the Staff reviewed what other states or jurisdictions had done related to registration, licensing, and certification.
- Based on the information that the Staff received from these sources, the Staff developed options for the Panel's consideration. The Staff suggests that new suppliers of electricity in a potentially restructured environment *should* be registered or licensed or certified to some degree by the State of Colorado. The critical issue is requiring the essential but minimal requirements without imposing an undue entry barrier to new suppliers. The minimum standard should include essential company information, consumer safeguards, and disclosure elements that would be needed in a restructured environment.

It may be appropriate to require greater registration/licensing/certification requirements at the inception of restructuring and relax requirements for certain providers or markets as competition increases to allow the market to take an increasingly larger role in controlling behavior. Greater disclosure and customer safeguards and reporting may be appropriate at the beginning of any new market creation, when less competition exists.

Colorado Utilities and Regulatory History

This task was added by the Electricity Advisory Panel during its review of the Staff's proposed work plan. The Panel directed the Staff to perform the following research:

- Describe the current types of utilities providing electric service within Colorado and the regulatory structure pertinent to each. Included within this description should be an evolutionary analysis as to how the current regulatory structure came into being and how it applies to investor-owned utilities, municipal utilities and cooperative utilities.

The Staff organized the Utilities and Regulatory History report into two sections: (1) a brief description of current utilities providing service within Colorado, and (2) a brief history of regulation and how the current structure came into being. The following is a description of the current form of regulation for the current electric utilities providing service within Colorado.

Municipal Utilities. Since the 1920s, the governing body of a municipal utility has the authority to set rates within the municipal boundaries. With respect to rates for electric service to customers outside the boundaries of a municipality, in 1983 the General Assembly transferred the COPUC's primary jurisdiction to establish rates to the governing body of the municipality. However, if the governing body establishes electric rates for a class of customers outside the municipality's boundaries that varies from the rates for the same class of customers within the municipality's boundaries, then such rates do not become effective until they are reviewed and approved by the COPUC. Since the adoption of the 1983 Legislation, there have been no complaints filed with the COPUC under this statute.

The COPUC retains jurisdiction to hear complaints, either on its own motion or upon complaint by another electric utility, relating to duplication of facilities outside the municipalities' boundary. In this regard, the COPUC still has jurisdiction to assign specific territories and to define the conditions of service and construction of extensions within the disputed territory. The COPUC still retains jurisdiction over the sale, assignment or lease of certificates of public convenience and necessity issued to municipalities to serve territories outside their boundaries.

Municipal power authorities are locally-regulated, generally through a board of directors representing the member municipalities. Power authorities are not subject to COPUC regulation and are subject to limited Federal Energy Regulatory Commission jurisdiction (limited to their activities as Transmitting Utilities as that term is defined by the Federal Power Act).

Rural Electric Cooperatives. In 1961 the Colorado legislature amended the Public Utilities Law to bring non-profit electric cooperatives under Commission jurisdiction. Legislation passed in 1983 that provided a process for the RECs to hold an election so its members could vote to determine whether they wished to be exempt from COPUC regulation. All of the RECs availed themselves of this process, and all initially voted to be exempt from COPUC regulation. The amendment also provided a process for re-regulation, and the members of one REC, San Miguel Power Association voted to be re-regulated by the COPUC.

Consequently, RECs are currently regulated by the COPUC in terms of certificated service territories, and, if a complaint is filed, in terms of their service, their securities, and their rates. The board of directors of a distribution electric cooperative has the primary jurisdiction to initially establish rates for its customers. However, on complaint by one or more customers, the COPUC has the authority to determine whether the complained-of-rates grant preferences or advantages to any person or corporation; subject any person or corporation to prejudice or disadvantage; or establish or maintain any unreasonable difference between localities or classes of service. If a valid complaint is received, the COPUC retains authority to determine if rates, rules or regulations of a distribution electric cooperative are unjust or unreasonable. The COPUC also retains the authority to resolve conflicts concerning adequacy and safety of distribution electric cooperatives' services, including termination of service, and facilities. Also, distribution electric cooperatives are required to file certain reports and to keep their records and accounts as required by the COPUC.

Generation and Transmission Association. Tri-State Generation and Transmission Association, Inc. has no certificated territory, because it only provides wholesale service. The COPUC does not regulate Tri-State's wholesale rates to its distribution cooperatives located in Colorado since the courts have held that Tri-State's operations are in interstate commerce, therefore, state regulation of rates is prohibited. The COPUC does not regulate Tri-State with regard to the issuance of securities. It should be noted that, under certain circumstances, the COPUC regulates Tri-State's new construction of large generation and transmission facilities located in Colorado. To a certain extent, Tri-State is subject to the jurisdiction of the U.S. Department of Agriculture's Rural Utilities Service

(RUS), which must approve any change in rates. Tri-State is also subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) with respect to interstate transmission facilities.

Investor-Owned Utilities. The COPUC has statewide plenary power to regulate the retail rates, service, facilities and service territories of investor-owned utilities (IOUs). The Commission regulates the retail electric business of IOUs, while the FERC regulates the wholesale electric business of IOUs. Currently, home rule cities and towns and non-home rule cities and towns have no jurisdiction or authority to regulate the retail rates, service or facilities of IOUs within their municipal boundaries. Since 1913 IOUs have been regulated by the COPUC under the doctrine of regulated monopoly in which the utility has the exclusive right to provide electricity in a certificated service territory. The COPUC may not authorize another public utility to provide the same product or service unless the original public utility is unwilling or unable to serve.

Independent Power Producers. Independent Power Producers take a variety of forms. A Qualifying Facility is any small power production facility or cogeneration facility that meets certain requirements under the Public Utility Regulatory Policy Act of 1978 ("PURPA"). The primary fuel source for a small power production facility must be biomass, waste, renewable resources, geothermal resources, or any combination thereof. A cogeneration facility produces both electric energy and forms of useful thermal energy for industrial, commercial, heating, or cooling purposes, through the sequential use of energy. A small power production or cogeneration facility must be certified as a Qualifying Facility by the Federal Energy Regulatory Commission. Qualifying facilities are entitled to receive payment based on a utility's avoided costs. During the 1980s, such avoided costs for PSCo were based on the costs of a hypothetical generation facility. Later, the avoided cost of generation was based on the results of a competitive bidding process. As of December 31, 1998, PSCo had contracts with 31 Qualifying Facilities with a summer capacity of 627 MW. The Energy Policy Act of 1992 ("EPAct") dramatically increased the competitive market for wholesale generation by amending the Public Utility Holding Company Act of 1935 to permit the development, ownership, and operation of a new class of generating facilities, exempt wholesale generators ("EWG"). In the post-EPAct era, electricity markets are evolving faster than most people expected. New market entrants are providing a variety of new transactions (long-term, spot) and new products (both financial and physical) to consumers.

Timing and Implementation

The Staff gathered information concerning transition issues that may arise during the implementation of retail competition, including: timing and phase-in issues, the use of pilot programs, and the use of rate reductions. In order to carry out this research, the Staff examined experiences in other states and opinions of key interest groups in Colorado.

The literature search shows that states have employed different methods with regard to the timing and phase-in of retail competition.

- In some states utility plans must be reviewed and approved by the state's regulatory agency, while in other states utilities need not file plans with the regulatory agency.
- In New Mexico, residential customers will be afforded open access before all other customer classes.
- In some states access to retail competition is granted to all customers simultaneously, while in many other states industrial customers are granted access before commercial and residential customers.
- In most states there are designated times by which utilities must make access to other providers available to customers.
- Some states' regulatory agencies have approved different plans for different utilities.

- Most of the phase-in of retail competition is ongoing and, at this time, it is not possible based upon experience to compare the merits of alternative methods.

Many states that have made a decision to restructure have employed pilot programs to ease the transition to retail competition. There is some overlap between pilot projects and timing and phase-in as discussed above.

- Some states employ pilots for residential and small commercial customers. A few states add pilots for large industrial customers.
- In some states pilots must be approved by the state's regulatory agency. In at least one state, pilots either must be approved by the regulatory agency or must follow procedures prescribed by statute.
- In some states different pilots are employed by different utilities within the state.
- Some states employ pilots for a small number of customers in a small geographic location. Other states employ pilots for tens or hundreds of thousands of customers.
- In one state a lottery is used to select customers for the fully subscribed pilot programs.
- One state has employed a pilot for a specific sector of industry, the agricultural sector.
- The results of pilots are difficult to discern from information discovered in the literature search.
- Many states have employed immediate rate reductions for customers. Some states have employed immediate rate reductions that decline over time. Other states have employed rate reductions that increase over time. Because these rate reductions have relatively recently been imposed, the results are difficult to discern. However, in at least one state reduced rates have been low enough and consequently, few customers have chosen alternative providers.

Results of Questions to Key Interest Groups on Implementation and Timing

The Staff clarifies that the "Questionnaire of Key Interest Groups in Colorado" is not a scientific survey and the Staff acknowledges that this survey only reveals the opinions of those who responded to the survey. The key interest groups and individuals who responded are not necessarily representative of the general population of Colorado, nor are they necessarily representative of the key interest groups to whom the questionnaire was administered.

Respondents' answers to questions about **timing and phase-in issues** are summarized as follows:

1. 63 of 71 respondents felt that a designated length for the implementation of restructuring is desirable;
2. Many respondents feel that implementation plans should be filed by utilities who participate in retail competition with the COPUC (60 of 71), that the COPUC should hold hearings to examine implementation plans (52 of 71), and that the COPUC should make a decision to approve, modify, or deny the plans (57 of 71);
3. 53 of 71 respondents also feel that if dates for access for retail competition vary by customer class, that there should be an established date for implementation for each class;
4. 40 of 71 of respondents feel that if there is an implementation period, the implementation period should be 2 years to 3 years or more than 3 years; and,
5. For all other questions, less than a majority responded in the affirmative.

Respondents' answers to questions about the use of **pilot programs** are summarized as follows:

1. 49 of 71 respondents feel that pilots should be utilized;
2. 58 of 71 respondents indicate that pilots should not be utilized because pilot program results are not representative of larger programs than for any other reason;
3. More respondents (47 of 71) feel that pilots should be optional than respondents who feel that pilots should be mandatory (21 of 71) for participating utilities;

4. Most respondents feel that pilots should be designed for residential, commercial, and industrial classes of customers, while less than a majority feel that pilots should be designed for specific geographic regions;
5. Many respondents feel that pilots should be used to investigate the availability of lower rates to participants (54 of 71), the number of suppliers available to participating customers (58 of 71), the operation of aggregation/aggregators (48 of 71), and savings by customer class during the duration of the pilot (58 of 71);
6. 57 of 71 most respondents feel that pilot programs should be approved by the COPUC; and
7. 35 of 71 many respondents feel that pilots should be of 1 to 2 years in duration; for all other questions, less than a majority responded in the affirmative.

Respondents' answers to questions concerning **rate restrictions** may be summarized as follows:

1. 19 of 71 respondents feel that a rate moratorium or rate cap should be utilized during the implementation of retail competition;
2. 5 of 71 respondents feel that immediate mandatory rate reductions should be utilized as an alternative to a rate cap or a rate moratorium;
3. If there is a mandatory rate reduction, 11 of 71 respondents feel a rate reduction of 0 to 6 months should be utilized rather than any longer period.

Consumer Safeguards

Barbara Alexander prepared a report titled "Consumer Protection Issues in Electric Restructuring for Colorado: A Report to the Colorado Electricity Advisory Panel." The purpose of this report is to update recent state activities with respect to consumer protection regulations for retail electric competition and to explore the Colorado-specific implications.

Several states have continued to adopt comprehensive consumer disclosure requirements applicable to energy suppliers. These regulations typically require an Electricity Label, which contains price, fuel mix and environmental emissions information, a Terms of Service document, which is given to new customers (and usually accompanied by a 3-day right of rescission) to explain the contractual terms, and a set of billing disclosures applicable to the generation portion of the bill, whether issued by distribution utilities or suppliers directly. If Colorado does not adopt a specific mandate for consumer disclosures by suppliers for their marketing or billing activities; the only regulatory control would reside with the Attorney General in the enforcement of the Colorado Consumer Protection Act.

A number of recent surveys have confirmed the public's general lack of awareness of the details of retail competition and have justified the need for comprehensive public education campaigns. The purpose of a comprehensive public education program should be to maximize public participation in the implementation of retail competition, minimize customer confusion about the changes being undertaken in the electric industry, and equip all customers with the means to participate effectively in a competitive electric market.

This contractor reports that it is becoming increasingly clear that the price and manner of delivery of Default or Basic Service will have a significant impact on the development of a competitive market. In California, Rhode Island and Massachusetts there is little marketing activity directed to residential and small commercial customers because the retail market price of electricity is higher than the generation service price shown on the customer's utility bill**.** Pennsylvania is exploring an alternative approach. A coalition of competitive suppliers has now suggested that the Pennsylvania Commission bid out the default service function. This would be accomplished by awarding the service to the highest bidder. The highest bidder is the supplier who bids an amount in excess of the shopping credit (the generation portion of the customer's unbundled utility bill). This excess amount is then used to reduce stranded costs and transition charges for all default service customers.

There are also significant implications for universal service in the design and price of Default Service. It will be important to avoid the creation of a "ghetto" of hard to serve customers at higher rates. This will occur if regulators unbundle customer service costs (billing, collection, and bad debt) and allow suppliers to cream-skim the lower cost, high-use customers.

Colorado's current electric and gas utility rules clearly prohibit the disconnection of service for the failure to pay unregulated charges. Commission rules prohibit discontinuance of service "for failure to pay any indebtedness except as incurred for utility service rendered by the utility in the State of Colorado." The amount overdue on a disconnection notice must reflect amounts owed for tariffed utility services according to COPUC Rule 13(b)(1). Therefore, under the current rules, a customer cannot be threatened with, or actually be disconnected, for the failure to pay for unregulated generation charges provided by a supplier that is not a utility. This important consumer protection approach has been explicitly adopted in every other state that has implemented gas and electric competition: California, Pennsylvania, Montana, Maine, Massachusetts, and Rhode Island.

Most states have applied their current utility consumer protection rules to the provision of default service, whether or not the provider of default service is the local distribution utility. For example, Maine's Standard Offer Rule (Chapter 301) requires the distribution utility to obtain the generation service portion of this service in a bid process in the open market, but the service itself will be subject to the existing residential customer protection service quality and protection standards.

Colorado PUC rules govern a "public utility or telecommunications service provider" and generally require the customer's specific written authorization to release individual information in the possession of the utility to any third party. This release method is not applicable to a list of customer names and addresses. This rule will address access to customer specific information by suppliers from utilities, but does not address the use of customer specific information gathered by suppliers.

The Colorado PUC may seek fines up to $2,000 per day per violation against public utilities through court action brought by the Attorney General. The fines, if ordered by the court, are payable to the General Fund. Most states have revamped their commission's enforcement tools with electric restructuring legislation. State public utilities commissions are being given the authority to impose administrative fines, to revoke licenses, order customer restitution, and issue cease and desist orders to respond promptly to unfair trade practices and consumer fraud in the competitive market place. The Maine legislation authorizes its commission to impose up to a $5,000 penalty on suppliers who violate the statute or commission rules, issue cease and desist orders, adjudicate disputes between consumers and suppliers, order restitution and enforce any lawful order in the courts, via its own counsel or the Attorney General.

Introduction to the Summaries of the Issues Mandated to be Evaluated

As discussed in Section One of this report, the legislature specified certain Evaluation Issues to be studied and assessed. The following section provides a brief synopsis of each of these issues. The format begins with language from SB 98-152, followed by brief background material, definitions (if necessary), and a few key facts. It includes comments by presenters to the Panel, a summary, comments from the contractors and excerpts from the Panel's discussion of the issue and differing viewpoints. The electronic appendix contains a detailed accounting of over 300 questions answered by the Panel Members, and a record of the Members' votes on the issues. The electronic appendix also includes "Issues Packets" that were developed as briefing material for the Panel to consider when expressing their preferences. Each of the sixteen Issues Packets is typically between 10 and 25 pages long.

TODAY'S UTILITY RATES

Language from Senate Bill 98-152

(3.)(a) "…the evaluation issues shall include…a comparison of Colorado's electric rates and costs of generation, transmission, and distribution with the equivalent rates and costs in other states."

Background

The gathering of electricity rates and costs data was assigned to COPUC Staff.

Staff obtained much of their data from the U.S. Department of Energy's web site. From it they obtained information on rates paid by residential, commercial and industrial customers since 1988. Irrigation rates were gathered from more limited data through individual utilities' annual reports to the Federal Energy Regulatory Commission and from USDA Rural Utilities Service (RUS) publications. Staff supplied the Panel with rates data for all states that border Colorado. In addition, they supplied data for 11 states that had, as of the fall of 1998, initiated restructuring of their electric utility industries.

Cost data disaggregated for generation, transmission and distribution was gathered from utilities' annual reports. However, despite concerted efforts to obtain uniform data, COPUC Staff felt the cost data was not suitable for making comparisons with other states. Therefore, they recommended to the Panel that the disaggregated cost data was unreliable and should not be forwarded to the General Assembly and the public. The Panel accepted that recommendation.

Key Facts

Compared to rates paid in other states, rates paid in 1997 by Colorado customers vary across customer classes.

- *Residential rates* were average compared to states that border Colorado, but 20% below the average paid in states which are restructuring.
- *Commercial rates* were 10% lower in Colorado than in most states that border Colorado, and over 25% lower than similar rates in restructuring states.

Dennis Greene, President, Metro Denver Building Owners and Managers Association (BOMA) reported that the national average price for electricity is $1.58 per square foot; Denver is 73% of that number.

- *Industrial rates* were average compared to those in states that border Colorado and 22% below commercial rates in restructuring states.
- *Irrigation rates* were the lowest of all states that border Colorado and were 23% lower in Colorado than in the average for all states that border Colorado. Data for 1997 irrigation rates for restructuring states were not available.

The cost to purchase the same amount of electricity in the 27 largest cities in the US is compiled by the COPUC on a biannual basis. Using 1998 costs, the data indicates the following:

- Of the 27 cities, the cost for a homeowner to purchase 500 kWh is 19th least expensive.
- The cost for a small commercial owner to purchase 1,500 kWh a month is 23rd least expensive.
- The cost for a large commercial building owner to purchase 10,000 kWh is 25th least expensive.
- The cost for an industrial user to buy 400 MWH is 22nd least expensive.

Contractor EIC/CH2MHill supplied some additional information relating to rates. The data they gathered from the US Energy Information Administration indicated that Colorado residential rates varied by utility type, as follows:

- $0.0756 per (residential) kWh for investor-owned utilities.
- $0.0635 per kWh for municipal utilities.
- $0.078 per kWh for cooperatively-owned utilities**.**

USDOE data shows the average (including industrial, commercial, and residential rates) cost for electricity in 1998 in the U.S. is $.0674 per kWh; the average for Colorado is $.059 per kWh.

Excerpts from the Panel's Discussion of Today's Rates

One Panel Member captured the group's general feeling when he stated that "Colorado is a low-cost state" as far as its electricity rates are concerned. Another countered that "of the states in the western grid that have not restructured, Colorado is the 'highest-cost' state."

One Member wanted to ensure that our focus displays rates as well as bills. The data that follow focuses on rates.

1997 Revenue (cents)/kWH Prior to effective restructuring in Restructuring States			
State	Residential	Commercial	Industrial
Colorado	7.4	5.8	4.3
IOU	7.4	5.6	4.2
REC	7.9	7.2	5.2
Muni	6.8	6.6	5.4

Neighboring States			
Arizona	8.8	7.8	5.1
Kansas	7.7	6.5	4.5
Nebraska	6.4	5.5	3.6
New Mexico	8.9	7.9	4.4
Oklahoma	6.6	5.7	3.6
Utah	6.9	5.7	3.5
Wyoming	6.2	5.3	3.5
Neighboring States *Avg.*	**7.4**	**6.3**	**4.0**

Restructuring States			
Arizona	8.8	7.8	5.1
Arkansas	7.8	6.8	4.4
California	11.5	10.0	7.0
Connecticut	12.1	10.3	7.8
Delaware	9.2	7.2	4.8
Illinois	10.4	7.9	5.3
Maine	12.7	10.4	6.4
Maryland	8.3	6.9	4.2
Massachusetts	11.6	10.3	8.8
Michigan	8.6	7.8	5.0
Montana	6.4	5.8	3.7
Nevada	6.8	6.3	4.5
New Hampshire	13.7	11.3	9.1
New Jersey	12.1	10.3	8.1
New Mexico	8.9	7.9	4.4
New York	14.1	12.1	5.2
Ohio	8.6	7.7	4.2
Pennsylvania	9.9	8.4	5.9
Rhode Island	12.1	10.4	8.5
Texas	7.8	6.7	4.1
Virginia	7.7	6.0	4.0

Key points regarding this issue

- **Compared to states that border Colorado, Colorado's *residential* rates are average, but our residential rates are lower than the average in states that have restructured.**
- **Colorado's *commercial* rates are lower than the average in neighboring states as well as lower than the average in states that have made a decision to restructure.**
- **Compared to neighboring states, Colorado's industrial rates are average, but our industrial rates are lower than average in states that have made a decision to restructure.**
- **Our irrigation rates are lower than those found in all neighboring states.**
- **Within Colorado, rates for residential customers are slightly lower for municipal customers, average for investor-owned utility customers, and slightly higher for residential customers of cooperatively-owned utilities.**
- **Most states that have restructured are higher-cost states.**
- **Colorado's rates are the highest of the remaining WSCC states that have not made a decision to restructure.**

Language from Senate Bill 98-152

(3)(b) ”An assessment of whether retail competition in electric power supply can be expected to reduce or increase rates for each category of electricity consumers in Colorado, including low-income consumers of electricity, both in the short term and in the long term.”

Background and definitions

As described earlier, Stone & Webster Management Consultants (S&W) was hired to perform extensive energy and economic computer modeling. Their work was targeted first and foremost at assessing whether electricity rates would increase or decrease within a variety of different restructured environments. Over a 7-month period, during development of the output for all their modeling cases, S&W worked closely with the Panel’s Energy and Economic Modeling Contractor Management Committee (E&EMCMC).

In mid-May 1999, the US Dept. of Energy released a study called “Supporting Analysis for the Comprehensive Electricity Competition Act,” in support of the Administration’s legislation.

The reference to time frames in (3)(b) above is interpreted as follows: “in the short term” ties to projections made for 2003, and “in the long term” ties to projections made for 2017.

Key Facts

When it comes to projecting whether rates can be expected to increase or decrease under some form of retail competition, a key requirement is to establish a highly credible “base case” from which to build. From that base, the contractor could estimate electricity prices based on critical assumptions and key inputs to complex computer models. With help from the E&EMCMC and the COPUC Staff, S&W worked very hard to get agreement on key assumptions. They found that electric prices are likely to rise, sometimes substantially, with the introduction of restructuring in Colorado. Interpretation of the results is bounded by the observer’s confidence interval.

Comments by Presenters to the Panel

Bob Pomeroy, Holland & Hart, representing industrial customers

- [After Montana restructured, industrial customers] are already experiencing 10% savings in their rates; some are seeing savings as high as 20%. The legislature is quite satisfied with the restructuring. Montana is showing that restructuring can bring savings in low-cost states.

- ***Dan Fessler,*** former President, California Public Utilities Commission
- Prices go up as well as down in competitive markets. But in the old regime, the risk was taken on the back of the ratepayers, but now it is on the back of the investors.

Mark Mills, Mills & McCarthy Associates, Chevy Chase, MD

- The track record of forecasters is fairly miserable, and the worst of the lot is economists. However, forecasting is a useful, perhaps necessary tool.
- The economy and electricity consumption are moving in lockstep.

Summary Comments from Contractor

Ron Moe, **Stone & Webster**

- Restructuring the electric industry in Colorado will likely lead to an increase in retail electricity rates throughout the state. This finding holds for the current customers of all utilities, for all but one customer class (irrigation customers), for all years, for all regulatory cases considered, and for all scenarios considered.
- We ran a case where the entire stranded benefits of $800 million were returned to ratepayers, and rates still went up.
- The cost of setting up a Poolco was not included in our numbers.
- There is a magic about markets that you could not have anticipated. The difference between California and Massachusetts compared to Colorado is that they found benefits based on the operating [cost] of the system, not just relying on the magic of markets.

Comments from members of the Panel’s Energy and Economic Modeling Contractor Management Committee

- Key assumptions were developed by Stone & Webster, with key input from the committee.
- S&W’s results are reasonable and relative. Yes, there are a lot of key assumptions, but the assumptions were reasonable. I have conducted enough forecasting to know our rates in the future won’t be *exactly* as forecast, but overall the prices will go up with restructuring.
- We do not necessarily agree with all of the data and outcomes, but we believe, on balance, that this is a highly credible and worthwhile report that should be given a good deal of consideration.
- A critique of the Stone & Webster report has been submitted by one of the Panel Members. Models are useful tools, but their results must be weighed against other considerations. A model’s pricing cannot capture the dynamics of a true competitive marketplace. Some key assumptions used for the Colorado modeling are: no “price wars,” no improved efficiencies or innovations with competition over the regulated case, perfect regulation, etc. The results are counterintuitive and contrary to the experience in the natural gas and long distance telecommunications industries. (Responses to the critique have been prepared by

two of the Panel Members, who point out that natural gas has not been fully deregulated.)

- This study was the best ever done in the US. No other state even *tried* to study the issue before. There will always be disagreements, but this study narrows them.
- Generally, the Modeling Committee was very functional, Stone & Webster worked hard, and the Staff ran a fair process. However, many of the key drivers are not capable of being modeled. I don't believe that retail competition will increase rates by the order of magnitude represented by the results.

Excerpts from the Panel's Discussion of Expected Rates under Retail Competition

- The Contractor's report indicates that restructuring will result in higher rates for Colorado consumers. We must seriously question any recommendation to restructure this industry.
- It is difficult to see a competition scenario where rates in rural areas will not increase.
- If price is the only determinant, and if we rely on the price projections, then restructuring would be a mistake. When I see projections for prices going up, it is hard for me to see how that could happen.
- The rates at the California Power Exchange are 2.4 cents/kWh. If you look back at the concerns about the gas industry prior to deregulation, price predictions turned out to be wrong, because the price has gone down.
- Competition efficiently allocates resources, constantly putting downward pressure on prices. If the modeling is going to forecast competitive prices being significantly higher than regulated prices, it seems clear to us that the assumptions are not very realistic.
- I'm concerned that increased costs to agriculture could be a big problem.
- We enjoy some of the lower rates in the nation. Restructuring will raise rates.
- It seems possible that we could suffer short-term damage--five to ten years of prices going up for everyone. We're concerned about cost-shifting. In other markets, we have seen a pattern of large customers, with large demands, receiving the initial benefits that are disproportionate to smaller customers. We don't want losers.
- We feel that our electricity costs are low and that we don't want them to be jeopardized by change.
- S&W's report indicated that 800 MW of wind could be installed at a rate impact of less than 1%.

Key points regarding this issue

- **Computer modeling tools cannot accurately predict the future of electirity prices. Their value lies in helping generate a range of estimates.**
- **Stone & Webster reported that rates are likely to increase under competiion, based on findings in all cases they ran.**
- **Most members of the Panel and its Energy and Economic Modeling Contractor Management Committee supported the Contractor's key assumptions, their overall modeling effort, and the generation results outlined within their report.**
- **A minority of the Panel disagreed. Disagreement revolved around a few of the key assumptions used during the modeling, plus the inability of computer models to fully capture dynamics of fully functioning markets and related innovations.**

CONSUMER SAFEGUARDS

Language from Senate Bill 98-152

(3)(c) "An identification and assessment of the types of safeguards deemed necessary to protect consumers in the event retail competition is introduced…"

Key Facts

During 1996, residential consumers purchased 32% of the electricity sold in Colorado. The share purchased by commercial and industrial customers was 38% and 27%, respectively. (About 3% is sold to miscellaneous "other.")

If safeguards are to be implemented, a wires charge could be considered. A wires charge of 1/10 of one cent per kWh (one mill) would generate about $38 million/year, if applied to all meters across the state. Per mill assessed, the monthly cost to the average residential consumer would be $0.63

New rules for Colorado investor-owned utilities require regular disclosure to customers of the utility's fuel sources and disaggregated (generation/transmission/distribution) costs.

Comments by Contractors to the Panel

Barbara Alexander, Consultant to the Colorado Office of Consumer Counsel

- There is a disconnect between the decision to restructure and the impact on the customers. This has caused all policy makers to recognize that at least during a transition period, a mechanism for understanding restructuring must happen, and that the negative consumer impacts must be mitigated.
- The scope of a consumer protection agenda includes a well-funded, professional consumer education program. We can't rely on bill inserts. We need to establish a set of disclosures by suppliers that mandates the exact terms upon which you are going to make your comparisons. This is not rate regulation. The consumer who uses 500 kWh a month needs to have a cents-per kWh disclosure so they can compare the rates. This can easily be brought down to a number for comparison.
- Make it easy for aggregation to occur. Look to Massachusetts as a good model.
- Statewide consumer education programs should cost at least $1 per resident per year for two years; look to the Pennsylvania example.
- Absent careful design and protections, consumers will be worse off in a restructured environment. At present, in states that have restructured, the rates for industrials are decreasing while residential rates have stayed about the same.

Disclosure: Several states which have made a decision to restructure their electricity markets require a comprehensive Electricity Label containing price, fuel mix and environmental emissions information, a Terms of Service document, a set of billing disclosures applicable to the generation portion of the bill, etc.

Consumer education: Examples of the average cost of consumer education programs:

California:	$87 million	$2.70/resident.
New Hampshire:	$1.8 million	$1.60
Pennsylvania:	$16.5 million	$1.37
Maine:	$1.6 million	$1.30
Connecticut:	$7.5 million	$2.35

Obligation to serve: The price and manner of delivery of Default or Basic Service will have a significant impact on the development of a competitive market. In California, Rhode Island and Massachusetts there is little marketing activity directed to residential and small commercial customers because the retail market price of electricity is higher than the generation service price shown on the customer's utility bill.

There are significant implications for universal service in the design and price of Default Service. It will be important to avoid the creation of a "ghetto" of hard-to-serve customers at higher rates. This will occur if regulators unbundle customer service costs (billing, collection, and bad debt) and allow suppliers to cream-skim the lower-cost, high-use customers.

Reliability of service: Since Colorado does not have specific service quality standards applicable to electric utilities, the Panel may want to consider whether a specific mandate for the development of such regulations or standards should accompany the move to retail competition.

Other areas requiring protection: Customer privacy, disconnection of service, provision of universal service, and prohibiting deceptive trade practices.

Roger Colton, Fischer, Sheehan & Colton

- In Pennsylvania, over 80 suppliers have registered to supply electricity; however, only about half a dozen sell to residential customers.
- In the 1980s, when FERC deregulated natural gas, the residential rates did not receive the significant benefits that the industrial class received. The trend line for both classes shows that the above situation will likely continue.

Excerpts from the Panel's Discussion of Consumer Safeguards

- If the present system of regulation is thrown out, the likely losers will be residential consumers, low-income consumers, fixed-income consumers, and small agricultural consumers. Colorado has consistently provided low electricity rates to consumers in a fair manner. The basic notion of equity and fairness will wither away under restructuring for those consumers least likely to "wheel and deal" in a restructured environment.

- More, not less, regulation will be required in a restructured environment. Less regulation will only occur if a restructuring proposal irresponsibly avoids strong measures to protect consumers from fraudulent advertising and fraudulent practices.
- It is now possible to capture many of the benefits of competition while maintaining public interest goals. Retail competition is an improvement to the current system, that it will be beneficial to consumers, that it is feasible, and that society will reach the same conclusion.
- Most of the residential consumers I represent support the idea of having the opportunity to make a choice. It is hard for me to assume that protected industries are acting in the interest of the consumers.
- We ought not go ahead with restructuring if rates for consumers won't go down.
- In other markets, we have seen a pattern of large customers with large demands receiving initial benefits that are disproportionate to smaller customers. There we don't have a win-win. Here, we don't want losers.

Key points regarding this issue

- **Households purchase 32% of electricity in Colorado.**
- **In the event of electric industry restructuring, the Panel unanimously agreed that safeguards will be required to protect residential consumers' interests.**
- **Mitigation would require consumer education and a wide array of safeguards.**

CONSUMER SAFEGUARDS: LOW-INCOME CONSUMERS

Language from Senate Bill 98-152

(3)(c) "An identification and assessment of the types of safeguards deemed necessary to protect …*low-income consumers of electricity and low-income energy assistance programs*."

Background and definitions

Since energy assistance nationwide is frequently tied to 150% of the Poverty Level, including in Colorado, that definition is used here to indicate customers who qualify as "low-income consumers." (During 1998, the Poverty Level for a 2-person household was $10,850/yr.)

According to studies by the U.S. Department of Energy, low-income consumers typically live in older and less-efficient homes and use relatively inefficient appliances. That leads to a higher rate of energy consumption per square foot of home. More importantly, that low-income bill as a percentage of income—known as the energy burden—is nearly three times that of the average consumer.

Key Facts

Nearly 20% of all households in Colorado live at or below 150% of the federal Poverty Level. Of the 1.3 million households, 260,000 fit the low-income classification.

Distribution of low-income households varies across the state. In 23 of Colorado's 63 counties, one-third or more households fall into the low-income category. In 8 counties, 40% of the households could be classified as low-income.

From the Contractor's Comments to the Panel

Roger Colton, Fisher Sheehan & Colton

- The Colorado low-income consumer's energy bill is about 70% of the statewide average bill, but the burden of that bill is over four times as large.
- The first question is whether EUIR really will reduce kWh charges. The second question is whether the low-income customers will have to pay for the "gold" through higher ancillary fees.
- It is unlikely that low-income customers will receive a competitive choice, and likely that they will have to pay higher electricity bills under restructuring.
- Three key issues needing a policy response:
  Consumer aggregation: it won't just happen. You need policy decisions to facilitate it.
  Consumer education: there must be unique components for low-income consumers. Performance-based evaluation is a critical component of any education program. New Hampshire, the leader in such an effort, adopted a series of socially-based performance measures.
  Continued funding for low-income programs: Year-in and year-out, funding for low-income assistance programs is on the chopping block. Federal funding has decreased more than 50% in the last 10 years.
- I favor a per-meter Systems Benefits Charge, consumer education targeted at low-income consumers, and learning from successful education programs (e.g., Pennsylvania Electric Co.'s program).

Some Key Written Points Submitted by the Contractor

Electric Restructuring and the Low-Income Consumer, by Roger Colton.

The failure of a competitive industry to protect the interests of low-income consumers flows from two general types of problems: (a) the failure of competitive markets to compete for low-income consumers; and (b) the inability or unwillingness of low-income customers to participate in the competitive market.

Current subsidies to Colorado: During 1998, low-income residents received about $52 million in home energy subsidies, and the amount has been declining of late:

1. Federally funded Low Income Home Energy Assistance Program (LEAP) provided basic cash fuel assistance to 57,752 households (average of $343);
2. Government assistance in the form of utility allowances for 23,000 public housing units totaled $18 million;
3. The Property Tax Credit program provided $10 million in rebates to qualifying homeowners;
4. The Colorado Energy Assistance Foundation provided $3.7 million, mostly through LEAP.
5. Weatherization provided $8 million through the state-administered Energy Saving Partners Program.

Possible impacts on low-income consumers: they are expected to be relatively inactive participants in a competitive electric market, due to market barriers. Adverse consequences are expected in the areas of rates (price shifting, higher prices), bills (ancillary fees) and customer service (reduced timeliness, avoiding service termination, etc.).

Potential legislative responses: most of the 11 items suggested by the Contractor, and supplied in the form of proposals written in legislative language, were voted on by the Panel. The results of the initial straw poll are listed under "mitigation options" below.

Excerpts from the Panel's Discussion of Low-Income Consumers

- If the electric industry is restructured, a clear public policy to ensure affordability must be put in place. Policies must also ensure that people with low incomes or who live in high-cost areas be able to afford service. Specific programs must be created to ensure services to all people, with particular attention paid to preventing service cut-offs, providing discounts for households in need, and low-income weatherization.
- If competition were introduced, could it be done for all customer classes at the same time, in an overnight-type fashion? There are serious implementation issues which may lead to spreading out the process for a year or more. However, some states have effectively protected residential and low-income consumers during this phase-in process.
- Regarding the non-discrimination issue, the key concern is red-lining of customers or entire neighborhoods.

Key points regarding this issue

- **Based on income statistics, roughly 20% of Colorado's residents meet the criteria for a "low-income consumer**" (at or below 150% of poverty level).
- **The Colorado counties with the highest percentages of households considered low-income are rural counties.**
- **Low-income consumers bear a larger "energy burden" than other consumers.**
- **The various funding mechanisms provided $52 million during FY 1998 to help low-income consumers. The trend is for a decrease in this number, due to revenue decreases in all sources.**
- **If competition is introduced, a variety of consumer safeguards, including funding for low-income consumers, will be essential.**

Renewable Energy, Energy Efficiency Programs, And Environmental Issues And Programs

Language from Senate Bill 98-152

(3)(d) "An assessment of the potential impacts of market-based retail competition on the development of renewable sources of electric supply, energy efficiency programs, and environmental issues and programs, together with any recommendations to address such potential impacts."

Key Facts

Colorado's hydropower resources are relatively mature. By comparison, wind and solar power technologies are still emerging. However, during 1998 and 1999, 40 MW of wind energy will have been installed by PSCo (about half driven by customer subscriptions, the other half as a result of a settlement in a regulatory matter).

Regulatory and utility commitments to utility-sponsored demand side management have dropped since the advent of the restructuring debate.

During 1996, about 86% of power generation within Colorado came from coal-fired power plants. During 1996, about 94% of electricity consumed in Colorado was generated by coal-fired power plants.

In Pennsylvania, 400,000 people have switched suppliers since restructuring, and 28% of those "switchers" selected the green market.

Colorado had no plants subject to Phase I requirements of the EPA's Acid Rain Program for SO_2 and NO_x emissions reductions.

Comments by Presenters to the Panel

Tom Corr, Electric Power Research Institute

- The overall trend is going towards weaning ourselves from the carbon economy.
- Industry R&D has been reduced since the advent of the restructuring debate.

Mark Mills, Mills McCarthy & Associates

- In the Energy Information Administration's 20-year forecasts, non-hydro renewable energy doesn't show up. Photovoltaics are not going to make a dent. To grow beyond a marginal role, wind power must solve its dispatchability problem.
- The anti-fossil-fuel trend will increase electric rates. It is dangerous to set a 20% policy mandate of contribution from renewables; if renewables are cheaper, they will be developed and used.

Terri Walters, National Renewable Energy Lab.

- The cost for wind energy has declined 50% from 1985 to 1995. DOE forecasts 2.5 cents/kWh from wind by 2002.
- For 12 years, photovoltaic panel production has grown 12%/year and costs have declined by almost 70%. Costs are expected to drop to $3/watt by 2005 (or 11 cents/kWh +/-).
- A recent study of Colorado homeowners showed that 76% are willing to pay extra for electricity from renewable sources.
- During restructuring, California set aside $540 million to produce renewables (plus $250 million for energy efficiency).

Terry Ross, Center for Energy and Economic Development

- Recent Environmental Protection Agency data shows that the air everywhere in Colorado is getting better. Denver failed to meet air quality standards 4 days during 1991-1995, down from 25 days for the period 1986-1990.
- Restructuring should not be a means to promulgate new environmental standards.

Bruce Driver, Land and Water (LAW) Fund

- The environmental footprint of electrical generation is large: regional haze, urban visibility, the risk of global climate change, and the adverse impact on the land. Electric utilities account for 74% of SOx, 28% of NOx, and 44% of CO^2 emissions in Colorado.
- By 2015, if the LAW Fund's Blueprint for Colorado were followed, we project that our electricity would come from these sources: coal = 55%, renewable = 16%, natural gas = 11%, energy efficiency = 10%, clean coal = 5% and hydro = 3%. No net loss of coal industry jobs, and new renewables jobs.
- Since 1996, we have lost our focus on energy efficiency, which is the victim of inaction caused by the restructuring debate. We are now in a no-man's-land, which is worse than a decision either way.

Rich Rosen, The Tellus Institute

- Stone & Webster's environmental scenario, implementing 800 MW of renewable energy, was quite attractive to ratepayers. Rates increase just 1%, which should be considered positively given the environmental impacts.

Summary Comments from Contractors

From EIC/CH2MHill:

- Market-based retail competition may favor low-priced electricity supply to the detriment of less mature markets for renewable energy and energy efficiency services. A number of studies suggest that market-based retail competition could result in an overall increase in emissions of pollutants. Other studies suggest that more open and competitive markets, if properly structured, could benefit renewables, efficiency, and environmental protection.

- Although there has been some success with green pricing and energy efficiency programs under comprehensive regulation, there remain large untapped resources of both renewable energy supplies and energy efficiency potential in Colorado. The near-term concern is whether the renewable energy and energy efficiency industries are sufficiently mature to survive in the more competitive marketplace, and if support mechanisms are created, whether their costs are acceptable to policy makers.

Excerpts from the Panel's Discussion of Renewables, Energy-Efficiency, and the Environment

- Green pricing has demonstrated a demand for renewable energy in Colorado.
- Wind is not always available when needed, compared to traditional electric power resources; it requires other resource backup.
- Given environment risks, it would be prudent to diversify our resources, even though renewables are intermittent, new, and pose some technology risks.
- The Panel should support the four recommendations in the 1998 Governor's Task Force on Renewable Energy.
- Renewable energy should not be subsidized.

Key points regarding this issue

- **Under the regulated monopoly structure, Colorado has typically found ways to invest in energy efficiency, renewable resources, and air quality improvement.**
- **While not specifically documented in Colorado, utility investments in energy efficiency appear to have declined since about 1995 when the potential for retail competition first became real.**
- **Most Panelists favor market-based solutions for supporting renewables, energy efficiency and the environment.**
- **The Panel was more divided about these issues than on most other issues.**
- **Historical levels of investment in renewable energy resources and energy efficiency should be maintained for some transitional period in the event of industry restructuring.**
- **If people could vote their environmental values with their pocketbook in a competitive market, would it result in more renewables and energy efficiency?**

TAXES, FEES, PAYMENTS IN LIEU OF TAXES AND FEES, AND OTHER REVENUES

Language from Senate Bill 98-152

(3)(e) "An analysis of the effects retail competition may have on the amount and collection of taxes, fees, payments in lieu of taxes and fees, and other revenues by Colorado's taxing authorities, including local governments."

Background and Definitions

The current tax system grew up around a regulated electric-utility industry. The state collects sales taxes for 159 statutory municipalities and 47 counties. In addition, 41 Home Rule cities assess/collect their own sales, use and property taxes. Utilities pay a variety of other fees, including franchise fees, property taxes, income taxes, and payments in lieu of taxes. If we restructure, the tax system may have to shift as well.

An important principle in the collection of taxes is "nexus:" Here it fits as a question: does a state or locality have "nexus"--the power to levy a sales tax on a utility's transactions?

Key Facts

The electric utility industry is one of Colorado's largest industries. Total assessed value of electric industry property in Colorado is approximately $1.2 billion. The State collects about $100 million/year in property taxes from utilities. In some counties, the size of the local power plant valuation is a very high percentage of total property valuation. Examples: Moffat = 57%; Morgan = 35%; Routt = 10%. In Pueblo, it's 8% and in Denver it drops off to 2.3%.

The state imposes a 3% sales tax on the sale of electricity. Total state sales tax revenue from electricity service is approximately $20 million, out of a total of about $2 billion collected annually.

While Colorado's 269 municipalities rely to some degree on revenues from utilities to fund general operations, some rely heavily on them. Sample municipal revenues attributable to electric power service, expressed as a percent of the general fund: 9% in Colorado Springs, 6% in Pueblo, 4.8% in Denver.

Comments by Presenters to the Panel

Matthew Brown, Director of Energy Programs, National Conference of State Legislatures

- The first states to restructure their electric utility industries did not pay attention to potential impacts on taxes. Once restructuring was passed, it only became clear after the first year of or so that state and local taxes were an issue. States which addressed tax issues prior to restructuring, rather than afterwards, include New Jersey, Vermont, Missouri and Iowa.
- As for the other industries that have deregulated, the capital assets involved were smaller.
- The key tax issues to consider:
  --the potential for tax revenue losses;
  --the potential for tax revenue shifting;
  --the potential for tax burden shifting;
  --the potential for competitive advantage to some electric suppliers.
- As a precondition of selling power, several states have either looked at, or put in place, a rule that says any entity supplying power to their state must have a physical presence—at least an office—within that state. There are potential legal questions whether states have the right to impose this condition.

Richard Timberlake, Senior Utility Appraiser, Division of Property Taxation, Colorado Department of Local Affairs

- Competition is expected to drive profit margins down. This means less income for the stockholders or members and, therefore less value, which lowers property taxes.
- Some reasons why utility assets can sell for more than net book value: the purchaser is also buying an approved utility construction site, a customer base, access to the grid, an entrance into the market, and power to sell.
- Changing the tax system could inhibit the entry of new competitors.

Phillip Horwitz, Tax Audit and Compliance Division. Colorado Department of Revenue

- County and statutory city revenue from electricity has not been determined, but can safely be assumed to be larger, on a percentage basis, than the state sales tax.
- Collection from out-of-state vendors of electricity will be costly and very complex.
- Investor-owned utilities are subject to the state's income tax, whereas RECs and Munis are exempt from state income tax.
- How might restructuring affect state revenues from electricity sales? Sellers without nexus will probably be able to sell into Colorado without collecting Colorado sales and income taxes. (As used here, nexus refers to the ability of a governing body to tax out-of-state electricity suppliers.) This might put them at a competitive advantage, compared to Colorado-based utilities.

Ken Bueche, Director, Colorado Municipal League

- The exact numbers on tax collections related to the sales of electricity are not readily available.

- Three guiding principles if restructuring occurs:
  --make it revenue neutral;
  --level the playing field, regarding in-state vs. out-of-state players;
  --Don't plan on any restructured electricity-related taxes in Colorado, partly because it is tough to do, and partly because of the TABOR Amendment.
- If just the tax situation were the deciding factor, you would want to stay with the current electric industry system.
- If you decide to restructure, deal with the tax issues at the time you restructure. Clarify that sales tax occurs in the jurisdiction where the electricity is consumed.
- The bottom line here: there are a lot of unknowns. You won't know the full impacts until after restructuring happens.

Comments from Contractors

From EIC/CH2MHill's report:

The sale of electricity is based on a long history of a regulated marketplace. A shift to retail competition implies a change in the amount and distribution of tax and fee revenues and in the allocation of tax and fee burdens. Regional (Front Range, Western Slope, Rural) and local (city, county) differences may become more prominent, as will the relative competitive positions of different electricity provider groups. The difficult task of designing an acceptable tax and fee structure is further complicated by the restrictions imposed by the Taxpayer Bill of Rights (TABOR) laws. Finally, the legal authority for these taxes and fees will range from the U.S. Constitution (relating to interstate commerce issues, for example) to the State constitution to the regulatory provisions of state agencies such as the Public Utilities Commission and the Department of Local Affairs to county, city and special taxing districts.

The general perception of Colorado stakeholders is that, with restructuring, the greatest threat to tax revenues is the loss, or significant devaluation, of a power plant.

Key points regarding this issue

- **The electric utility industry has a significant impact—amounting to several hundred million dollars--on the tax base of state and local governments.**
- **A shift from revenues based on a regulated environment to a competitive market would change the amounts collected and the complexity of collection.**
- **The best mitigation: tax issues need to be resolved by the General Assembly prior to or simultaneously with restructuring.**

NET STRANDED COSTS, NET STRANDED BENEFITS

Language from Senate Bill 98-152

(3)(f) "An assessment of whether Colorado's existing electric utilities will incur stranded costs and investments if retail competition is introduced, the estimated amounts of any such stranded costs and investments, and the recommended methods for timely recovery of such stranded costs and investments that is just and reasonable to both consumers and existing utilities, including whether or not regulatory expectations should translate into recoverable expenses as a result of the incurrence of stranded costs."

Background and definitions

During any shift towards retail competition, "stranded costs" refers to costs that utilities may not be able to recover in the prices they charge their customers. Net stranded costs may be defined as the difference between the book value of an asset under cost-of-service regulation and the market value of the asset in a competitive market. Stranded benefits are the opposite of stranded costs, i.e., market values that exceed book values. "Stranded benefits," in this context, is synonymous with "net negative stranded costs."

Within the states that have initiated restructuring of their electricity industries, the issue of stranded cost recovery remains a contentious hurdle. The three concerns which most frequently recur: determining a definition of stranded costs; developing a process to determine stranded cost values and recovery time-frames; and selecting mechanisms to mitigate stranded cost impacts.

Key Facts

The national range of stranded cost estimates is from $72 billion to $163 billion. Of all the states that have restructured or are in the process of doing so, none have dealt with the situation where there are net stranded *benefits*, not net stranded *costs.* The significance of this fact is that the Panel's contractors calculate that in a restructured environment, Colorado utilities would likely experience significant net stranded benefits, not costs. Unless managed properly, ratepayers could be placed at a distinct disadvantage.

To date, the time frames in restructuring states for the recovery of stranded costs has ranged from 3.5 to 8 years.

Comments by Presenters to the Panel

John Hilke, Staff, Federal Trade Commission

- If the area of stranded cost recovery is not done correctly, it makes the opportunity for entry of new competitors to be virtually nil.

Janis Carey, Assistant Professor of Economics, Division of Economics and Business, Colorado School of Mines.

- It is important to distinguish between costs resulting from government policies and costs resulting from poor utility management. Consumers shouldn't be able to escape costs incurred on their behalf. And investors should not expect to be fully compensated.

Charles Cichetti, University of So. California

- If generating stations have stranded benefits, it is because the expected competitive price of generation will, on average, exceed the regulated cost of service for this same generation. In other words, prices might go up. Hence state regulators are cautious about embracing competition in low-priced states and are not eager to address stranded benefits.
- The final irony is that if we decide that all the [stranded] benefit goes to the customers, we would be weakening our incumbent companies by reducing their ability to go into the worldwide competitive market. If you go about flattening the (local) company, you will regret it.

William Hieronymus, PHB Hagler Bailly, Inc.

- Here is what some states have done. New York said let's get on with restructuring and we will give utilities 100% cost recovery. In California, they did a price cap and stranded-cost recovery through the securitized Competitive Transition Charge. In Massachusetts, the Attorney General used stranded cost recovery as a club to get divestiture of assets. In New Hampshire, they went to court when the utility sued after the PUC only gave them 50% of stranded-cost recover. This has stopped competition in that state.
- There are no happy answers to measuring stranded costs.

Summary Comments from Stone & Webster:

Restructuring Colorado's electric industry is likely to cause small stranded costs in the short term and significant stranded benefits in the long term. Annual statewide stranded costs in the Baseline Scenario Full Competition with Poolco Case are estimated to be $85 million in 2003; by 2004, there are stranded benefits of

approximately $38 million, and this amount increases to more than $800 million in 2017. The net present value of these stranded costs and benefits is approximately $1.3 billion in the Baseline Scenario Full Competition with Poolco Case.

The net present value of statewide stranded benefits varies significantly across scenarios and policy cases. Stranded benefits are highest in the Wholesale Competition Only case [$2.7 billion]) and smallest in the High Efficiency Poolco case [$590 million].

One strategy for mitigating the effects of stranded benefits is to refund 100 percent of such benefits to ratepayers. Restructuring the Colorado electric industry along any of the lines considered in this report would result in retail rate increases, even with 100 percent stranded benefit refund. For the state as a whole, retail rates are forecast to increase approximately 4 mills (4/10ths of a cent) per kWh in 2003, rising to between 6 and 8 mills in 2017.

Excerpts from the Panel's Discussion of Stranded Costs

- So much of the stranded cost issue depends on market price assumptions.
- The popular method of collecting stranded costs through a "wires charge" does not work in a consumer-owned utility environment because there is no distinction between the ratepayer and the shareholder/owner. Any potential non-recovery cannot be shifted to non-ratepayers.

Key points regarding this issue

- **The issue of stranded costs and/or benefits is both complex and contentious.**
- **To date, no state that is restructuring has been faced with significant stranded benefits.**
- **Between now and the year 2017, Stone & Webster forecasts that Colorado utilities will experience stranded benefits ranging between $500 million and $2.7 billion, depending on which structure for retail competition is assumed.**
- **The Panel favors full reimbursement of stranded benefits to ratepayers, but is uncertain about the amount and the time frame of those reimbursements.**

UNIVERSAL SERVICE, RELIABILITY, AND AVAILABILITY OF COLORADO'S GENERATION

Language from Senate Bill 98-152

(3)(h) "An assessment of the estimated impacts of retail competition on the requirement of universal service, including the affordability of distribution service, and on the reliability of generation supply and transmission service, including the continued availability of Colorado's generation resources for Colorado consumers."

Background and definitions

The first step in the consideration of universal service is to establish a definition for the concept. Today's statutory and regulatory structure does not contain such a definition, though a number of statutory provisions establish a kind of outline for universal service policy for Colorado. Utilities not jurisdictional to the COPUC--cooperative electric associations and municipal electric utilities--approach universal service issues as individual entities.

As used by the Panel, universal service applies to a customer's connection to "wires"—the distribution system and the provision of a standard offer service for electricity supply (also called Provider of Last Resort).

The energy modeling committee agreed to use a loss of load probability of one hour in 10 years as the reliability standard to hold as a constant in the base case and competition scenarios.

Key Facts

Colorado's generators have the capability of producing approximately 7,000 MW of electricity. Just over half that capacity is produced by the State's five largest power plants.

Comments by Presenters to the Panel

Jack McNally, IBEW

- I have doubts whether reliable electric service can be provided under restructuring. Look at the airline deregulation process: a recent article about the Airlines Passenger Fairness Act recently appeared. That piece of legislation proposes to address restrictions, refunds and overbooking.
- When you consider electric competition, ask yourself why hasn't competition taken care of those issues in the airline business?
- California utilities now have a regular maintenance schedule. The California restructuring act, Assembly Bill 1890, placed requirements on the utility to conduct inspections and achieve maintenance standards. When the public saw maintenance slip, reduction in forces, etc., they reacted with a legislative lobbying effort. This results in a higher PUC-imposed standard. You need to have some stability for your workforce, stability in the transmission and distribution.
- California experiences problems during the summer when a lot of the available energy was withheld until the price was right. By simply withholding power for three or four hours, there was gaming of the system. The managers of the Independent System Operator (ISO) had to do what they had to do, such as price caps, in order to ensure reliability. They are slowly working through those things.

Key Comments from Contractors

From Stone & Webster:

- We strongly believe that there is no reason that the reliability of generation supply needs to decrease due to the introduction of retail competition. However, we believe equally strongly that, except in fairly unusual circumstances, it is not enough to simply state that generation reliability will not be degraded; instead, mechanisms to ensure that generation reliability is not degraded must be established. In most other jurisdictions that have made a decision to restructure, the chosen mechanism has been a requirement placed on load-serving entities that they have an amount of capacity under their control equal to their peak load times the quantity one plus a regionally specified reserve margin. For example, if the reserve margin is 18 percent, and the peak load of a load-serving entity is 100 MW, it must have 118 MW of capacity under its control. In this context, "control" can be attained either through ownership or contract
- It is important to note that generation supply reliability is not free. Establishing a reserve margin and a mechanism to enforce it increases the total amount that customers must pay for electricity. All of the modeling we performed included a reserve margin.
- There is enough import capability into California that generation supply reliability there is less dependent on a generation reserve margin than on transmission service reliability, which is maintained separately.

From EIC/CH2MHill:

- Even without a commitment to retail competition in the electricity industry, there could be significant public policy benefits from adopting a uniform definition and policy framework for universal service.
- One simple definition for universal service describes it as "access to a basic package of affordable and reliable electric services." The idea is that universal service is first about access – all customers should have the opportunity to buy affordable and reliable services. Second, the concept involves a basic package of services – including not just an affordably priced commodity supply, but also accompanying services, such as access to billing dispute resolution mechanisms, clear and understandable bills, low income energy assistance and weatherization programs, and a minimally satisfactory level of service quality. Universal service most importantly contemplates affordability. While this does not mean subsidized electricity for every customer in any amount, it does reflect the notion that electricity is too important a service to be denied or be made unavailable to certain segments of society. Lastly, universal service contemplates minimal standards of reliability of service. Again, electricity must be available to customers to meet basic and essential needs.

Excerpts from the Panel's Discussion of Universal Service*, et al.*

- When it comes to the reliability of generation, we won't need regulated performance standards because we'll have contracts with economic penalties. We will offer guaranteed service; that's a product the market is going to see as it deregulates.
- The transition to competition has the potential to be messy; we don't want safety and reliability at risk during that period.
- About penalties, you don't decrease medical costs when you make it easier to sue doctors. If we make it easier to sue utilities when the lights go out, that won't help the cost to consumers.

Key points regarding this issue

- **A definition of universal service is needed.**
- **Maintenance of the current level of universal service and system reliability—both of which could be at risk in a restructured environment--is critical.**
- **Due to transmission constraints, Colorado utilities and other suppliers need localized reserve margins.**
- **Reserve margins should be maintained at a level at least adequate to maintain current levels of reliability.**
- **Establishment of some type of independent system operator is essential; however, details about the design of that entity will require negotiations.**

EFFECTS ON UTILITY EMPLOYEES

Language from Senate Bill 98-152

(3)(h) The Panel shall provide…"an assessment of the likely effects that the introduction of retail competition may have on the employees of electric utilities."

Background

Note to reader: this section discusses both utility employees and non-utility employment issues.

Market-based retail competition in the electric utility industry, as envisioned by its proponents, will create incentives for increased operational efficiency and reduced operational costs. This suggests a potential for continued decline in employment in electric utilities and, possibly, some associated businesses such as mining.

Some non-utility businesses could see growth in employment as a result of restructuring if it creates a competitive environment sufficiently attractive to support business expansion. A critical issue is whether adverse employment impacts may be regionally concentrated, or exaggerated by multiplier effects in certain regions and communities.

Some express concern that the historical shift from full-time to contract employment at utilities could lead to a long-term shortage of trained employees and a resultant risk to system-wide reliability and safety. A parallel concern is the gradual aging of the utility sector's work force.

Key Facts

There are over 3,000 utilities in the U.S. Since 1990, there has been an estimated 25% reduction in the work force.

In Colorado, an estimated 7,000 people worked in the utility sector during 1998.

Although not directly on-point regarding utility employees, between 1986 and 1995, the coal mining industry in Colorado lost one-third of its jobs. Despite the job loss, due to dramatic improvements in coal mining techniques and other factors, Colorado coal production has increased substantially since 1970. In 1995, approximately half of Colorado's coal production of 25.9 million tons was burned in state, and half is shipped out of state. Another 5.7 million tons was imported from the Powder River Basin in Wyoming, and burned in Colorado power plants.

The gas industry is a vibrant part of the Colorado economy, contributing substantially to the Colorado tax base and employment (with approximately 15,000 employees). The gas industry is likely to be a major supplier of gas to the expanding Colorado utility industry irrespective of the decision to go forward with restructuring.

Comments by Presenters to the Panel

Jack McNally, business manager, IBEW, Calif.

- Electric industry restructuring will forever change the culture of utility work as being a "career job."
- With restructuring, customer-billing jobs could be lost to out-of-state entities.
- There is a question of whether the free market will spend the time and money to properly train power plant operators, which could effect reliability.
- The question is whether reliable electric service can be provided under restructuring. I have doubts about that.
- Post-restructuring lobbying led to the imposition of a higher standard of maintenance scheduling by the CAPUC.

Comments from Contractors

From EIC/CH2MHill:

One key concern in Colorado is whether potential negative employment impacts are sufficiently large or regionally focused to create significant economic problems. Some argue that competitive markets are themselves a driver for job-creating investment in the state. They suggest that the introduction of market-based competition could result in more jobs gained than lost, so long as market entry is facilitated or encouraged. Low income services, energy efficiency and renewable energy advocates point out that their service options are more job-intensive than coal or natural gas-fired electricity generation, and therefore measures to encourage these sectors will result in job growth as well.

As utilities and new market entrants seek to minimize labor costs by reducing full-time employment, a concern is raised over whether Colorado will receive the reliability and safety benefits of a well-trained, experienced electricity infrastructure workforce. However, some argue that reductions in highly skilled workers at utilities are more a function of pre-competitive cost-cutting strategies in the face of uncertain market conditions and have stabilized.

Restructuring could improve business certainty within functional areas that are likely to remain regulated (i.e., transmission and distribution), and safety and reliability standards imposed through regulation could create incentives for maintaining a highly trained and skilled infrastructure workforce.

Performance based regulatory mechanisms could be imposed for market participants, especially the distribution and transmission providers. These mechanisms could create indirect pressure to maintain

adequate staffing levels by rewarding safe, reliable service and penalizing failures. Though these mechanisms could properly provide an incentive for adequate staffing, they could have the effect of increasing costs for distribution and transmission service, dampening the cost reduction benefits of competition.

Most stakeholders believe that some employment changes are inevitable in the electricity industry as a result of the introduction of market forces. Few stakeholders express strong concern that the potential negative impacts are a critical issue, and many argue that the best incentive to employment growth is robust competition in the industry.

From Stone & Webster/DRI:

By 2017, the state could face a total job loss of 29,946 jobs with the introduction of retail competition under the Poolco without Stranded Benefit Subsidies case. In the same year, the state could face a total loss of 6,198 jobs with the introduction of retail competition under the Poolco with Stranded Benefit Subsidies.

Excerpts from the Panel's Discussion of the Impact on Utility Employees

- If the electric utility industry is restructured, we must strive to maintain (or improve) system reliability.
- The utility industry is cutting back on employees; our local alone has lost 24% of its employees since 1994. Yet meters and electric loads are growing in number, so how do we maintain the system?
- Increasingly, labor is being contracted out, sometimes to untrained people. We would like to see a certification of skill levels, especially for power plant operators. At present, the industry is not training enough new people to come up and replace the current people in five or ten years.
- Financial deterrents should be established to deter suppliers from cutting back on standards.

Key points regarding this issue

- **While demand for electricity is increasing, employment at utilities is declining.**
- **There is a relationship between skilled employees and system reliability.**
- **Panel: if competition is introduced, we need safeguards for utility employees.**
- **Coal jobs and gas jobs do not appear to be at a direct risk of being substantially affected by a decision one way or another with respect to electric restructuring.**
- **Overall Colorado employment could be affected if the economic modelers' projections occur.**

IMPACTS ON RURAL CONSUMERS

Language from Senate Bill 98-152

(3)(i) "An assessment of the likely effects of the introduction of retail competition on rural communities, rural areas, and rural consumers of electricity."

Background

Representatives from rural utilities and rural communities in Colorado consider electricity to be something much more than a commodity, and that local control of retail electricity markets is an essential part of the rural human and economic infrastructure. The differences in distribution costs between the rural distribution utilities and the front range utilities (exemplified in dramatic differences in the number of customers per line of mile of distribution facilities) raise concerns that rural communities will not be attractive markets for competitive energy service providers and will be bypassed in a fashion similar to shrunken airline service to rural areas following the deregulation of the airline industry. The expectation among rural representatives is that rural consumers will lose the economic and customer service benefits of cooperative and municipal utility ownership, without receiving many of the benefits believed to flow from more open and competitive markets.

Key Facts

As described earlier, many consumers in rural Colorado are served by one of the 25 rural electric cooperatives that serve the majority of the land area in Colorado. Cooperatives are owned by their members (customers) and account for 20% of Colorado's retail electricity sales.

In addition, many consumers living in smaller Colorado communities are served by small municipal utilities. Of the 29 municipal utilities in Colorado, 24 have retail sales revenues totaling less than $7 million/year.

Comments by Presenters to the Panel

Bob Pomeroy, Holland & Hart, representing industrial customers

- Colorado ought to open up the electricity market for everybody. We can do better than Montana, but we do have to work on solutions. For every problem that has been brought up, there are solutions. Solutions are being developed in every state. We ought to stop asking questions about the problems, and start assuming that the train is on the track. We can't go on pretending that it is not on the track. It is a big mistake if we come out of this just filling some potholes.

Dave Carter, Rocky Mountain Farmers Union

- I worry that restructuring will result in a loss of a guarantee of reliable service, which is so vital to rural Colorado. Farmers are extremely vulnerable to electricity problems. Rural communities need to be assured of availability and affordability of electricity.
- The Farmers Union's opposition to retail wheeling grows out of the rural heritage, where electricity is inextricably linked to the vitality of our communities. I question the use of the term "competition" as a mantra for something that is necessarily good.
- Perhaps the most illustrative study of the impact of restructuring was the Black and Veatch study conducted for the Wyoming Public Service Commission. They concluded there would be very little net gain for Wyoming. When they did their sensitivity analysis, they showed that the industrial consumers would get a 20% rate decrease, while the residential customers would get an increase.

Terry Walters, National Renewable Energy Laboratory

- Consider the economic development benefit of developing more renewable energy sources. U.S. manufacturing of many renewable technologies is growing at over 20% per year. Installation of renewable energy is labor-intensive, and provides significant local benefits. Renewables can provide additional income in rural areas. Consider the experience of wind farms in the Midwest, where farmers lease their land at $100/acre to a wind developer, yet they are giving up less than 10% of their land productivity to the facilities. In the case of biomass, where in some cases you have to pay to get rid of agriculture or forestry wastes, you can turn around and sell the biomass for fuel.

Summary Comments from Contractor

CH2MHill: Any policy decision to support the restructuring of the electric utility industry must consider that the costs and benefits of competitive markets may not be uniformly distributed between urban and rural areas. The implication is that if the policy decision is made to move forward with restructuring, careful attention must be given to remedial actions to ensure that service quality in rural areas is not unduly compromised and that vulnerable utilities and consumers receive adequate protection. These statutory and/or regulatory actions fall broadly into seven categories: equitable treatment of all consumers; nondiscriminatory access to affordable electric service; safety and reliability; consistency in the standards, regulations and oversight of all retail electric service providers; duplication of retail

delivery systems; recovery of stranded costs; and exercise of market power.

Excerpts from the Panel's Discussion of Rural Issues

- The best solution is to give customers a choice, and let them vote with their dollars. We ought not go into this trying to harm low income, rural people, or anyone else. We ought to go at this constructively.
- With respect to rates and rural impacts, study after study has proved that it takes 10 to 12 years before deregulation of an industry can bring a benefit to rural areas. The studies all indicate that deregulation hasn't helped rural areas. The preliminary results of the Stone & Webster study show this, as have many other studies detailing rural impacts through deregulation.
- It is against the weight of the evidence to argue that restructuring will create or move jobs to rural Colorado. We have experienced the impacts of deregulation of other industries, and the scorecard is not good. The much-ballyhooed benefits of airline deregulation, trucking deregulation, railroad deregulation, and telecommunications deregulation has not been visited upon rural areas. We have experienced opposite visits, in the form of higher costs, reduced service, and in some cases, no service at all.
- We have no assurance that the so-called "benefits" of industry restructuring will ever reach rural areas, where the average consumer density is 6.5 consumers per mile of line.
- Certainly, we are still waiting for the benefits of airline, rail, busing, and telecommunications deregulation to reach rural Colorado.

Key points regarding this issue

- **Most Panel Members believe the potential impacts of electric industry restructuring on rural areas would be negative.**
- **The representatives for rural areas are uniformly concerned that any benefits from restructuring would arrive last, if ever, in rural areas.**
- **Setting up a system which allows "opt-in" action by utilities serving rural consumers, critical to rural representatives on the Panel, received a fairly strong vote of confidence from the entire Panel.**

Language from Senate Bill 98-152

(3)(j) ”An assessment of the impact on competition, including any competitive advantage afforded to any provider of electricity, including investor-owned utilities, cooperatively-owned utilities, municipally-owned utilities, and independent power producers, provided by any federal, state, or local laws. Issues to be assessed shall include, but not be limited to federal electricity, access to lower-than-market-rate capital, and preferential sales.”

Also, (3.5)(d) “Existing legal requirements that could impose unfair competitive advantages and disadvantages on existing and potential providers of retail electric service.”

[Note: the Panel elected to combine these issues during their deliberations.]

Background

For those considering comprehensive regulatory changes to the electric utility industry, resolving state and federal jurisdictional issues promises to be among the most complex and difficult facing policy-makers. IOUs have been subject to the Federal Energy Regulatory Commission and state commissions while publicly owned utilities are regulated by their own governing bodies or federal statute. This mixture of regulatory authority in the same market areas could impair and hamper the ability of state and federal officials to set important regulatory policies leading to an open and fair competitive electricity market.

The principal concern among stakeholders is the extent to which structural, legal and financial advantages currently enjoyed by different competitive groups in Colorado could translate into a cost advantage in a competitive market for retail customers.

In Order 888, the FERC stated that prices, terms, conditions and access to the transmission and distribution grids must be compatible with both reliable operation and free and fair competition for electric power. Many of the details regarding the role of independent entities and regulatory oversight are still unresolved.

Key Facts

Two investor-owned utilities serve 63% of the customers in Colorado. The retail electric business of IOUs is regulated by the Commission, while FERC regulates the wholesale electric business of IOUs.

The 25 rural electric coops and 29 municipal electric utilities serve 20% and 17%, respectively, of Colorado’s customers. Local governing bodies regulate Munis and Boards of Directors have jurisdiction over coops.

Comments by Presenters to the Panel

Ed Comer, Edison Electric Institute

- There is some sentiment in Congress towards clarifying the question of reciprocity (the terms and conditions of electric commerce between states that have introduced retail competition and those that have not).
- Reforming the Public Utilities Holding Company Act and the Qualifying Facilities section of the Public Utilities Regulatory Policy Act is receiving a fair amount of support. The question is whether PUHCA and/or PURPA reform should be stand-alone efforts or part of comprehensive electric utility industry restructuring legislation.

Dave Penn, Deputy Director, American Public Power Association

- There are plenty of potential winners and losers in electric utility restructuring.
- If the transmission system is constrained, you can forget about there being competition.
- He stated that electric reliability questions require an independent system controller; establishing this will have financial impacts that must be applied in a competitively neutral manner.

Key points made by the Contractor

From EIC/CH2MHill:

- Federal power marketed by the Western Area Power Administration is sold to municipally-owned and cooperative-owned utilities under long-term contracts, so-called preferential power. Because many of the power purchase contracts have terms that are below current and projected competitively-based market clearing prices, they provide a competitive advantage to Munis and coops. To assure that competition is not distorted or limited by statutorily conferred cost advantages, IOUs maintain that the resale of preference power should be prohibited.
- The electrification of rural America was very dependent on the availability of cheap federal power, in large part to compensate for the much higher distribution costs associated with rural and farming communities. The loss of federal preferential power could raise rates to rural consumers.
- Currently, public-owned utilities are required to open all meetings to the public and provide all planning and financial information to the public record according to strict open records and public meetings laws. The fact that investor-owned utilities, independent power producers and marketers do not have the same requirements, and their ability to access important planning and financial information of public utilities, affords them a potentially large competitive advantage in more open and competitive markets.

- The ability of municipal utilities to expand their service territories through annexation is being drawn into question in the context of competitive markets.
- The emerging market is clearly interstate in nature. As buyers and sellers in different states transact in a regional market, the actions of any one state regulatory body will affect the nation's ability to realize efficiency gains. For example, developing regional markets can be hindered if disputes arise between states seeking to maximize competitive gains for their ratepayers. New institutions to address these concerns are being developed, such as regional transmission groups, independent system operators and power exchanges, but they are being developed within the confines of the existing jurisdictional framework.

Excerpts from the Panel's Discussion of Competitive Advantages

- If restructuring were implemented in Colorado, the Panel is recommending that the distribution function would still be a regulated monopoly, thus there would be no need to disturb existing Colorado law to accommodate a restructuring regime.
- One transmission owner is an investor-owned utility; all others are either government or customer owned. The regulatory requirements under FERC, the Energy Policy Act of 1992, and the Federal Power Act currently appear to be inconsistent between the investor-owned utility and other owners. However, FERC Orders 888, 889 and the pending Notice of Proposed Rulemaking on Regional Transmission Organizations are attempts to provide equitable open access to all transmission users.
- When discussing competitive advantage, note that many cooperatives are replacing RUS loans with market loans and that, overall, there has been a diminution of subsidies within the cooperative sector.
- Virtually all annexations by municipalities take place because landowners desire annexation and petition the municipality for annexation. Rarely does annexation occur on a unilateral basis without being initiated by landowners.
- We must be able to solve the annexation and erosion of service territory issue prior to moving forward with restructuring.

Key points regarding this issue

- **Policy makers face a complex slate of technical, financial and legal items within this issue of competitive advantage and fairness.**
- **The Panel agrees that restructuring could lead to competitive advantages and disadvantages impacting all types of utilities in Colorado. Based on early votes, Panel members do not agree as to how to mitigate associated problems.**

LICENSING REQUIREMENTS

Language from Senate Bill 98-152

(3.5)(a) "The Panel shall include in its implementation plan recommendations for addressing the following issues:…Licensing requirements for suppliers of electric energy."

Key Facts

There are 2 investor-owned, 26 rural electric cooperatives and 29 municipal electric utilities in Colorado. Of these, the COPUC has rate jurisdiction with respect to the two investor-owned electric utilities plus one of the cooperatives (whose members voted to be re-regulated by the PUC). The other retail distribution utilities answer to and are overseen by local governing bodies such as city councils for the municipals and boards of directors for the cooperatives. "Licensing," per se, is not an issue under the status quo.

Summary of Written Comments from the COPUC Staff on Licensing

The COPUC currently provides for various types of regulation. Certain providers of regulated telecommunications and transportation services become certified or registered in order to legally offer services in Colorado. Others are neither certified nor registered by the Commission, but are nonetheless required to fund the Colorado High Cost Support Mechanism ("CHCSM") which was set up to fund the provision of telecommunication services in high cost areas. The Commission acts as administrator for the CHCSM fund and bills those telecommunications providers.

The Staff contacted certain states and jurisdictions to ask for specific policies, orders, etc. related to how licensing is conducted in states that are restructuring the electric industry. The Staff chose specific states or jurisdictions after learning they were in some phase of restructuring or were possibly studying electric restructuring. Fifteen states and four foreign countries were initially contacted. States selected for the questionnaire were California, Illinois, Maine, Massachusetts, Maryland, Michigan, Montana, New Hampshire, New Jersey, Nevada, New York, Oregon, Pennsylvania, Rhode Island, Texas, and Utah.

The following list summarizes 16 specific issues that states surveyed are requiring or are considering for registration/certification. The number of the 15 states requiring or considering each measure is listed in parentheses.

1. Registration, certification or licensing required by regulatory body (14)
2. Evidence of financial fitness (13)
3. Slamming and/or cramming prohibition (12)
4. Provider disclosure of terms and prices for customers, including operations planned and contemplated (12)
5. Authority to do business in the state (10)
6. Affiliated interest disclosure to give all equal opportunity in the marketplace (8)
7. Bond/insurance, letter of credit requirements (8)
8. Evidence of technical fitness (7)
9. Fining capability of regulatory body for non-compliance; ability to revoke or suspend license (6)
10. Pollution/containment disclosure—energy sources and emissions attributable to each (6)
11. Service territory and customer class provision disclosure (5)
12. Disclosure of customer complaints or legal actions, corporate changes (bankruptcies)(5)
13. Safety and reliability standards (4)
14. Evidence of managerial experience (4)
15. Felony disclosure and background check on company officials (4)
16. Sample bill provision or disclosure of entity doing billing (4)

A questionnaire was sent to interested parties in Colorado that included 26 issues related to registration/licensing/certification. The interest groups contacted included consumer advocates, agricultural interests, investor-owned utilities, labor interests, government agencies, large energy users, municipal utilities, rural electric cooperatives, and others. The questionnaire results were:

- If Colorado restructures its electricity industry, should licensing be required—70 yes, 1 no

If yes, please select other requirements from among the following:

- Provide financial information and demonstrate financial fitness--67
- Be registered to do business in Colorado by the Secretary of State--66
- Provide information about its corporate and ownership affiliations--66
- Acknowledge that slamming and cramming are prohibited--63
- Attest as to accuracy and truth of the application--63
- Describe how it intends to provide service to its customers--62
- Acknowledge that some customer information is protected—62
- Be required to provide price information--61
- Provide any regulatory or legal action taken against applicant--59
- Provide evidence of valid power contracts--59
- Be required to pay an application fee--58

- Provide and validate the sources and emissions of its energy--55
- Provide sample customer bill if it intends to produce bills--55
- Financial bond posting--55
- Background check on principals of company--50
- Disclose how billing will be accomplished--49
- Be required to define geographic area where it intends to provide service--45
- Key official energy experience information --36
- Be required to service all customers in a geographic area--30

Key points regarding this issue

- **If restructuring occurs, the requirement to license electricity suppliers received unanimous support.**
- **The licensing requirement should not be onerous.**
- **Licensing activities would likely be delegated to the COPUC.**
- **The attached list of recommended items offers an agreed-upon starting point.**

LOCAL CHOICE

Language from Senate Bill 98-152

(3.5)(b) "The Panel shall include recommendations for addressing…..(b) local choice participation options for cooperatively-owned and municipally-owned utilities."

Background

Many cooperative and municipal utility stakeholders are concerned about the possible impacts of restructuring on their unique role in the community as suppliers of electricity. Publicly owned electric utilities are expected to support their communities by promoting local economies and improving the quality of life through appropriate provision of electricity. A principal concern for many stakeholders is the maintenance of local decision-making authority in the face of any major restructuring within the electric utility industry.

Key Facts

During 1996, Colorado's 29 municipal utilities supplied over 17% of the electricity sold within the state. At that time, there were about 316,000 meters on their systems.

During 1996, the 26 rural electric cooperatives sold 20% of the state's retail electricity to about 374,000 meters.

Between 1986 and 1996, the combined share of the state's electricity sold by municipal and cooperative utilities rose from 35% to 38%.

The percent of local government revenues associated with electricity sales or operations varies from modest in larger communities (4.8% of Denver's General Fund) to extremely significant in several smaller population, but energy producing counties, such as Moffat County and Morgan County.

Of the eighteen states reporting adoption of EUIR as of 5/20/99, all have approved an option given to municipal electric systems to decide whether to participate in the restructuring regime, with the exception of Maine where there are only five very small municipal systems and Montana which offers an opt-out option. There is only one very small municipal system in Montana.

Comments by Presenters to the Panel

Errol Stevens, Second Wind, a consultant to the City and County of Denver.

- Mr. Stevens made a brief presentation to the Panel concerning **municipal aggregation**. He said the City wants the Panel's report to include the following language: "Establish the right of municipalities to act as agents to automatically aggregate the loads of users within their jurisdictional boundaries, for the purpose of seeking the best price in a competitive market, only if an opt-out provision is included to accommodate users who so choose." The Panel then discussed the concept and language, and what restructuring legislation would define as due political process. Panel Member Jacque Wedding Scott said she has been looking at the issue of aggregation of deregulated natural gas to obtain a better rate for Lakewood. Other members questioned whether automatic municipal aggregation is consistent with customer choice. Ken Bueche of the Colorado Municipal League encouraged the Panel to have an effective form of aggregation.

Summary Comments from Contractors

***The following four summary comments from EIC/CH2MHill's report are based on their interviews with Colorado stakeholders*:**

* Local governments have a substantial stake in the outcome of electric industry restructuring in terms of revenue streams, the ability to protect and advance public interest and to protect the welfare of businesses and residents, and the ability to guide key infrastructure development. Representatives from rural cooperative and municipal utilities feel very strongly that their participation in competitive retail electricity markets should be predicated on a voluntary choice, and not mandated by either state or federal authorities. To this end, they have enumerated certain conditions as a prerequisite for local participation.

* Other stakeholders feel that these conditions are too broad and expansive, are not warranted by the competitive risks, will inhibit fair competition, and serve to protect competitive advantages not afforded to other groups of competitors. They feel that if competition is deemed to be in the best interest of the State, all consumers should be given equal access to competitive supplies and energy services, and that consumer protection, universal service, and public benefits should be prescribed and administered on a uniform basis across the State.

* Local government is a "natural aggregator." Local governments aggregate consumers for a range of essential services. Through aggregation for electric service, it is argued, consumers may gain greater benefits and terms of service. As an aggregator, local government is a non-profit, non-discriminatory service provider, subject to ethics and open-bidding laws, and to local control by consumers. Furthermore, it is argued that local government aggregation offers transparent pricing and consumer oriented benchmarks for service; the institutional standing and statutory powers of local government help to enforce contract compliance.

* The power and authorities of local government for franchising electric service vary from state to state. Thirty states indicate local electric franchise contracts are still in use. Another eleven states indicate local government with substantial franchising power for electric service even though contracts are not currently in use. Nine states indicate that local franchising power have been removed to the state level.

Excerpts from the Panel's Discussion of Local Choice

- Folks who could not get power from investor-owned utilities have aggregated for their own benefit for 75-80 years through distribution cooperatives. Those aggregations have then themselves aggregated for their continuing benefit for 45 to 50 years, through generation and transmission entities. Aggregation is a very good thing and should be continued and expanded.
- One of the key decisions to be made involves the need for a different restructuring model for public power than for investor-owned utilities.
- There are essentially two related issues here: First, the option to participate in restructuring by the consumer-owned utility ("opt-in"); and, second, the right of the consumer-owned utility to establish the rules governing a decision to opt-in.

Key points regarding this issue

- **About 38% of Colorado electricity is sold through municipal and rural cooperative utilities.**
- **Representatives from rural cooperative and municipal utilities feel strongly that their participation in competitive retail electricity markets should be voluntary, not mandated. The Panel supports that position.**

MARKET POWER

Language from Senate Bill 98-152 (3.5)(c)

"The Panel shall include in its implementation plan recommendations for addressing…market power and measures to mitigate such market power."

Background and definitions

Courts often define market power as the ability to control prices or to exclude competition. When effective competition doesn't exist in the electric utility industry, a firm or group of firms is said to have market power and can profitably set their price above the cost to produce the next unit of electricity.

Horizontal market power is the ability to raise prices based on share of the market for a single product. Vertical market power is the ability to raise prices for one good, such as generation, as a result of controlling one or more other levels of the supply chain (such as transmission or fuel supply).

Key Facts

In Colorado, PSCo controls 63% of the generation from the five large Colorado utilities analyzed in this study. Note that "control" is related to, but differs from, ownership. "Controlled generation" is defined as owned generation plus generation purchased from other entities under long-term contract, less generation sold to other entities under long-term contracts.

By virtue of their number of power plants and the relative inelasticity of demand, an incumbent utility could strategically withhold capacity to ensure that their next (more expensive) plant is dispatched. This is an example of the exercise of market power.

PSCo owns the bulk of transmission lines within Eastern Colorado. Ownership of key transmission lines into Eastern Colorado is concentrated among consumer-owned utilities and government entities. That transmission has significant constraints, called TOT 3 and TOT 5 limits (TOT means total). Like the narrowing point in an hourglass, these limit the amount of power which can be imported to the region from Wyoming (1424 MW), over the Continental Divide (1680 MW) and southwestern states. The boundary of the western states' electricity grid runs along Colorado's eastern border, drastically limiting the amount of power importable from east of the border. From a transmission perspective, the electric load pocket on the Front Range and eastern plains of Colorado is somewhat isolated, rather like a peninsula.

Comments by Presenters to the Panel

John Hilke, Staff, US Federal Trade Commission:

- As we move away from regulation we have to make sure that unmitigated market power doesn't move in.
- To mitigate market power, one approach is to encourage the entry of many competing players in the electric industry.
- Don't wait for 'after-the-fact' anti-trust efforts to bail you out.
- Independent System Operators (ISOs) should help mitigate vertical market power.

Charles Cicchetti, Univ. of So. California

- There is probably a locational market power issue that must be considered in Colorado. The good news is that we know what to do about it. "Meet or beat" pricing can work. With this approach, residential and small commercial customers would be told for a period of time…that the utility will unbundle the price of generation, and newcomers can enter the market if they can beat the price. During a transition period, incumbent utilities can keep their customers at a regulated price.

William Hieronymus, PHB Hagler Bailly, Inc.

- Can the owner of transmission use it to constrain entry of electricity, or can it favor its own generation? The first category of response to potential market power is to watch and wait. The state of Pennsylvania has not imposed any mitigation on their utilities' potential market power.
- Maine's legislature required all utilities to sell all their power plants. California required the utilities to sell half their fossil units. New York only required limited divestiture. Wisconsin is trying to get more transmission built. When things got out of hand in the UK, regulation was reinstituted.

Ron Moe, Stone & Webster project team

- PSCo controls 2/3 of utility-controlled generating capacity in Colorado. In other jurisdictions, that level of concentration has been cause for concern, deemed high enough to require divestiture to mitigate market power.

Summary from Contractor's Report

From the Stone & Webster's report:

In the short term, PSCo would possess market power in a Poolco-like wholesale energy market. It is projected that PSCo could force wholesale energy prices approximately 13% higher and retail rates approximately 7% higher than they would be in the absence of such market power. This could yield profits to PSCo estimated to reach $142 million between 2003 and 2006, plus $182

million in incremental profits to the other Colorado utilities during this period.

In the long term, even in the Poolco case, PSCo's market power would be dissipated by construction of combined cycle merchant power plants instead of the combustion turbine merchant plants built in the absence of the exercise of market power. As early as 2003, construction of combined cycle merchant plants would start reducing the market power strength of PSCo and other utilities.

A Key Point-Counterpoint from the Panel's Discussion of Market Power

Point: Most proponents of restructuring do not recommend that Colorado move toward a Poolco-like market structure. Therefore, as some point out, in a different structure for the electricity market, market power exercised by PSCo and other utilities would be less serious than that estimated by S&W. In fact, S&W's analysis indicated that if the market responded by building more power capacity—what they saw as a reasonable assumption—the impacts of market power would be much lower in dollar amounts. Also the role of an ISO, as well as the Standard Offer that can lessen market power, need to be considered.

Counter-point: The OCC stated that S&W's modeling methodology excluded several important factors which led to their underestimating the potential impacts of market power. They believe market power is possibly the most important, and least understood, long-term issue that arises in the debate over electric industry restructuring. Electricity generation is more prone to the exercise of market power than most commodities are because storage is expensive or non-existent, transport is capital-intensive, and demand is relatively price-inelastic. OCC believes that in a deregulated market for electricity, the potential exercise of horizontal market power in Colorado presents a very serious challenge to state policy- makers.

Other Comments by Panel Members

- The greatest concern for consumers is the possibility of deregulating generation resulting in a deregulated monopoly.
- Investor-owned utilities oppose mandatory divestiture of generating facilities.
- Vertical market power exists in Eastern Colorado since transmission owners are also generation owners.

Key points regarding this issue

- **PSCo controls 63% of generation (of the five large utilities analyzed here).**
- **With retail competition, there is a possibility for the exercise of excessive market power, particularly in the early years.**
- **Left unmitigated, the exercise of market power by utilities would likely raise rates.**

Contents of Electronic Appendix

(The following information is available by accessing the Panel's website, www.dora.state.co.us/puc)

Issues Packets
Ballot Questions
Tally of Members' Votes
Issues That Received Twenty or More Votes
Minutes of Panel Meetings
Notes from the Seminar and Dialogue Series
Reports of the Panel's Contractors
- Stone & Webster
- CH2MHill
- Roger Colton
- Barbara Alexander
- Staff of the Colorado Public Utilities Commission

Draft Evaluation Study (July 1, 1999)
News Releases issued
- July 1, 1999
- November 1, 1999

Report on Public Meetings and Public Comments on the Panel's Draft Report

Concluding Statement

The Electricity Advisory Panel issues this Evaluation Study Report after reviewing the facts and opinions from many sources over the past fifteen months. We acknowledge receipt of valued inputs, including detailed research reports from our consultants and the Colorado Public Utilities Commission Staff, presentations from fifty speakers at our Seminar and Dialogue Series, interaction with fellow Panel Members, statements from the general public, and personal interactions with interested colleagues. We have responded to the issues mandated by the Legislature to be assessed. Every Panel Member has provided an answer to the question of whether restructuring of the retail electric industry is in the best interests of all classes of Colorado electricity and the state as a whole. Upon request, we stand ready to further advise the General Assembly and the Governor's Office.

Respectfully Submitted,

Dave Wattenberg, Chair
Colorado Electricity Advisory Panel
November 1, 1999