Competition in the Generation, Sale and Transmission of Electric Energy

Legislative Counsel Bureau

Bulletin No. 97-11

January 1997

COMPETITION IN THE GENERATION, SALE AND TRANSMISSION OF ELECTRIC ENERGY

BULLETIN NO. 97-11

JANUARY 1997

TABLE OF CONTENTS

SUMMARY OF RECOMMENDATIONS

This summary presents the recommendations approved by the Legislative Commission's Subcommittee to Study Competition in the Generation, Sale and Transmission of Electric Energy. The subcommittee recommends that the 69th Session of the Nevada Legislature:

1. **Appoint a six-member interim study subcommittee to conduct further investigation into all aspects of restructuring the electric industry. The subcommittee should consist of three members from each house who serve on the standing committees of destination for restructuring issues. The Legislative Commission should select the chairman and provide the necessary staff for the subcommittee. The subcommittee should meet not less than quarterly and receive normal compensation for salary and per diem. All decisions should be made by a simple majority vote of the members. The subcommittee should conduct its proceedings and make its deliberations in accordance with the ten General Principles adopted by this subcommittee on June 12, 1996.**

REPORT TO THE 69TH SESSION OF THE NEVADA LEGISLATURE BY THE LEGISLATIVE COMMISSION'S SUBCOMMITTEE TO STUDY COMPETITION IN THE GENERATION, SALE AND TRANSMISSION OF ELECTRIC ENERGY

I. INTRODUCTION

The 68th Session of the Nevada Legislature adopted Assembly Concurrent Resolution No. 49 (File No. 172, *Statutes of Nevada 1995*, pages 3049 and 3050) which directed the Legislative Commission to conduct an interim study of the nationwide trend toward competition in the electric power industry and assess the potential economic consequences and opportunities for Nevada associated with deregulation. The commission appointed a subcommittee of eleven legislators to carry out the provisions of the resolution. A copy of A.C.R. 49 is contained in Appendix A.

The Legislative Commission appointed the following legislators to serve on the subcommittee:

Assemblyman Peter (Pete) G. Ernaut, Chairman
Senator Sue Lowden, Co-Vice Chair
Assemblyman Joseph E. Dini, Jr., Co-Vice Chair
Senator Kathy Augustine
Senator Raymond C. Shaffer
Senator Dina Titus
Senator Randolph J. Townsend
Assemblyman Douglas A. Bache
Assemblywoman Deanna Braunlin
Assemblyman John C. Carpenter
Assemblyman David E. Goldwater

Legislative Counsel Bureau (LCB) staff services for the subcommittee were provided by:

Scott Young, Senior Research Analyst
Kimberly A. Morgan, Chief Deputy Legislative Counsel
Kim Marsh Guinasso, Principal Deputy Legislative Counsel
Ricka Benum, Research Secretary
Linda Chandler Law, Senior Research Secretary

The subcommittee held eleven meetings during the course of the study. Four of the meetings were held in Carson City, six in Las Vegas, and one in Elko. All except one of these meetings were video conferenced between meeting rooms in Carson City and Las Vegas. (All place-names are within Nevada unless otherwise noted.)

During the course of the study, the subcommittee heard extensive testimony from experts and the public regarding the potential impacts of competitive electric markets and efforts in other jurisdictions to evaluate the consequences of such competition. The subcommittee reviewed legislation enacted or pending in several other states and before the United States Congress. Additionally, the subcommittee studied information presented by national and regional organizations such as the National Conference of State Legislatures (NCSL) and the Western Systems Coordinating Council (WSCC). It received testimony and correspondence from concerned citizens, energy consultants, energy-related industries, representatives of Nevada's utilities, and various interest groups. State and local officials contributed information and suggestions throughout the study.

At its final meeting, the subcommittee adopted a recommendation, including a bill draft request (BDR), for consideration by the 1997 Legislature. The recommendation urges continued legislative study of electric industry restructuring, consistent with the ten General Principles adopted by the subcommittee.

This report contains background information on the historical development of the electric power industry and the recent changes it has undergone and is undergoing in other jurisdictions as a result of federal and state initiatives. The report also contains a summary of the recommendations made to the subcommittee by interested parties.

A large volume of data was collected in the course of the study and much of it is included in exhibits which became part of the subcommittee minutes. All supporting documents and minutes of meetings are on file with the Research Library of the LCB.

II. OVERVIEW OF THE ELECTRIC POWER INDUSTRY

Currently, there is significant interest in introducing more competition into both the wholesale and retail markets for electric energy and services. The former area is under federal control; the retail market is largely, but not exclusively, subject to state jurisdiction. Proponents believe that allowing market mechanisms to determine energy prices instead of establishing rates by regulation will promote least-cost electricity generation and foster price signals that encourage efficient use of energy resources. Defenders of the current system contend that it has created the most reliable and inexpensive electric industry in the world. This document briefly outlines some of the many issues associated with restructuring the electrical industry.

A. Summary

- Rising costs of producing electricity triggered by recession and inflation in the 1970s coupled with environmental initiatives mandated by state regulatory commissions, expensive nuclear power plants, foreign oil embargoes, and natural gas shortages led to higher electricity rates

for consumers. Additionally, generating capacity was over built because most forecasters misread the energy market.

- In recent years, the resultant higher rates have spurred interest in more competitive, free-market mechanisms for establishing electric prices, patterned after federal deregulation of basic industries such as telecommunications and transportation.

- Federal enactments such as the 1978 Public Utility Regulatory Policies Act (PURPA) and the Federal Energy Policy Act of 1992 (EPAct) opened the way for new types of energy producers and a more competitive wholesale market for electric services. In some instances, however, these laws required utilities to purchase renewable power at higher-than-market rates.

- Initiatives by Congress and the Federal Energy Regulatory Commission (FERC), in turn, led some states to consider "retail wheeling" as a means of fostering a market-driven, as opposed to a regulated, electrical industry. Retail wheeling allows customers to bypass the local utility, purchase power wherever it is cheapest, and pay the local utility a fee for transmitting the electricity over its lines.

- The California Public Utilities Commission (CPUC) presented a "Blue Book" proposal in April 1994 that would have allowed, as part of a fundamental restructuring of the electric industry, retail wheeling for large industrial customers in 1996 and extending the service to all users by the year 2002. This proposal prompted extensive debate on restructuring in other states and in Congress.

- Restructuring has significant consequences for environmental issues, equities between classes of electrical consumers, and long-range planning, as well as utility shareholders.

B. Historical Development of the Electric Industry

Some background on utilities will assist in understanding how the electric industry is presently structured and how it has evolved. In turn, this information will aid in analyzing how opening the system to more competition may impact that structure.

1. State Regulation

When the electric industry began, the sector was competitive. Although utilities were granted franchises by local governments, these franchises typically were nonexclusive. At the turn of the century, industry dissatisfaction with open entry, coupled with public concern over franchise abuses, led to statewide regulation. Between 1905 and 1934, some 40 states established public utility commissions. The electric industry persuaded regulators to grant exclusive franchises in return for limiting rates to "prudent" costs plus a "reasonable" rate of return on investment.

2. Federal Power Act of 1935

Until 1927, state utility commissions regulated most aspects of electric utilities, including establishment of rates for interstate sales of electricity. In that year, the United States Supreme Court handed down its decision in *Public Utilities Commission v. Attelboro Steam and Electric Company* (273 US 83), prohibiting state regulation of interstate electric rates on the ground that such regulation created a burden on interstate commerce. However, no federal authority over interstate electric sales existed and, therefore, the *Attelboro* ruling resulted in a regulatory gap. The Federal Power Act of 1935 (FPA) was enacted to address this situation. The FPA gave the old Federal Power Commission (FPC) jurisdiction over transmission of electric energy in interstate commerce and the sale of electric energy at wholesale in interstate commerce.[1]

According to Professor Kenneth Nowotny, the electric industry experienced almost constant growth until 1972.[2] The price of electric energy fell during virtually the entire period due to economies of scale, technological change, and vertical integration of production.

The industry became characterized by large, mostly self-sufficient, vertically integrated utilities controlling exclusive service territories in which generation, transmission, and distribution facilities were owned by a single entity and electricity was sold as part of a "bundled" service or package with one all-inclusive rate.[3] Regulated rates established by state utility commissions were based on factors such as the cost of producing and distributing power, the anticipated future demand for electricity, and the cost of building the necessary generating plants. Allowable profits were determined largely on the size of investment in new plants and what the state commissions determined to be the fair rate of return for shareholders on those investments which were "prudently incurred" i.e., considered to be reasonable and necessary or "used and useful." According to some commentators, such cost-based policies created pricing structures that encouraged over staffing, "gold plating" investments, cross-subsidies among consumer classes, creation of excess capacity, and suppression of innovation.[4] This characteristic structure of exclusive franchise territories coupled with an obligation to reliably serve all customers within the service area and rates based upon prudently incurred investments has come to be known as the "regulatory compact."

---

1 Costello, Kenneth W., Robert E. Burns, and Youssef Hegazy; "Overview of Issues Relating to the Retail Wheeling of Electricity," The National Regulatory Research Institute, May 1994: p. 36.

2 Nowotny, Kenneth; "Expectations and Ideology Define Electric Utilities, in *Electric Utilities Moving Into the 21st Century* (Enholm and Malko eds.), Public Utility Reports, Inc., Arlington, 1994: p. 25.

3 Federal Energy Regulatory Commission (FERC) Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, Docket No. RM95-8-000, "Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities," and Docket No. RM94-7-001, "Recovery of Stranded Costs by Public Utilities and Transmitting Utilities," May 29, 1995: p. 29; 70-FERC,¶ 61,357.

4 Nowotny. *Electric Utilities Moving Into the 21st Century*, p. 27

3. Public Utility Holding Company Act

Another feature of the traditional electric utility has been confinement to a limited geographical area. The Public Utility Holding Company Act of 1935 (PUHCA) prohibited acquisition of any wholesale or retail electric business through a holding company unless that business formed part of an "integrated public-utility system" when combined with the utility's other electric business.[5] This provision largely prohibited a utility from owning facilities that were not located within, or contiguous to, the utility's existing service area. Additionally, PUHCA restricted ownership of an electric business by nonutility corporations.[6]

In the 1970s, recessionary and inflationary pressures reduced electricity demand, and resultant excess capacity contributed to price increases. Additionally, foreign oil embargoes drove up the price of oil, the principal fuel used by many electrical utilities. Finally, environmental concerns, the prohibition of new natural gas usage, and nuclear power plant costs all led to increasing electricity prices for the first time in the industry's history.[7] Between 1970 and 1985, average residential electricity rates more than tripled in nominal terms while industrial electric prices more than quadrupled.[8] In some cases, these price increases prompted industrial customers to bypass utilities by constructing their own generation facilities.

Professor Nowotny notes that, as environmental concerns about air and water pollution increased, along with attempts to reduce dependence on foreign oil through conservation, state utility commissions began developing demand side management (DSM) programs. These programs were designed to persuade consumers to use less power. The rationale was that conservation was less costly to the ratepayers than new plant construction. The cost of these programs was included in rates.[9]

Additionally, alternative sources such as geothermal, solar, and wind were encouraged. Some commissions began mandating that specific percentages of new power had to come from these renewable sources, even though the cost per kilowatt hour was higher. States also began implementing integrated resource planning (IRP) programs to coordinate DSM and supply side management techniques with environmental projects and renewable energy initiatives.

---

[5] Measures to repeal or amend PUHCA have been introduced in Congress. See Footnote 23.

[6] Department of Public Utility Control, State of Connecticut, decision in Docket No. 94-12-13, "DPU Investigation into the Restructuring of the Electric Industry," July 14, 1995: p. 5.

[7] Nowotny. *Electric Utilities Moving Into the 21st Century*, p. 25.

[8] FERC Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, p. 32.

[9] Nowotny. *Electric Utilities Moving Into the 21st Century*, p. 31.

4. Public Utility Regulatory Policies Act

In 1978, when Congress passed PURPA in response to the energy crisis,[10] its goal was to reduce dependence on expensive foreign oil and to avoid repetition of the 1977 natural gas shortage by encouraging utilities to conserve gas and oil. This enactment created a new category of electric business: independent, unregulated companies known as qualifying facilities (QFs). These entities are permitted to build cogeneration plants that produce electricity and use otherwise wasted heat to generate steam.[11] Facilities may also qualify by meeting specific energy requirements such as using prescribed types of renewable energy; e.g., biomass, geothermal, solar, or wind Once a QF has been certified, it is exempt from the PUHCA restrictions on geography and ownership (except a utility may still not own more than 50 percent of a QF). A qualifying facility can be owned by either a utility or a nonutility and may be located anywhere. Additionally, QFs were granted the legal right to sell electricity to utilities at avoided cost.[12] Avoided cost is the cost for the utility to self-generate or purchase power elsewhere. By 1988, FERC, successor to the FPC, had approved approximately 62,000 megawatts (mWs) of QF capacity[13] (each megawatt can supply approximately 1000 households for a year), Presently there are about 1200 such facilities.[14]

About the time PURPA was enacted, traditional utilities were becoming reluctant to build new power plants due to declining demand, environmental concerns, and nuclear power problems. Additional economies of scale that had helped establish the dominance of large vertically integrated utilities were no longer being achieved, primarily because larger generation plants tend to need more maintenance and experience longer down times.[15] Concurrently, technological advances, which utilized combined cycle natural gas turbines and circulating fluidized bed boilers, allowed newer, smaller generating plants to be brought on line more economically and with shorter lead times. The optimum size for generating plants changed from 500+ mW facilities with ten-year lead times to units with one-year lead times producing between 50 and 150 mW.[16] Currently, the smaller plants can produce power on the grid at between three and five cents per kWh. The larger coal plants typically produce power at a cost of four to seven cents per kilowatt hour (kWh), while nuclear facilities average nine to 15 cents.[17] Such conditions led to the rise of independent power

---

[10] Measures have also been proposed in Congress to amend or repeal PURPA. See Footnote 23.

[11] Nowotny. *Electric Utilities Moving Into the 21st Century*, p. 28.

[12] Department of Public Utility Control, State of Connecticut, p. 5.

[13] The National Regulatory Research Institute (May 1994), p. 28.

[14] FERC Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, p. 39.

[15] Ibid, p. 34.

[16] .Ibid, p. 35.

[17] Ibid, p. 36.

producers (IPPs). These companies build power plants for a fee and then sell the electricity to utilities. Frequently, IPPs are subsidiaries of electric utilities. According to Schmidt and Oechsler,[18] IPPs are responsible for one-half of the new generating capacity that has been added since 1989. Along with QFs and nonutility generators (NUGs), which are usually large consumers that have self-generating capacity, IPPs came to be viewed as potential competitors of traditional utilities in electric power generation.

In the late 1970s and the 1980s, certain basic industries began to be deregulated at the federal level. The theory was that a free market competitive approach, based on supply and demand, is a more efficient mechanism to establish price and methods of production. Savings and loans, airlines, motor carriers, railroads, telecommunications, and natural gas pipelines were all deregulated.[19] According to one estimate, the nation has realized at least $36 to $46 billion (in 1990 dollars) annually from deregulation, amounting to approximately a 7 to 9 percent increase in the component of Gross National Product affected by regulation.[20]

5. Energy Policy Act

Early in the 1990s, proponents of this competitive market approach initiated steps to extend it to the electric industry. Congress responded by establishing a new national energy policy strategy embodied in the Energy Policy Act of 1992 (EPAct). The intent was clear: the electric industry was to move toward a fully competitive market system, with FERC being responsible for most of the implementation.[21] The EPAct granted exemptions from PUHCA requirements under certain conditions for a corporation whose exclusive business is ownership and operation of a generating plant that sells its power at wholesale. Such an entity is known as an exempt wholesale generator (EWG). An EWG is also exempt from PURPA's cogeneration and renewable energy requirements.[22]

Thus, EPAct created the potential for significant deviations from the traditional vertically integrated pattern that had characterized the electric utility industry for many decades. The changes in PUHCA and PURPA under EPAct authorized the formation of new generating

---

[18] Schmidt, Dr. Michael R., and Dr. Ronald G. Oechsler, "The Challenges of Retail Wheeling," unpublished work presented to the Utah Department of Public Utilities, September 7 and 8, 1994, Resource Management International, Inc., 1994: p. 2-1.

[19] Nowotny. *Electric Utilities Moving Into the 21st Century*, p. 29.

[20] Winston, Clifford, "Economic Deregulation: Days of Reckoning for Microeconomists," *Journal of Economic Literature*, The Brookings Institution, (September 1993) at pp. 1264, and 1284-1285; cited in "Investigation by the Department of Public Utilities on Its Own Motion Into Electric Industry Restructuring," D.P.U. 95-30, Commonwealth of Massachusetts (August 16, 1995): p. 2.

[21] FERC Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, p. 45.

[22] Department of Public Utility Control, State of Connecticut, p. 6.

companies that were separate from, and often independent of, traditional utilities, thereby opening the utility market to wholesale power transactions (known as "wheeling") among utilities.[23] The evolution beyond the traditional vertically integrated industry structure has also fostered the growth of wholesale power marketers and brokers. Marketers buy electricity from generators and then resell it to a utility; brokers do not actually take title to power but instead match wholesale buyers and sellers for a fee.[24]

However, for all these new entities, generators and middlemen alike, to effectively compete in the wholesale market, they need access to the nationwide transmission grid, which is generally owned by the vertically integrated utilities. Therefore, EPAct authorized FERC to order transmission-owning utilities to open their lines to parties desiring to buy or sell electricity at wholesale.[25] Thus, EPAct greatly expands FERC's jurisdiction over wholesale wheeling transactions.[26] However, to the extent that it would infringe on state laws granting utilities exclusive franchise areas, EPAct specifically prohibits FERC from ordering retail wheeling. At the same time, EPAct provides that, "Nothing in this subsection shall affect any authority of any state or local government under state law concerning the transmission of electric energy directly to an ultimate consumer".[27] This array of federal actions prompted debate at the state level on how to promote greater wholesale and retail competition among power producers, a topic covered in more detail below.

C. Role of the Federal Energy Regulatory Commission (FERC)

1. Creation of Regional Transmission Groups

Because of its expanded responsibilities under EPAct, FERC has pursued several initiatives to increase competitiveness at the wholesale level. The commission has issued policy statements to address various aspects of wheeling. One of the more significant policy statements, issued

---

[23] In the 104th Congress, Senator Don Nickles (R-OK) sponsored S. 708 to repeal Section 210 of PURPA dealing with QFs. Senator Alfonse D'Amato (R-NY) also introduced a bill, S. 1317, to repeal PUHCA and create a new holding company act. Additionally, in October 1995, the Electricity Consumers Resource Council (ELCON) proposed that PUHCA and PURPA be repealed in their entirety and that the FPA be substantially amended. Representative Dan Schaefer (R-CO) introduced H.R. 3790 on July 11, 1996, and reintroduced it on February 10, 1997, as H.R. 655. This bill would reform PUHCA and repeal PURPA. Also on July 11, 1996, Representative Ed Markey (D-MA) sponsored H.R. 3782 which addresses similar issues. On September 28, 1996, Representative Tom Delay (R-TX) introduced H.R. 4297 to prospectively repeal PUHCA and PURPA. On January 7, 1997, the first day of the 105th Congress, Representative Cliff Stearns (R-FLA) introduced H.R. 338, to repeal Section 210 of PURPA. Senator Dale Bumpers (D-ARK) sponsored S. 237 on January 30, 1997, to repeal PUHCA and partially repeal PURPA, and require states to implement retail competition by 2003.

[24] Department of Public Utility Control, State of Connecticut, p. 7.

[25] Ibid, p. 6.

[26] The National Regulatory Research Institute (May 1994), p. 40.

[27] Public Law 102-486, 106 Stat. 2904, § 722(3), found at 16 U.S.C. § 824k(h).

August 5, 1993, encourages the formation of Regional Transmission Groups (RTGs). An RTG is a voluntary organization of transmission owners, transmission users, and other entities interested in coordinating transmission planning, expansion, operation, and use on a regional and interregional basis.[28] To date, FERC has approved three RTGs: the Western Regional Transmission Association (WRTA), the Northwest Regional Transmission Association (NRTA), and the Southwest Regional Transmission Association (SWRTA). The geographically smaller NRTA and SWRTA function as subregional RTGs of WRTA.

The FERC requires RTG members to offer nondiscriminatory equal access to transmission facilities to other RTG members, thus furthering FERC's goal of open access to the grid for all buyers and sellers of electric power. Pursuant to this requirement, a member owning transmission facilities must provide service to other RTG members on a basis comparable to what the owner provides itself. The RTG members also covenant that all transmission requests from members will be met from existing capacity or else a public utility must offer to build new capacity. Furthermore, members agree to utilize the RTG dispute resolution process before resorting to FERC hearings. This requirement is designed to expedite dispute resolutions through arbitration and mediation rather than prolonged litigation at FERC and in the federal courts.

2. FERC's "Mega-NOPR" and Order 888

Additionally, FERC opened several dockets, referred to as NOPRs (Notice of Proposed Rulemaking), dealing with the wheeling issue. Chief among these was the so-called "Mega-NOPR" issued March 29, 1995 (also known as the "Giga-NOPR"). This 315-page document embodied FERC's proposal for developing a more competitive wholesale electric energy market by ensuring wholesale buyers and sellers could reach each other through elimination of anticompetitive and discriminatory practices in transmission services. On April 24, 1996, after extensive proceedings, FERC issued its final ruling, which is known as Order 888. Among other things, this order provides:

- All utilities under FERC jurisdiction are required to file nondiscriminatory, open access transmission tariffs available to all wholesale buyers and sellers of electric power.

- Utilities must use these same tariffs for their own wholesale purchases and sales to avoid reaping any advantage in the marketplace from ownership of transmission facilities. Under a companion ruling, Order 889, utilities are required to provide information electronically through a process known as the Open Access Same-time Information System (OASIS). This procedure requires the utilities to make available to their wholesale competitors the same information the utilities use. The OASIS system began operation on the Internet January 3, 1997.

---

[28] FERC Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, p. 56.

- Under specified conditions, utilities are allowed to recover legitimate and verifiable stranded costs[29] resulting from the transition to competition.

3. State and Federal Jurisdictional Issues

Another important issue involving FERC is the scope of respective federal and state jurisdiction. Wholesale electric sales and interstate transmission of energy, whether wholesale or retail, are exclusively within FERC's jurisdiction. Distribution is under state control. The FERC has specifically acknowledged that it does not have authority to order retail wheeling under PURPA and EPAct.[30] The agency has also indicated that retail stranded cost issues should be resolved at the state level. In Order 888, FERC ruled that stranded costs which are the result of wholesale competition will remain under FERC's jurisdiction, while those caused by retail competition will fall under state jurisdiction. Any stranded costs that fall between the wholesale and retail levels, such as municipalization, will remain subject to FERC jurisdiction. However, there is not always a bright line between stranded costs attributable to wholesale as opposed to retail operations.[31] Additionally, FERC will retain jurisdiction of these issues if a state lacks a mechanism or forum for addressing them.

Order 888 lists seven factors to be used in distinguishing between distribution and transmission:

- Local distribution facilities normally are in close proximity to retail customers;
- Local distribution facilities are primarily radial in character;
- Power flows into local distribution systems; it rarely, if ever, flows out;
- Powering flowing into a local distribution system is not reconsigned to another market;
- Power in a local distribution system is consumed in a relatively restricted geographical area;
- Metering is performed at the transmission/distribution interface; and
- Local distribution systems operate at reduced voltages.

---

[29] Stranded costs are an important issue in restructuring and are discussed on page 19.

[30] FERC Notice of Proposed Rulemaking and Supplemental Notice of Proposed Rulemaking, p. 101.

[31] "Roundtable on Competition in the Electric Utility Industry in New Hampshire Draft Report" (July 28, 1995): p. 11.

The soundness of FERC's jurisdictional analysis has been challenged by the National Association of State Utility Consumer Advocates (NASUCA).[32] Some observers indicate that, in the absence of legislative clarification, the actual extent of FERC's authority may ultimately have to be defined through litigation. In addressing the jurisdictional issue, one commentator has cautioned:

> State legislators and regulators must keep in mind, however, that once transmission service to ultimate customers is offered as an unbundled service, the transmission service is considered interstate commerce . . . Once unbundled transmission service is part of interstate commerce, the FERC has full authority to set prices, terms, and conditions of service.
>
> Thus, even though the authors argue that state legislatures and commissions can permit or require retail wheeling, without the ability to set rates, terms, and conditions of service, they might find this authority more akin to an abdication of jurisdiction to the FERC.[33]

Additionally, Congress has begun re-examining federal energy policy. In 1996, legislation was introduced in Congress that would have repealed Section 210 of PURPA, dealing with QFs. Another proposed measure would have repealed PUHCA. Some segments of industry have called for the complete repeal of PURPA and PUHCA, coupled with substantial amendments to the FPA.[34] On July 11,1996, a bill was introduced that would give states six months to elect retail competition. Substantially the same bill was reintroduced on February 10, 1997.[35] Under this proposal, if states do not make such an election, FERC would be empowered to implement retail competition. In either case, the effective date for such competition would be no later than December 15, 2000. On September 28, 1996, another bill was introduced that would allow consumers to choose their electricity suppliers commencing on January 1, 1998. This measure did not provide for stranded cost recovery and would have given FERC substantial authority over the electric system. Additionally, the bill would have prospectively repealed PUHCA and PURPA if certain conditions were met.[36] Congress held hearings on these and related energy issues. It is anticipated that these matters will be the subject of substantial debate in the 105th Congress. Two new measures have already been introduced in Congress in 1997.[37] Such developments have

---

[32] Letter dated December 7, 1994, and filed in FERC Docket No. RM94-7-001.

[33] The National Regulatory Research Institute (May 1994), p. 48.

[34] See note 23.

[35] On July 11, 1996, Representative Dan Schaefer (R-CO) introduced H.R. 3790 (now H.R. 655). On the same day, Representative Ed Markey (D-MA) introduced H.R. 3782, which addresses similar issues.

[36] H.R. 4297 introduced by House Majority Whip Tom DeLay (R-TX).

[37] See note 23.

led to concern on the part of some observers that traditional areas of state jurisdiction over the electric industry could be reduced or preempted by federal action.

D. Regional Reliability Councils

Another feature of the electric utility industry is the existence of the North American Electric Reliability Council (NERC). This organization was formed in 1968 in response to the blackout that affected the northeastern United States and Ontario, Canada, in November of 1965, and is composed of a network of nine regional reliability councils. The council is a nonprofit corporation whose mission is to promote reliability of the electric supply in North America. This goal is pursued by the adoption of criteria, policies, standards and principles which are voluntarily adhered to by the members of the regional councils. All segments of the electric supply industry are represented on these councils, including federal and municipal utilities. The members account for virtually all the electricity supplied in Canada and the United States, as well as a portion of northern Mexico.

1. July 2, 1996, Western Power Outage

The importance of these regional reliability councils was highlighted in the summer of 1996. On July 2, beginning in Idaho, large sections of the western power grid collapsed. Nearly 2.5 million customers in 14 western states, two Canadian provinces, and northern Mexico were without power for periods of time ranging from a few minutes to more than six hours. The elapsed time from the onset of the incident until the grid collapsed was 35 seconds. The next day, a similar incident occurred but was confined to Idaho. The outages were determined to have been triggered by heavy bulk power flows that caused sagging transmission lines to short-circuit as the drooping wires came in contact with nearby trees.[38]

2. August 10, 1996, Western Power Outage

On August 10, another outage occurred resulting in the loss of service for approximately 5.5 million customers in 10 western states, Canada, and Mexico for periods of up to 16 hours. Again, the cause was found to be short-circuits between trees and sagging transmission lines.

An investigation conducted by NERC and the Western Systems Coordinating Council (WSCC), the regional reliability organization for the western United States, Canada, and Mexico, identified six factors that contributed to the outages. These factors included:

- Near record availability of hydro generation during the peak summer demand period, due to abundant precipitation in the Northwest in earlier months;

---

[38] Western Systems Coordinating Council (WSCC), *Preliminary System Disturbance Report*, July 26,1996.

- High imports of hydro power into the Northwest from Canada;

- High north-to-south movements of electricity on the California-Oregon Intertie to replace higher cost, local generation with less expensive hydro power;
- Significant electricity flows from the Northwest into Idaho to meet unusually high demand and to displace higher cost generation in Nevada, Utah, and the Southwest;

- High levels of generation at coal-fired plants in Utah and Wyoming; and

- Record demand in Idaho and Utah due to hot weather and economic activity.[39]

Based on indications that utilities may have reduced maintenance and tree trimming programs as cost cutting measures, these outages, and an earlier one in California during the winter of 1995, raised concerns among some that competition might adversely affect transmission system reliability as companies attempt to keep operating expenses as low as possible.[40] The outages also prompted discussion of whether voluntary membership in regional councils and voluntary compliance with reliability protocols will be sufficient to ensure proper functioning of the transmission system.[41] In the first week of January, 1997, the NERC board of directors voted to make compliance with NERC protocols mandatory. A NERC task force recommended that regulators require all industry participants to adhere to such protocols as a condition of tariffs, licenses and other official authorizations.[42] In December 1996, the Department of Energy (DOE) announced that it was creating a task force to evaluate reliability of the national power grid and make recommendations to the energy secretary regarding system dependability. The group, known as the Electric System Reliability Task Force, held its first meeting on January 16, 1997.[43]

---

[39] WSCC, *Final System Disturbance Report*, August 1996.

[40] "Lawsuits claim repair cutbacks caused accidents," *San Jose Mercury News*, May 19, 1996; "Power play: 'Cut cost at any cost'--Customers suffer as PG&E trims down to fighting weight for a new era of competition," *San Jose Mercury News*, May 19, 1996; Benjamin A. Holden, "Did Competition Spark Power Outages," *Wall Street Journal*, August 19, 1996.

[41] Remarks of Dennis Eyre, Executive Director, WSCC, before the A.C.R. 49 Subcommittee, September 26, 1996. See also "NERC Explores Reliability Mandates as Government Debates Proper Role," *Electric Utility Week*, October 28, 1996.

[42] *Electric Utility Week*, January 13, 1997.

[43] "Inside Energy/with Federal Lands," December 23, 1996. Task force members include representatives of generators and marketers, federal and state agencies, reliability organizations, and other stakeholders. The group is chaired by former Congressman Philip Sharp.

III. RESTRUCTURING

Retail wheeling, one aspect of open competition, would allow end-user electric customers to bypass the local utility and purchase power from the cheapest seller. There would no longer be exclusive franchise territories. The utilities, as owners of the power grids that transmit the electricity, would be paid a fee for "wheeling" the power over their transmission and distribution lines. Much of the demand for retail wheeling originated with electricity-intensive industries like aluminum, automobiles, and petrochemicals. However, many other businesses are now examining their electric costs as part of their efforts to remain competitive.

A. Unbundling

An integral part of retail wheeling is the concept of "unbundling" prices for electric services.[44] Currently, most customers receive a complete package of energy services that includes generation, transmission, and distribution. The customer pays a single rate for all of these services. Being able to buy power from the least-cost provider and then pay another entity to transmit it is one form of unbundling. If, in addition, the individual components of the cost to deliver electricity are separately priced, customers can select the kind and quality of services that best suit their particular needs. For example, there are other components of electric service referred to as ancillary services that include reactive power, operating reserves, and dispatch service. By unbundling each segment, customers have more choice and can make more efficient use of available energy sources because the price of each component is "transparent." Some observers maintain that, even if retail wheeling is not implemented, utilities should be required to unbundle at least a portion of their energy services.

B. Principal Impacts of Restructuring

At least five principal potential impacts of restructuring have been identified[45]:

- The monopoly power of utilities would be lessened, thereby promoting competition in retail markets.
- State regulators would have to change the traditional approach to rate making.
- Vertical integration of the industry would decline as new generation competition emerges and some utilities consider divesting themselves of generating functions to concentrate on transmission and/or distribution.

---

[44] Department of Public Utility Control, State of Connecticut, p. 9.

[45] *The National Regulatory Research Institute* (May 1994), p. 69.

- The regulatory compact would be reshaped by changing the service obligations of utilities in their former exclusive franchise territories.

- The electric industry would become more cost conscious and responsive to customer needs, including the provision of new types of products, services, and financial arrangements.

It is important to note who would be affected by restructuring. The following interested parties were identified in a February 16, 1995, report by the Public Service Commission of Nevada (PSCN):

- Large regulated utilities [and their shareholders] with diverse generation and transmission portfolios.

- Small regulated distribution utilities with little or no generation, and perhaps some transmission facilities.

- Municipal utilities with or without generation facilities.

- Public utility districts.

- Small residential and business customers.

- Manufacturers and large energy consumer associations.

- Independent power producers and qualifying facilities.

- Federal power systems and agencies.

- Environmental and energy conservation interests.

1. Advantages of Restructuring

Proponents of restructuring maintain that the present system of production and distribution causes retail rates that often greatly exceed the cost of new generation, placing a heavy burden on consumers. These proponents say restructuring offers the following advantages:

- It increases consumer choice by giving large and small customers access to multiple suppliers of electrical services, including DSM programs, at a lower cost.

- Restructuring would reduce rate inequalities that currently exist within the same state and between adjoining regions. These differentials can amount to 50 percent to 100 percent.[46] Rouse gives the following examples:

> In the Western Systems Coordinating Council, an industrial facility in one state would pay over $407,453 per month for 10-mW service with a load factor of 68 percent; while a competitor located in an immediately adjacent state might pay only $155,129 for the same power requirements—a yearly premium of $3 million compared to the low-cost competitor. Even within a single state (e.g., California), the monthly bill differential ranges from $268,627 to $407,453—an annual penalty of $1.7 million.[47]

- Restructuring would allow the use of financial risk management instruments that would improve market efficiency.

- Restructuring could provide incentives to maximize income and growth potentials for some owners of generation, transmission, and distribution services by offering improved rewards for economic efficiency.

- More competition would promote greater product and service innovation.

- Market forces would replace integrated resource planning, resulting in reduced industry and consumer costs.

2. Disadvantages of Restructuring

Opponents allege that restructuring will produce a number of detrimental effects, including the following:

- In some utilities, restructuring will shift costs to small consumers who cannot effectively contract for alternative sources. Part of this shift will include so-called "stranded investment costs," or, those costs already incurred for power plants that were originally built in part to supply the needs of large electrical users that would be among the first customers to abandon the local utilities. These costs might also be passed along to utility shareholders, even though at the time of the original expenditure such costs had been deemed prudent by the state regulators and thereby recoverable from customers through the electrical rates.

---

[46] Flavin and Lenssen, *Worldwatch Institute Paper 119*, June 1994: p. 50.

[47] Rouse, James B., "Beyond Retail Wheeling: Competitive Sourcing of Retail Electric Power," *The Electricity Journal*, April 1994.

- Restructuring would undermine integrated resource planning and encourage short-range decision making based predominantly on current price rather than future needs and environmental concerns.

- Such a shift in planning decisions could result in delayed development of new power plants or innovative technology. As an example, Flavin and Lenssen note that plans for 1,350 mW of new renewable power projects were put on hold in 1994 after California announced its restructuring plans.[48]

- Restructuring would result in the proliferation of smaller, financially weaker electrical producers, which would threaten the reliability of electric delivery if these companies failed. Such small competitors would become takeover targets, ultimately creating oligopolies such as occurred in the airline industry after deregulation.

3. Additional Issues Raised by Restructuring

Observers note that restructuring has potential impacts in many areas and raises additional issues that would need to be resolved as part of a comprehensive industry restructuring plan. A number of these issues are noted here. Several of the more prominent issues and related questions are outlined in greater detail below.

General Considerations

- Will local utilities be required to maintain reserve capacity to serve customers that buy power from outside sources? If so, how will the local utility be compensated?

- Will local utilities become the suppliers of last resort and be required to accept customers whose outside sources have failed? What, if any, advance notice will the supplier of last resort be entitled to receive?

- What mechanism will be employed to dispatch the electricity over the transmission system? Current options under consideration include bilateral contracts and pooling arrangements. Under the bilateral contract model, customers contract directly with suppliers for physical delivery of electricity into the grid and arrange for its redelivery under transmission rights held by either party. Pooling arrangements feature an independent system operator which operates the transmission system and dispatches all power consumed by the system in hour- or half-hour increments.[49]

---

[48] Flavin and Lenssen, *Worldwatch Institute Paper 119*, p. 54.

[49] Schmidt and Oechsler, *Resource Management International, Inc.*, 1994: pp. 2-16.

- What will be the role and extent of any future regulatory involvement? Effective competition among generators may eliminate the need for price regulation but transmission and distribution, cost allocation within vertically integrated companies, siting and environmental considerations may still require regulatory oversight.[50]

- What will be the role of subsidized, tax-exempt, or government owned utilities? Will they be allowed to compete and, if so, how will competition be structured to ensure that all parties compete on an equal basis?

- If restructuring is instituted, should it be done all at once or phased in? If phased in, over how long a time period?

- What impact will restructuring have on adjacent states, and is it permissible or necessary to require reciprocity with those states?

- Will transmission rates be determined based on original cost, replacement cost, or some other method?

- To what extent, if any, should vertically integrated companies be required , in order to avoid unfair market advantage, to divest themselves of generation, transmission, or distribution assets, or spin them off to affiliates?

Stranded Costs

One of the major issues raised by restructuring is the prospect of stranded costs (variously referred to as "strandable costs", "past costs", "stranded investments", or "uneconomic assets") and how to address the situation if it, in fact, develops. Under the historic regulatory compact, utilities were required to service all customers in their franchise territory. To discharge this obligation, utilities engaged in long-range planning, frequently with a 10- or 20-year time horizon, to ensure that their customers received reliable service. These undertakings resulted in the expenditure of substantial capital outlays for generating capacity as well as transmission and distribution systems. In return, the companies and their shareholders maintain, they were guaranteed full recovery of all prudently incurred costs, plus a specified rate of return that is usually lower than in unregulated industries. Some observers contend however, that utilities were never guaranteed full recovery but only a reasonable opportunity to recover prudent costs.

Additionally, many utilities entered into long-term power contracts pursuant to various regulatory initiatives such as PURPA. In some cases, the price levels in these contracts are, or could turn out to be, above current market prices in a more competitive environment. Some estimates

---

[50] *Roundtable on Competition in the Electric Utility Industry in New Hampshire* Draft Report (July 28, 1995): p. 24.

indicate that more than $8 billion per year is being paid to PURPA suppliers over and above market costs.[51]

If significant portions of a utility's customer base are lost due to restructuring, the utility may be left with excess capacity which was originally developed for the benefit of the departing customers. The burden of paying off the already incurred cost of this capacity could become the responsibility of the remaining "core customers" or the shareholders.

Important issues remain regarding how to identify stranded investment. Additionally, there are diverse opinions regarding how to pay for these costs once they are identified. Some parties have suggested that a monthly service charge in the form of a non-bypassable wires access charge should be imposed on all customers who use transmission lines. Other parties recommend a one-time "exit fee" assessed to departing customers at the time they leave the utility. There is general agreement that utilities should be required to use their best efforts to mitigate stranded investments before they become eligible for reimbursement.[52]

Some proponents of restructuring maintain that the stranded investment issue is overstated. These parties contend that stranded investment will be mitigated by growth and opportunities in other markets. Other proponents, including some low cost utilities, assert that stranded investment is the result of poor management and, therefore, should be absorbed by the utility and not passed on to either departing or core customers. Many proponents note that collecting strandable costs through a recovery charge merely shifts costs from generation to transmission or distribution without reducing overall costs.[53]

Impact on Cost of Capital and Equity Value of Utility Stocks

Because of the perceived guarantees inherent in the traditional regulatory compact, financial markets have historically viewed utilities as relatively low risk operations. Correspondingly, the equity returns on investment have generally reflected this low risk perception by being smaller, while the cost of borrowing for utilities has usually been lower as well. To the extent that a more competitive market increases the risk of investing in utilities, creditors will demand higher returns. This pressure for greater returns could impact the ability of utilities to borrow money.[54] The sensitivity of the financial markets to electrical restructuring can be gauged by their reaction to the so-called *California Blue Book,* a study prepared by the CPUC. Shortly after its release in April 1994, financial service companies began an immediate review of the bond ratings of California utilities, while stock market investors bid down the utilities' share prices.

---

[51] "The Electricity Journal Electricity Daily," *The Electricity Journal*, January 20, 1997.

[52] *Roundtable on Competition in the Electric Utility Industry in New Hampshire* Draft Report, pp. 32-34.

[53] Department of Public Utility Control, State of Connecticut, p. 57.

[54] *Roundtable on Competition in the Electric Utility Industry in New Hampshire* Draft Report, p. 34.

On the national level, between September 1993 and June 1994, the Dow Jones Utilities Index declined 27 percent, representing approximately a $70 billion loss to the book value of U.S. utilities. This decline was attributed to a combination of rising interest rates and concern over the impact of retail wheeling.[55] In October 1995, Moody's Investors Service announced that it would institute a surveillance review of the 47 western public utilities as part of a comprehensive report updating each utility's credit position and credit outlook in light of restructuring. A year later, on October 23, 1996, Standard & Poors downgraded the revenue bonds of six California public power systems, citing in part, "...the challenges they face from increasing competition driven by deregulation...."[56]

Approximately 25,000 Nevada families own stock in the state's two major electric utilities. The average individual shareholder is retired and approximately 62 years of age.[57]

State and Local Tax Implications of Restructuring [58]

Level of Tax Revenue

Electric utilities represent a major source of revenue for federal, state, and local governments. Nationwide during 1994, investor-owned utilities (IOUs) paid more than $13.4 billion dollars in various state and local taxes. Property taxes and gross receipts taxes account for the majority of the IOUs' state and local tax contributions. During the same year, rural electric cooperatives paid over $650 million. For fiscal year 1996, electric utilities in Nevada paid over $51 million in taxes to state and local authorities. Of that amount, more than $28 million came from property taxes. Sales and use taxes produced another $16.6 million of the total.[59] (See accompanying tables, following on pages 21 and 22.)

---

[55] Flavin and Lenssen, *Worldwatch Institute Paper 119*, pp. 51-52.

[56] *Electric Utility Week*, October 28, 1996.

[57] Testimony of Joyce Newman, Executive Director, Utility Shareholders Association of Nevada, Inc., presented to the A.C.R. 49 Subcommittee on November 7, 1995.

[58] The information in this section, except for the Nevada-specific portions, is substantially taken from "Federal, State and Local Implications of Restructuring," published by the National Council on Competition and the Electric Industry as part of its Electric Industry Restructuring Series. The Council is a joint project of the National Conference of State Legislatures (NCSL) and the National Association of Regulatory Utility Commissioners (NARUC).

[59] Nevada's Department of Taxation Data.

NEVADA DEPARTMENT OF TAXATION
REVENUES FROM SELECTED ELECTRIC UTILITY COMPANIES STATEWIDE
FISCAL YEAR 96 AMOUNTS

ELECTRIC COMPANY	REVENUE CATEGORY					
	PROPERTY TAX	SALES & USE TAX	BUSINESS LICENSE TAX	PSC MILL LEVY	FRANCHISE FEE	COMPANY TOTAL
CENTRALLY ASSESSED PUBLIC UTILITY:						
LARGE ELECTRIC UTILITIES						
IDAHO POWER COMPANY	$1,203,980	$0	$200	$5,867	$6,434	$1,216,480
NEVADA POWER COMPANY	14,352,653	4,746,582	176,750	2,589,955	812,894	22,678,834
SIERRA PACIFIC POWER COMPANY	9,799,318	3,640,557	149,482	1,888,166	444,868	15,922,391
SOUTHERN CALIFORNIA EDISON	1,936,201	8,063,981	55,625	N/A	0	10,055,807
RURAL ELECTRIC UTILITIES						
HARNEY ELECTRIC CO-OP, INC.	$80,045	$2,183	$540	N/A	$0	$82,768
MT. WHEELER POWER, INC.	203,710	20,259	0	N/A	0	223,969
PLUMAS-SIERRA RURAL ELECTRIC	2,848	0	0	N/A	0	2,848
RAFT RIVER RURAL ELECTRIC CO-OP	4,774	4,810	0	N/A	0	9,584
SURPRISE VALLEY ELECTRIC CORP.	176	0	0	N/A	0	176
VALLEY ELECTRIC ASSN., INC.	421,920	187,535	0	N/A	0	609,455
WELLS RURAL ELECTRIC COMPANY	236,454	30,286	0	N/A	0	266,740
LOCALLY ASSESSED PUBLIC UTILITY:						
PANACA POWER & LIGHT	$1,297	$0	$119	$1,257	$0	$2,673
TOTAL BY CATEGORY	$28,243,375	$16,696,193	$382,716	$4,485,245	$1,264,196	$51,071,725
PERCENT BY CATEGORY	55.30%	32.69%	0.75%	8.78%	2.48%	100.00%

Source: Nevada Department of Taxation

RATIO OF CENTRALLY ASSESSED ELECTRIC UTILITY PROPERTY TO TOTAL ASSESSED VALUE BY COUNTY

COUNTY	1996-1997 TOTAL PROPERTY	INTERSTATE & INTERCOUNTY	PERCENT OF TOTAL
CARSON CITY	$798,464,872	$11,540,643	1.45%
CHURCHILL	337,141,225	23,437,909	6.95%
CLARK	21,016,468,326	727,466,437	3.46%
DOUGLAS	1,269,793,559	18,440,516	1.45%
ELKO	705,262,008	55,951,887	7.93%
ESMERALDA	43,325,402	10,943,084	25.26%
EUREKA	436,413,947	8,985,746	2.06%
HUMBOLDT	458,690,080	61,628,190	13.44%
LANDER	162,940,181	24,452,014	15.01%
LINCOLN	79,712,208	10,503,788	13.18%
LYON	469,069,183	40,502,566	8.63%
MINERAL	153,071,626	17,377,693	11.35%
NYE	539,570,218	35,503,965	6.58%
PERSHING	126,151,831	23,238,577	18.42%
STOREY	104,931,344	73,443,461	69.99%
WASHOE	6,480,904,309	93,217,667	1.44%
WHITE PINE	207,639,778	10,370,435	4.99%
TOTAL	$33,389,550,097	$1,247,004,578	3.73%

NOTE: Includes all Nevada electric utilities as published in Nevada Tax Commission Bulletins 176 and 176a. Total statewide property is shown as published by the local government finance section without projected net proceeds of minerals assessments included.

Source: Nevada Department of Taxation

Traditional rate-of-return regulation provided reasonably stable cost recovery and return on investment while allowing governments to use utilities to collect taxes. Regulation tended to be applied fairly consistently over the years, resulting in relatively stable revenue streams. Competition and new regulatory approaches may preclude the simple pass-through of utility taxes to ratepayers. Consequently, competitive changes will require legislatures to evaluate tax structures. At the state and local levels, several issues present themselves:

- Competition resulting in lower electricity prices, a shift in market share from more to less heavily taxed providers and declining values of property owned by utilities may cause revenues to decline.

- To the extent providers are taxed differently under existing tax law, these differentials will have a different economic impact in a more competitive environment since, instead of passing these costs through to captive ratepayers, providers will be increasingly forced to bear them or suffer loss of market share.[60]

Franchise Fees, Property, Sales, and Use Taxes

To the degree that retail competition produces lower electric prices, taxes that are computed as a percentage of price, such as sales and use taxes, franchise fees, and regulatory assessments, would decline. The value of certain kinds of utility property, such as uneconomic generating plants, may fall as a result of competition, leading in turn to decreased property tax revenues. In the extreme case, generating plants that can no longer compete economically may simply be retired, causing an even greater impact on property tax collection.

States such as Nevada that base property tax assessments on book value rather than market value may also experience lower tax intake. This outcome can occur if utilities separate their generation, transmission and distribution functions through divestiture, sales and exchanges of property, or spin-offs to shareholders that result in new, lower book valuations for the affected property. Additionally, utilities may seek and be granted accelerated depreciation to help them prepare for competition and avoid stranded costs. Such accelerated depreciation results in lower book values for property tax purposes.

At the same time, such adverse revenue impacts may be offset in whole or in part by improved economic growth and increased consumption of electricity resulting from lower prices. However, revenue gains from increased growth would probably take several years to be recognized, and there could be shortfalls in the interim.

New utility corporate structures evolving as a response to retail competition may produce another potential impact on Nevada tax revenues. Under *Nevada Revised Statutes* (NRS) 361.320 ("Determination and allocation of valuation for property of interstate or intercounty nature . . ."), Nevada uses the "unitary concept" of valuation. This methodology requires the valuation of an electric utility company in total with an allocation of the portion of the valuation that properly belongs to Nevada. If a vertically integrated utility with a generating plant in an adjoining state reorganizes its corporate structure through divestiture of generation assets, this plant will no longer be included in the valuation of the utility, thereby reducing Nevada tax revenues. Similarly, if the utility owns an in-state generation facility that it transfers to a new entity, the entire property tax revenue from the generation plant may now accrue to the county where the

---

[60] A 1996 study commissioned by the Ohio School Board Association indicated that, if the personal property tax rate charged IOUs was equalized to the rate assessed for non-utility property, the Ohio school system would lose $257 million a year in revenue. "Electric Utility Deregulation and Its Potential Impact on Ohio School Districts with Electric Generating Plants," Levin and Driscoll, August 9, 1996.

plant is located and not be included in the centrally assessed valuation that is currently spread over all counties.[61]

Nationally, several approaches have been suggested to address these issues. Some commentators have recommended simply accepting the revenue decrease on the grounds that lower taxes on electricity are desirable. Other observers have suggested that, if restructuring proceeds gradually, revenue loss may be treated in the ordinary budget process in the same manner as reductions from changing economic conditions. Still other analysts have recommended that tax reform neither raise nor lower electric revenues.

Those who support increased taxes on the electricity sector to compensate for any revenue loss due to competitive markets have advanced a number of proposals. One such option is to impose a broad-based tax on energy consumption structured as a fixed amount per British thermal unit (Btu). Such a tax would be levied on all forms of energy, including motor fuels, heating oil, natural gas, and renewables; i.e., geothermal, solar, and wind. Proponents of such an approach indicate it would create fewer distortions among competing energy sources and that the rate could be relatively low because of the broad tax base. Opponents argue that motor fuels are already heavily taxed, homeowners might react adversely to increased taxes on heating oil and natural gas, and business competitiveness could be impaired by higher taxes on business energy use.

Another suggestion is to enact an equal tax on all electricity consumption occurring in the taxing state. Such a tax could be a percentage of the selling price of the electricity or a fixed amount per kilowatt-hour. Compared to a Btu tax, an electric consumption levy discourages use of electricity in favor of other untaxed energy sources. Such an approach, however, would not provide a tax incentive for purchasing electricity from one provider as opposed to another since it would apply equally to each consumer as long as it included customers of municipal utilities and cooperatives, who are sometimes exempt from certain taxes under current laws.

Mergers

Some electric industry analysts predict that introduction of a more competitive environment will result in mergers producing large multi-regional and even international power companies. Proponents of restructuring believe such a development would be positive, creating stronger, more efficient, more innovative companies that can provide better service to customers. Other observers have expressed concern that mergers will result in oligopolies that will reduce competition and produce entities that are too large to be effectively overseen.[62] The accompanying table illustrates

---

[61] Testimony of Michael Pitlock, Director, Nevada's Department of Taxation, before the A.C.R. 49 Subcommittee, January 17, 1996.

[62] In December 1996, FERC updated its 30-year old merger policy to address the evolving industry. *Power Markets Week*, December 23, 1996.

some of the recent industry mergers, including agreements with utilities located in the United Kingdom and Asia.[63]

Companies Involved	Merger Announced	Value of Merger
Northern States Power/Wisconsin Energy	May 1995	
Union Electric/Cipsco	July 1995	$1.2 Billion*
Public Service of Colorado/Southwestern Public Service	August 1995	
Baltimore Gas and Electric/Potomac Electric Power Co.	September 1995	
Puget Sound Power and Light/Washington Energy	October 1995	
WPL Holdings/IES Industries/Interstate Power	November 1995	
Texas Utilities/Enserch	April 1996	$1.7 Billion*
ENRON/Portland General	July 1996	$2.1 Billion
Houston Industries, Inc./NorAm Energy	August 1996	$3.8 Billion
Atlantic Energy, Inc./Delmarva Power & Light	August 1996	$2.2 Billion
Ohio Edison/Centerior Energy	September 1996	$1.6 Billion
Boston Edison/C-TEC	September 1996	$300 Million
Enova/Pacific Enterprises	October 1996	
CalEnergy/Northern Electric (United Kingdom)	October 1996	$1.2 Billion
Southern Company/Consolidated Electric Power Asia	October 1996	$2.7 Billion
Dominion/East Midlands (United Kingdom)	November 1996	$2.2 Billion
TECO/Lykes Energy	November 1996	$300 Million*
Duke Power/Pan Energy	November 1996	$7.7 Billion
Entergy/London Electricity (United Kingdom)	November 1996	$2 Billion
Brooklyn Union Gas/Long Island Lighting	December 1996	$4 Billion

For sources see Appendix B

* Financial Data Provided by Companies

[63] Many of these mergers are awaiting regulatory approval.

One development that may signal a trend in the industry is the combination of natural gas companies with electric utilities,[64] a phenomenon known as "convergence" mergers. Recent examples of such mergers are Atlantic Energy Inc./Delmarva Power and Light Company, ENRON/Portland General, Houston Industries Inc./NorAm Energy, and Brooklyn Union Gas/Long Island Lighting. NorAm Energy is the nations's third largest natural gas distributor.[65] The Boston Edison/C-TEC agreement represents another transaction that analysts believe may be a prototype of future market consolidations. The new venture will combine local and long distance telephone service, cable television, Internet access and electric power. Utilities are perceived to have advantages in data transmission due to their extensive rights of way and transmission systems.[66] Another trend that appears to be developing is the acquisition of foreign electric utilities by American companies. Five of the 12 British regional electric companies privatised in 1990 have been acquired by U.S. utilities.[67]

Technical Considerations

Wheeling electric energy presents some significant technical issues. Unlike natural gas or oil, electricity cannot be stored on a large scale basis. A certain amount of dependable reserve capacity must be available at all times to handle unanticipated demands or interruptions.

Transmission and distribution networks are constructed of various electrical components such as capacitors, circuit breakers, transformers, and transmission lines. Each of these units is designed to function within a given range of operating conditions. Power loads that exceed the system's capacity could necessitate costly additions. Furthermore, because the electric grid is composed of numerous interconnected systems, a problem at any one point may disrupt service to an entire region.

The actual flow of electric current over transmission wires is not direct from one point to another. Electric current moves in accordance with Kirkoff's law and follows the path of least resistance. Any given amount of power may actually flow over several different parallel lines simultaneously. This results in so-called "loop flows." These flows may affect third parties who are quite distant from the intended power flow. Each transmission line has a maximum thermal capacity that limits the amount of current that it can carry. Because of Kirkoff's law, a limitation on one line affects every other line on the system. Potential thus exists for network congestion that can interfere with transmissions. If a line's maximum carrying capacity is exceeded, the line may be damaged.

---

[64] "Utilities plan big mergers," Cable News Network, Inc., August 12, 1996.

[65] Ibid.

[66] "Boston Ed in $300M deal," Cable News Network, Inc., September 30, 1996.

[67] "U.S. success would further shrink UK power sector," Reuters Limited, December 20, 1996.

Any time power is transmitted over lines, a certain amount is lost in the form of heat. Such line loss is directly proportional to the mathematical square of the current. Therefore, if the current doubles, the line loss quadruples. Furthermore, line loss is also directly proportional to the transmission distance; the greater the distance, the greater the line loss. Wheeling transactions have the potential to increase line losses significantly.[68] The electrical industry has been pursuing several approaches to increasing the load carrying capacity and efficiency of transmission lines. These approaches include raising the voltage on existing lower voltage lines, converting from alternating current (AC) to direct current (DC), and developing improved capacitor banks and controls.[69]

Wheeling also requires installation of meters to track customers' loads. Since the actual amount of power supplied to the system at any given point in time is dependent on load requirements at that particular instant, transmissions must be carefully and accurately monitored. The most efficient method utilizes meters at the purchaser's delivery points. These meters total the amount of power delivered and telemeter that information to the dispatching utility so that the seller is constantly aware of the user's requirements. Such a system requires a complex network of meters and telemetering equipment.[70]

IV. CURRENT RESTRUCTURING EFFORTS AT THE STATE LEVEL

A. Overview

By the end of 1996, at least 13 states had initiated legislative studies of restructuring (Arizona, Connecticut, Illinois, Kansas, Maine, Massachusetts, Nebraska, Nevada, New Hampshire, New Mexico, Oklahoma, Texas, and Utah) and nearly 40 states have legislative and/or regulatory activities underway.

Michigan is moving forward with a five-year pilot project that allows for limited retail wheeling involving two utilities and their larger industrial customers, although legal challenges have been filed. Additionally, New Hampshire passed legislation in June 1995, authorizing a pilot program,[71] which began in May 1996. New York initiated a limited pilot program in June 1996.

---

[68] *The National Regulatory Research Institute*, pp. 57-62.

[69] Ibid, pp. 65-66.

[70] Ibid, p. 63.

[71] *LEAP Letter*, Legislative Energy Advisory Program Quarterly Legislative Newsletter, Summer 1995.

In a number of states, the regulatory agency has adopted rules for implementing restructuring.[72]

- The Arizona Corporation Commission adopted rules for restructuring on December 23, 1996. The commission's plan provides for phased-in retail competition beginning not later than January 1, 1999, with all generation to be available by January 1, 2003.

- On December 30, 1996, the Massachusetts Department of Public Utilities released a 400-page rule calling for retail competition beginning January 1, 1998.

- On December 31, 1996, the Vermont Public Service Board and the Maine Public utilities Commission both issued plans for restructuring. Full retail competition is set to begin in Vermont by the end of 1998, while it will start in Maine by the year 2000.

- The New Jersey Board of Public utilities issued its order on January 16, 1997. The proposal calls for retail competition to begin in October 1998, and be available to all customer by April 2001.

New Hampshire adopted legislation in May 1996 requiring all electric utilities to submit restructuring plans to the Public Utilities Commission. The commission, in turn, must require implementation of retail choice no later than January 1, 1998. In August 1996, Rhode Island enacted a restructuring law establishing retail access for all customers. Direct access begins in January 1997 for loads exceeding 1.5 mW and phases in for other users thereafter. On August 31, 1996, California passed a major restructuring bill calling for customer choice no later than January 1, 1998, creating an independent system operator (ISO), a Power Exchange, and funding stranded cost recovery through bonds. On December 3, 1996, Pennsylvania became the most recent jurisdiction to legislate retail competition by phasing in customer choice over a three-year period beginning in 1999. Bills to authorize retail competition are presently pending in several states.

B. Restructuring in California

According to Flavin and Lenssen[73], California added impetus to the restructuring discussion early in 1994 when the CPUC proposed major restructuring of the state's utility regulatory system in its "Blue Book" proposal.

A February 16, 1995, PSCN report states that California has some of the highest electrical rates in the country. This is attributed to the fact that the CPUC dictated the mix of utility supply sources, including DSM and renewables, for nearly ten years. Local utilities were required to purchase the output of QFs. As a result, electrical rates rose so high that some businesses left the state and others opted not to locate there.

---

[72] Some of these proposals will require legislative approval.

[73] Flavin and Lenssen, p. 50.

In response, the CPUC announced its Blue Book initiative on April 20, 1994. This was a proposal to radically restructure the state's regulatory system. Among the significant recommendations was a proposal to authorize retail wheeling to large industrial customers commencing in 1996, followed by extension to all consumers in the year 2002.

California's action was particularly significant since it has been the pacesetter for national utility reform for more than two decades. As the CPUC process evolved, the commission proposed to institute a so-called "poolco" approach. The poolco arrangement would involve establishment of an independent system operator (ISO) subject to FERC jurisdiction that would have two primary characteristics. First, all transmission operations would be under the control of the poolco, although the transmission assets themselves would remain the property of the current owners, most of whom are utilities. Second, electric power would be sold through an auction process that would allow only the most efficient producer to actually sell power on an hour-by-hour basis.

On September 10, 1995, Southern California Edison and three consumer groups filed a Memorandum of Understanding (MOU) with the CPUC, proposing an alternative to the poolco model. The MOU proposed a voluntary, statewide power exchange with direct access for retail customers and power suppliers, coordinated by an ISO. The proposal also included the establishment of a power exchange by 1998, which would manage a spot market auction, augmented by a bilateral contracts market.

On December 20, 1995, the CPUC released its draft decision, adopting the concept of an ISO and a voluntary wholesale power pool called the Power Exchange. Both of these entities would be subject to FERC approval and were targeted for implementation no later that January 1, 1998. All customers were scheduled to have direct access no later than 2003. In addition, the order provided for a Competition Transition Charge (CTC), which would be used to cover the costs of stranded investments with recovery scheduled for completion by 2005. The decision was adopted on a 3-to-2 vote January 10, 1996. Thereafter, on March 13, 1996, the CPUC issued a "Roadmap" outlining plans for implementing its order. Some aspects of the CPUC plan were superceded by the enactment of Assembly Bill 1890, which is summarized below.

In a related matter, on April 10, 1996, the CPUC voted 3-to-2 to impose an interim CTC in response to an arrangement wherein power marketer Destec and the Modesto Irrigation District planned to immediately begin wheeling power to an industrial plant in Pittsburgh, California. The plant is located within the franchise territory of Pacific Gas and Electric, an investor owned utility.

On August 31, 1996, the California legislature enacted Assembly Bill 1890. This measure fundamentally restructures California's utility industry and key provisions:

- Provide for customer choice commencing no later than January 1, 1998. The CPUC will establish a phase-in schedule that is equitable for all customer classes and which must be completed for all customers by January 1, 2002.

- Mandate an immediate rate reduction of not less than 10 percent for residential and small commercial customers. Additional rate savings for these customer classes are expected to be no less than 20 percent by April 1, 2002.

- Establish a limited transition period ending December 31, 2001, during which stranded investment recovery will be achieved using a nonbypassable CTC levied on all consumers in proportion to the amount of electric power they use. Up to $10 billion in rate reduction bonds will be issued in order to spread collection of a portion of the CTC over 10 years.

- Require the erection of a "firewall" to shield residential and small commercial customers from paying for any CTC exemptions granted to industrial users for economic development or retention purposes.

- Create an ISO and a Power Exchange subject to the jurisdiction of a five-member oversight board appointed by the Governor and the Legislature. Publicly owned utilities and IOUs are required to give control of their transmissions facilities to the ISO.

- Require ratepayers to continue funding energy conservation and low-income assistance programs through 2001. Assistance programs must be funded at levels not less than those authorized for 1996. Funding for energy efficiency and conservation must equal at least $228 million per year through 2001; during the same period, $62.5 million must be provided for research, development, and demonstration projects to advance science or technology that would not otherwise be adequately provided for in a competitive market. In this time period, $540 million is provided for renewable resource technologies.

- Require all electric aggregators, marketers, and sellers to register with the CPUC and provide consumers with adequate and reliable information regarding supplier options. Contract recision provisions and "anti-slamming" or "grid-napping" protections are also included in the bill.

The ISO has received preliminary approval from FERC. However, portions of the law relating to the Oversight Board have been deemed by FERC to conflict with that agency's authority.

Despite California's acknowledged leadership role in the energy arena, representatives from some other states point out that California's situation is unique in many respects and its solutions may not be applicable in other jurisdictions.[74] As previously noted, the state's electric rates are among the highest in the nation. According to CPUC Commissioner, and now CPUC President, P. Gregory Conlon, these rates are primarily due to state-mandated environmental initiatives and nuclear plant write-downs. Each California citizen pays approximately 25 cents per day for

---

[74] ."Status of Electric Utility Regulation in Oregon." Address by Roger Hamilton, Oregon Public Utility Commissioner, at the Western Electric Power Market Conference in San Francisco, California, October 17, 1995.

environmental programs, amounting to about $3 billion annually.[75] Some officials in surrounding states are concerned that a more competitive retail electricity market in the western region may result in lower rates for California at the expense of higher prices in adjoining states.

C. Restructuring In Nevada

Noteworthy events in Nevada relating to restructuring the electric industry include:

- The 1983 Legislature enacted the Utility Resource Planning Act (NRS 704.741 to 704.751) to assure that Nevada utilities managed resource additions in an orderly and prudent fashion.

- During the 1993 Session, Nevada enacted Senate Bill 231, now NRS 704.223, the so-called "North Star" bill. This measure was designed to encourage the construction of a steel mill in the state by the North Star Company. The statute authorizes a business with a new industrial load, if certified by the Commission on Economic Development, to enter into retail wheeling transactions under the auspices of the PSCN.

- On July 1, 1994, the PSCN opened a docket on regional and federal electric generation and transmission issues to solicit industry and public input regarding the commission's formulation of positions on regional and national electric utility issues. Hearings were held on August 18 and October 28, 1994. On December 5, 1994, the commission announced the opening of a docket specifically devoted to retail wheeling and a workshop was held on February 23, 1995.

- On June 30, 1995, the United States Department of Energy (DOE) released a request for proposals to supply power to the Nevada Test Site, which is presently served by Nevada Power Company. No decision has been made by DOE and it appears the agency will not go forward with the process at this point.

- On July 2, 1995, the Nevada Legislature passed Assembly Concurrent Resolution No. 49 creating the Legislative Commission's Subcommittee to Study Competition in the Generation, Sale, and Transmission of Electric Energy. Between November 7, 1995, and January 29, 1997, the subcommittee held 11 meetings to solicit input on restructuring Nevada's electric utility industry. At its final meeting in January 1997, the subcommittee recommended that further study be conducted on the issue, in accordance with a set of 10 General Principles adopted by the subcommittee. (See Appendix C for the subcommittee's bill draft request.)

- On July 20, 1995, the PSCN denied Nevada Power Company's petition for a special rate agreement with Mirage Resorts. Nevada Power had sought approval of a scaled rate

---

[75] Address by P. Gregory Conlon, CPUC Commissioner, at the Western Electric Power Market Conference in San Francisco, California, October 17, 1995.

reduction for the Mirage in order to encourage the company to forego potential plans to build its own generation unit.

- In August 1995, the Colorado River Commission (CRC) considered a request from the Southern Nevada Water Authority (SNWA) to build and operate transmission and distribution facilities to serve SNWA's water treatment and transmission plant, as well as supply electricity for the plant. Such an arrangement would bypass Nevada Power Company, SNWA's incumbent power provider. The PSCN raised the issue of the appropriateness of proceeding with retail wheeling in this manner at this time. In conjunction with these discussions, the Office of the Attorney General rendered an opinion on August 15, 1995, concluding that the construction of the proposed facility for SNWA and the subsequent provision of power to it by the CRC was not subject to regulation by the PSCN. On October 5, 1995, the CRC voted to submit a proposal to SNWA.

- In August also, Citizen Alert in conjunction with the Land and Water Fund of the Rockies released a concept paper outlining a plan to disaggregate Nevada Power Company into two new entities. One of the new operations would be a member-owned, nonprofit distribution cooperative and the other would be a competitive, for-profit generation company. Nevada Power shareholders would receive compensation for the sale of their ownership interest in the utility's transmission and distribution assets, which would be transferred to the cooperative. According to proponents, since cooperatives pay no federal income taxes on electric operations and can obtain less expensive financing issued by organizations, such as the Cooperative Financing Corporation, substantial savings can be realized. These savings are estimated to be in excess of $70 million annually or $800 million in present value benefits over a 20-year horizon. Supporters maintain that the proposal would address issues currently facing Nevada Power in southern Nevada due to the rapid growth of its service territory. Advocates of the plan say it will provide immediate rate reductions as well as foster end-use efficiency improvements and energy service options.

- On October 6, 1995, the PSCN approved the merger of Sierra Pacific Power Company and Washington Water Power Company (WWP), a transaction designed to enhance the competitive capacity of the two utilities as the industry moves toward restructuring. On June 28, 1996, while the arrangement was pending approval by FERC, WWP exercised an option to withdraw from the planned merger, citing "dramatic changes in the utility industry" and declining merger benefits.

- On June 13, 1996, the PSCN voted 4-to-1 to adopt an extensive report that marked the culmination of a three week docket on restructuring. The report concluded that competition could be implemented in a manner that benefits Nevada and called for flexibility in both statutory and regulatory schemes. The PSCN identified the guiding principle for successful restructuring as "assign[ing] to the market those activities which the market can manage best; and assign to regulation those activities which markets cannot manage well." The PSCN is continuing its study of restructuring.

- On February 6, 1997, the PSCN voted 4-to-1 to seek introduction of a comprehensive bill draft designed to allow retail competition.

V. ALTERNATIVE PROPOSALS

A. Performance-Based Rates

Some parties, recognizing that traditional cost-of-service regulation does not provide incentives for utilities to operate efficiently but concerned about the potential impact of full retail competition, have proposed performance-based rates as an alternative. Under one such approach known as price-cap regulation, prices are established for several years into the future. A utility is allowed to retain the revenue from efficient operation that brings its cost of service below the price-cap. Conversely, the utility must absorb any loss caused by inefficient operation that causes the cost of service to exceed the price-cap. Resources are acquired through an auction mechanism. The ceiling price is set based on the results of the most recent auction, plus inflation, minus a productivity factor. Since rates are only modified as a result of exogenous factors under a price-cap methodology, the utility has increased incentives to minimize costs and operate more efficiently. This link between earnings and performance offers the utility management a stronger incentive to control operating costs than does the traditional cost-of-service regulation.[76]

Another performance-based approach is capped revenue per customer. A utility is allowed to collect a fixed amount of revenue per customer, depending upon the customer's size and usage. To the extent the utility provides service below that cost, the utility and its shareholders recognize a profit; if cost of service exceeds the allowable cost per customer, the company absorbs the loss. While this type of regulation creates incentives for increased efficiency, determining the correct capped revenue per customer may be difficult.[77]

Many proponents of a more competitive electrical industry maintain that performance-based rates will not adequately address the concerns that have led to consideration of restructuring.

B. Municipalization

Municipalization is another potential alternative to retail wheeling advocated by some parties. Under EPAct, entities such as municipalities and political subdivisions (e.g., schools and hospitals, as well as industrial parks and trade associations) may be able to qualify as an "electric utility" under certain specific conditions. Once established as an electric utility, such an entity is entitled to a wheeling order from FERC. It may be possible to achieve utility status without actually having to acquire a complete transmission and distribution system through condemnation

---

[76] "California's Electric Services Industry: Perspectives on the Past, Strategies for the Future," California Public Utilities Commission (February 1993): pp. 172-179.

[77] Department of Public Utility, State of Connecticut, p. 60.

proceedings or construction of new facilities, both of which can be expensive.[78] However, some of these efforts may be viewed as "sham transactions" and could involve litigation. On July 31, 1996, FERC rejected a so-called "muni-lite" plan by the city of Palm Springs, California, calling the proposal an "obvious subterfuge." The plan involved installation of duplicate meters and wheeling cheaper power obtained from a third party over the existing IOU's distribution system. However, in a companion case, FERC approved the City of Cleveland's plan to wheel power over its own 138-kV line to a medical facility despite the objections of the incumbent IOU.[79]

VI. ELECTRIC ENERGY USE IN NEVADA[80]

Nevada residential, commercial, and industrial consumers used 17.9 million megawatt hours (mWh) of electricity in 1995, the most recent year for which data is available. The state is served by two IOUs and a network of rural electric cooperatives and power districts. (See following tables, pages 35 through 43, reproduced here with permission from "Energy for Nevada, Report to the Legislature on the Status of Energy in Nevada for the Year 1996," Nevada State Energy Office; and see also a chart provided by Sierra Pacific Power Company for the Western Region, titled "1996 Utility Electric Prices," reflecting rates for industrial, commercial, and residential electric services.)

Sierra Pacific Power Company (SPPCo) serves approximately 228,000 in-state electric customers in a 48,200-square-mile service territory in northern Nevada. Annual electric sales are about 7.2 million mWh, worth $491 million. Peak electric load has increased an average of 4.7 percent annually for the past five years. The company's record peak demand for a single day occurred on January 13, 1997, when 1,226 mW were delivered. The company generates 55 percent of its power and purchases the remaining 45 percent. Of the electricity SPPCo produces itself, 30 percent comes from gas/oil plants and 24 percent from coal. Hydro generation represents one percent. Ten percent of the power comes from geothermal purchases. Total company revenues for 1995 were $597,784,000 and total assets stood at $1,729,818,000.[81]

In 1996, SPPCo signed an exclusive five-year contract with its largest electric customer. The contract can be extended for up to 20 years. The company signed similar long-term contracts during the year with other large customers as well.

---

[78] "Municipalizing to Access the Competitive Power Markets," by John P. Williams, Esq. Paper delivered at the Western Electric Power Market Conference in San Francisco, California, October 17, 1995.

[79] *Power Markets Week*, August 5, 1996.

[80] Unless otherwise indicated, the information in this section is derived from "Energy For Nevada: Report to the Legislature on the Status of Energy in Nevada for the Year 1996," prepared by the Nevada State Energy Office.

[81] Data supplied by Sierra Pacific Power Company.

UTILITY SALES OF ELECTRICAL ENERGY IN NEVADA BY CLASSIFICATION 1973 THROUGH 1995

(In Megawatt Hours)

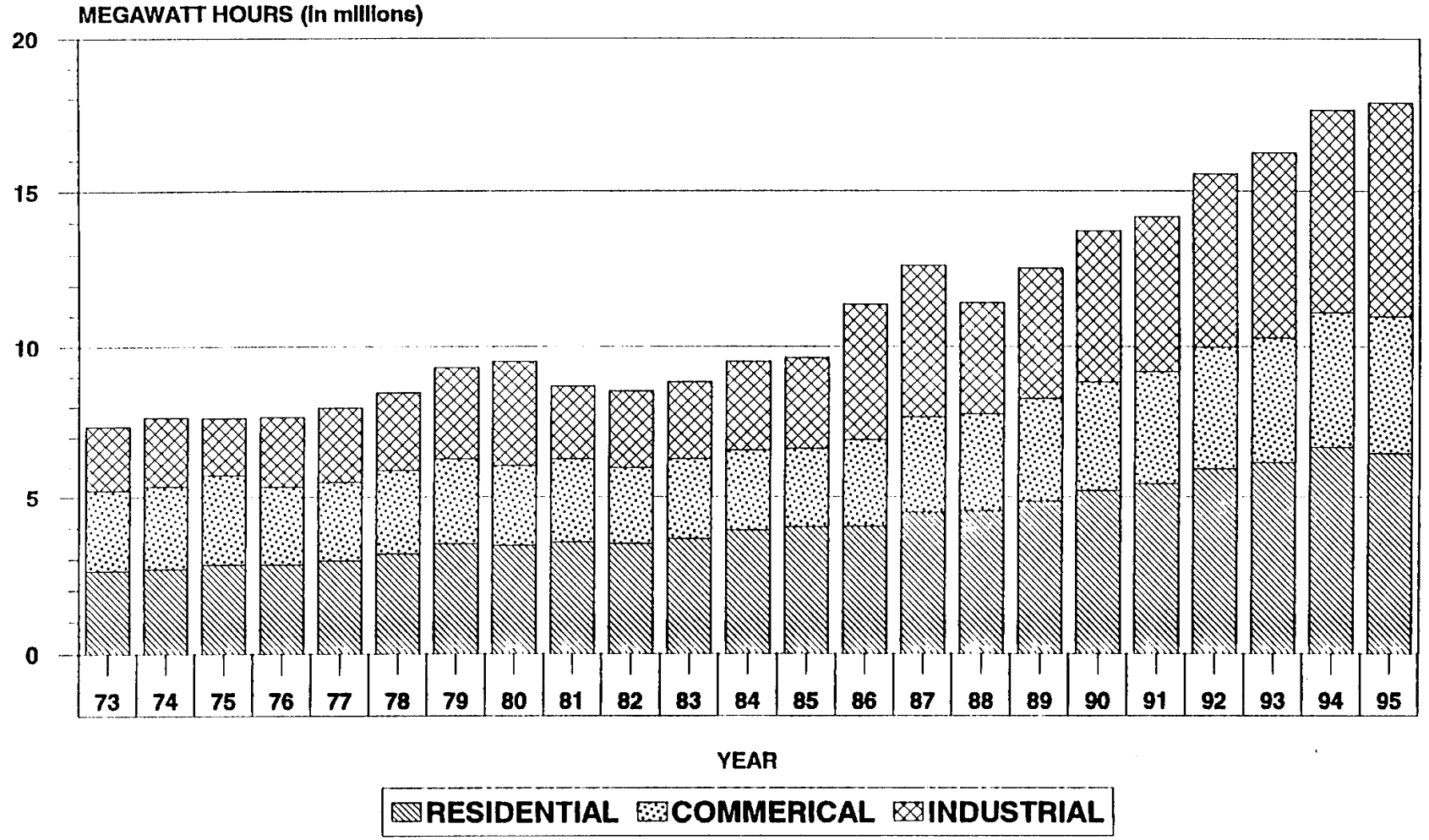
Year	Residential	Percent Change	Commercial	Percent Change	Industrial	Percent Change	Total
1974	2,677,422		2,683,422		2,283,932		7,644,776
1975	2,831,258	5.75	2,896,452	7.94	1,899,721	-16.82	7,627,431
1976	2,823,722	-0.27	2,520,805	-12.97	2,321,950	22.23	7,666,477
1977	2,953,578	4.60	2,545,676	0.99	2,465,542	6.18	7,964,796
1978	3,153,839	6.78	2,748,630	7.97	2,560,482	3.85	8,462,951
1979	3,487,733	10.59	2,805,362	2.06	3,011,889	17.63	9,304,984
1980	3,436,503	-1.47	2,625,077	-6.43	3,443,637	14.33	9,505,217
1981	3,538,504	2.97	2,749,482	4.74	2,401,511	-30.26	8,689,497
1982	3,478,841	-1.69	2,513,427	-8.59	2,522,523	5.04	8,514,791
1983	3,652,658	5.00	2,630,552	4.66	2,547,134	0.98	8,830,344
1984	3,913,785	7.15	2,662,368	1.21	2,927,955	14.95	9,504,108
1985	4,023,408	2.80	2,605,281	-2.14	2,994,169	2.26	9,622,858
1986	4,044,700	0.53	2,872,456	10.26	4,471,603	49.34	11,388,759
1987	4,479,212	10.74	3,189,319	11.03	4,978,656	11.34	12,647,187
1988	4,538,943	1.33	3,234,261	1.41	3,657,235	-26.54	11,430,439
1989	4,859,424	7.06	3,409,923	5.43	4,286,067	17.19	12,555,414
1990	5,218,053	7.38	3,614,120	5.99	4,907,917	14.51	13,740,090
1991	5,441,528	4.28	3,723,721	3.03	5,024,161	2.37	14,189,410
1992	5,944,298	9.24	4,041,396	8.53	5,576,650	11.00	15,562,344
1993	6,159,535	3.62	4,131,535	2.23	5,944,596	6.60	16,235,666
1994	6,685,768	8.54	4,434,033	7.32	6,471,539	8.86	17,591,340
1995	6,474,038	-3.17	4,505,188	1.60	6,874,847	6.23	17,854,073

SOURCE: 1973 - 1985 - Public Service Commission of Nevada.

1986 - 1994 - Sierra Pacific Power Company and Nevada Power Company filings of FERC Form No. 1: Annual Report of Major Electric Utilities

1995 - Nevada Power Company, personal contact; Sierra Pacific Power Company, 10 Year Statistical Report, 1986-1995

MAJOR UTILITY SALES OF ELECTRICITY
IN NEVADA BY CLASSIFICATION
1973 THROUGH 1995



AVERAGE RESIDENTIAL CUSTOMER ELECTRICITY USE AND COST 1973 THROUGH 1995

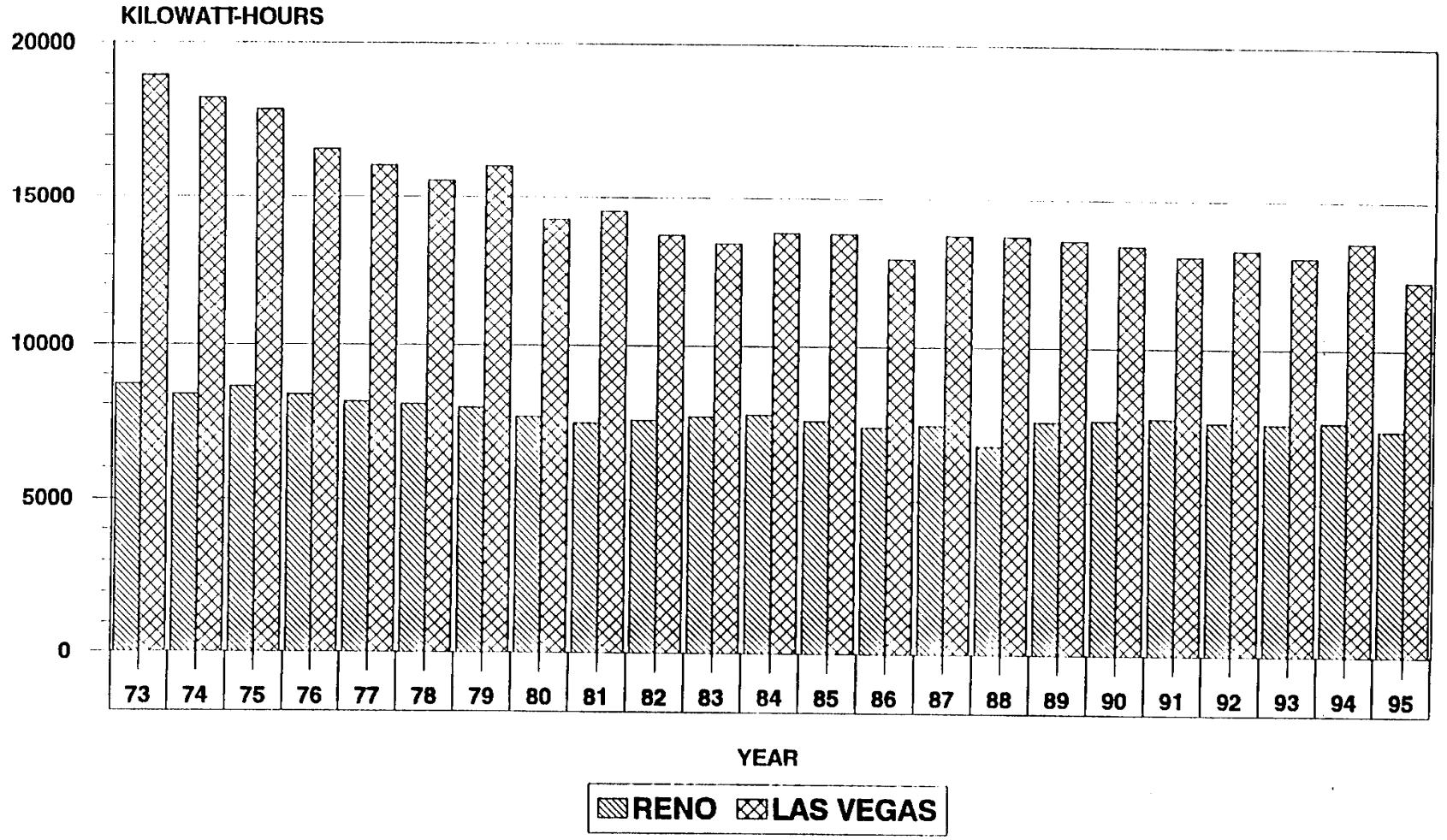
	NEVADA POWER COMPANY			SIERRA PACIFIC POWER COMPANY		
Year	Annual Use In kWh	Cost Per kWh	Annual Bill	Annual Use In kWh	Cost Per kWh	Annual Bill
1973	18,962	.0126	238.92	8,681	.0243	210.95
1974	18,232	.0164	299.00	8,345	.0282	235.33
1975	17,843	.0197	351.51	8,591	.0349	299.83
1976	16,565	.0238	394.25	8,330	.0411	342.36
1977	16,049	.0282	452.58	8,101	.0488	395.33
1978	15,557	.0296	460.49	8,031	.0480	385.49
1979	16,033	.0317	508.25	7,908	.0499	394.61
1980	14,246	.0411	585.51	7,616	.0652	496.56
1981	14,527	.0408	592.70	7,426	.0719	533.93
1982	13,720	.0489	670.91	7,513	.0769	577.75
1983	13,445	.0527	708.55	7,646	.0827	632.32
1984	13,812	.0526	726.51	7,711	.0839	646.95
1985	13,805	.0567	782.74	7,520	.0880	661.76
1986	12,953	.0591	765.52	7,330	.0886	649.44
1987	13,768	.0509	700.79	7,400	.0817	604.58
1988	13,740	.0540	741.96	7,578	.0840	636.55
1989	13,619	.0490	667.33	7,540	.0840	633.36
1990	13,456	.0495	666.07	7,589	.0814	617.74
1991	13,107	.0527	690.74	7,663	.0795	609.21
1992	13,316	.0561	747.03	7,545	.0826	623.22
1993	13,085	.0594	777.25	7,517	.0855	642.87
1994	13,595	.0665	904.07	7,563	.0925	699.71
1995	12,307	.0668	822.11	7,310	.0909	664.79

SOURCE: 1973 - 1983 - U. S. Department of Energy, Statistics of Privately Owned Electric Utilities, and Information supplied by Nevada Power and Sierra Pacific Power Companies.

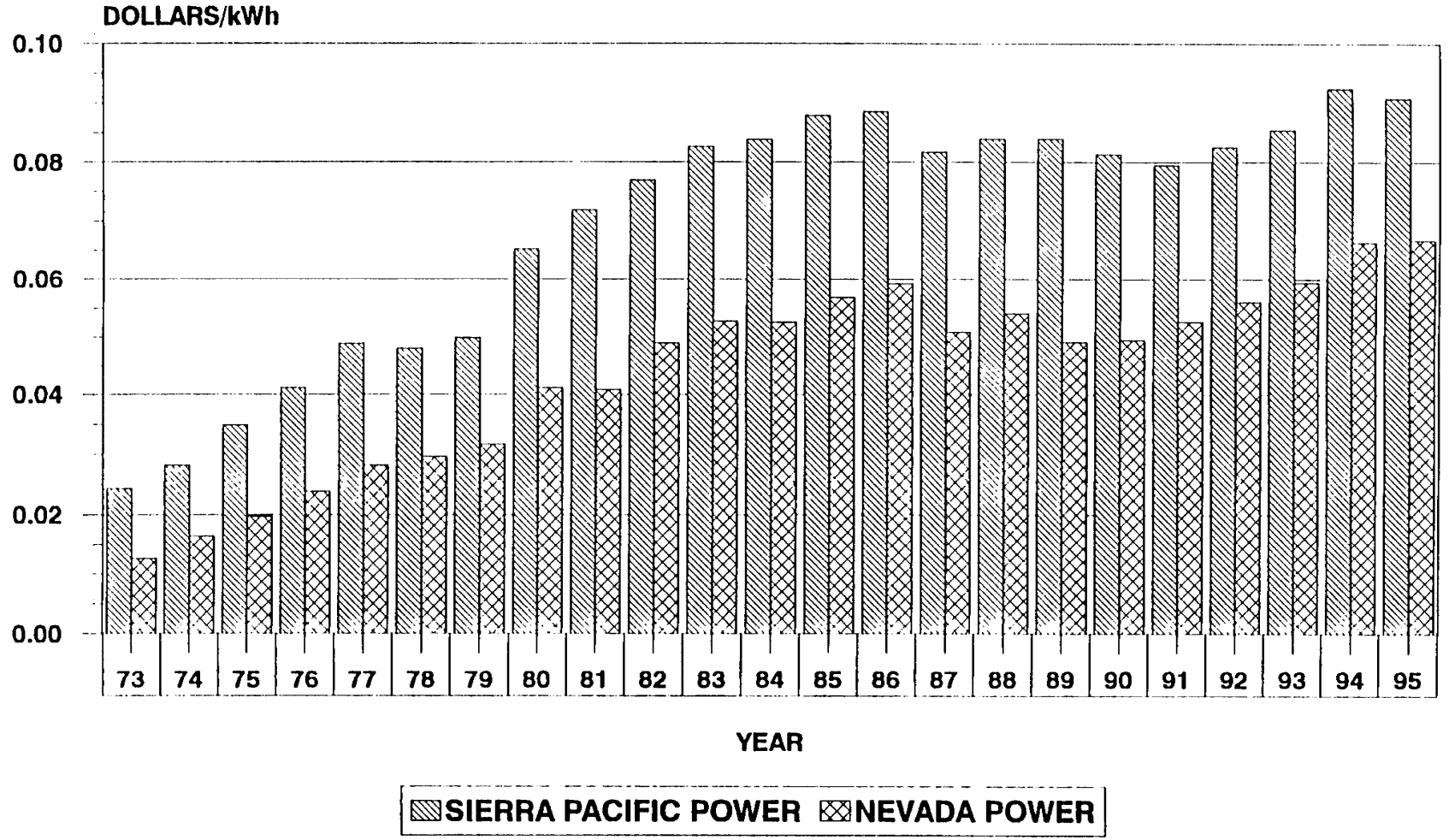
1984 - 1985 - U. S. Department of Energy, Financial Statistics of Selected Electric Utilities, and Information supplied by Nevada Power and Sierra Pacific Power Companies.

1986 - 1995 - Sierra Pacific Power and Nevada Power Company filings of FERC Form No. 1: Annual Report of Major Electric Utilities, Licensees and Others.

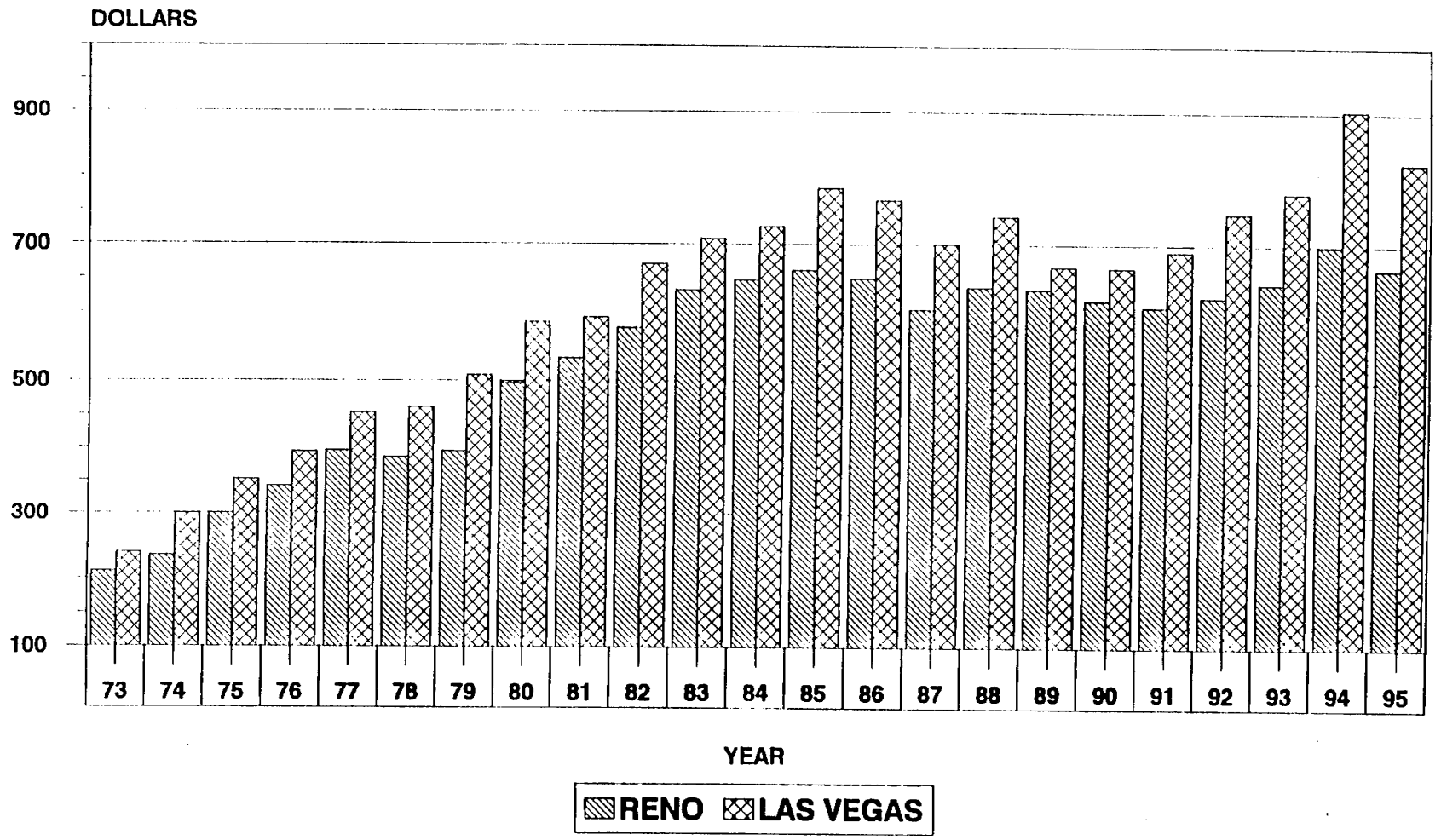
AVERAGE ANNUAL RESIDENTIAL CUSTOMER ELECTRICITY USE 1973 THROUGH 1995



AVERAGE ANNUAL RESIDENTIAL ELECTRICAL COST PER KILOWATT HOUR 1973 THROUGH 1995



AVERAGE ANNUAL RESIDENTIAL ELECTRICITY BILL 1973 THROUGH 1995



AVERAGE ANNUAL RESIDENTIAL COST FOR ELECTRICITY IN CURRENT DOLLARS AND 1978 CONSTANT DOLLARS 1978 THROUGH 1995

	NEVADA POWER COMPANY			*SIERRA PACIFIC POWER COMPANY*		
Year	a) Current Dollars	1978 b) Constant Dollars	c) Percent Change	a) Current Dollars	1978 b) Constant Dollars	c) Percent Change
1978	399.60	399.60	0.00	360.00	360.00	0.00
1979	427.95	341.93	-14.43	374.25	299.03	-16.94
1980	554.85	338.68	-15.25	489.00	298.49	-17.09
1981	550.80	295.94	-25.94	539.25	289.74	-19.52
1982	660.15	349.35	-12.58	576.75	305.22	-15.22
1983	711.45	373.87	-6.44	620.25	325.94	-9.46
1984	710.10	369.46	-7.54	629.25	327.40	-9.06
1985	765.45	395.51	-1.02	660.00	341.02	-5.27
1986	797.85	474.88	18.84	660.75	393.05	9.18
1987	687.15	407.14	1.89	612.75	363.05	0.85
1988	729.00	430.98	7.85	630.00	372.46	3.46
1989	661.50	367.50	-8.03	630.00	350.00	-2.78
1990	668.25	344.46	-13.80	610.50	314.69	-12.59
1991	711.45	364.85	-8.70	596.25	305.77	-15.06
1992	757.35	342.07	-14.40	619.50	279.81	-22.28
1993	801.90	404.03	1.11	641.25	323.09	-10.25
1994	897.75	450.58	12.76	693.75	348.19	-3.28
1995	901.80	382.12	-4.37	681.75	288.88	-19.76

a) The average annual cost in current dollars was derived by multiplying the average cost per kWh for each year by a fixed representative kWh consumption; 13,500 kWh for Nevada Power Company Customers and 7,500 kWh for Sierra Pacific Power Company customers.

b) The consumer price index (CPI) for energy use was deflated and used to convert the average annual cost in current dollars to 1978 constant dollars.

c) Percent change indicates the cumulative percent increase/decrease in 1978 constant dollars, from the 1978 base year and measures changes in electricity costs without the effects of inflation.

Note: The cost in current dollars is not the average bill for the designated year but rather is representative of the billing cost for a fixed amount of energy. The standardization makes all bills directly comparable for use in observing changes in residential electricity costs over time.

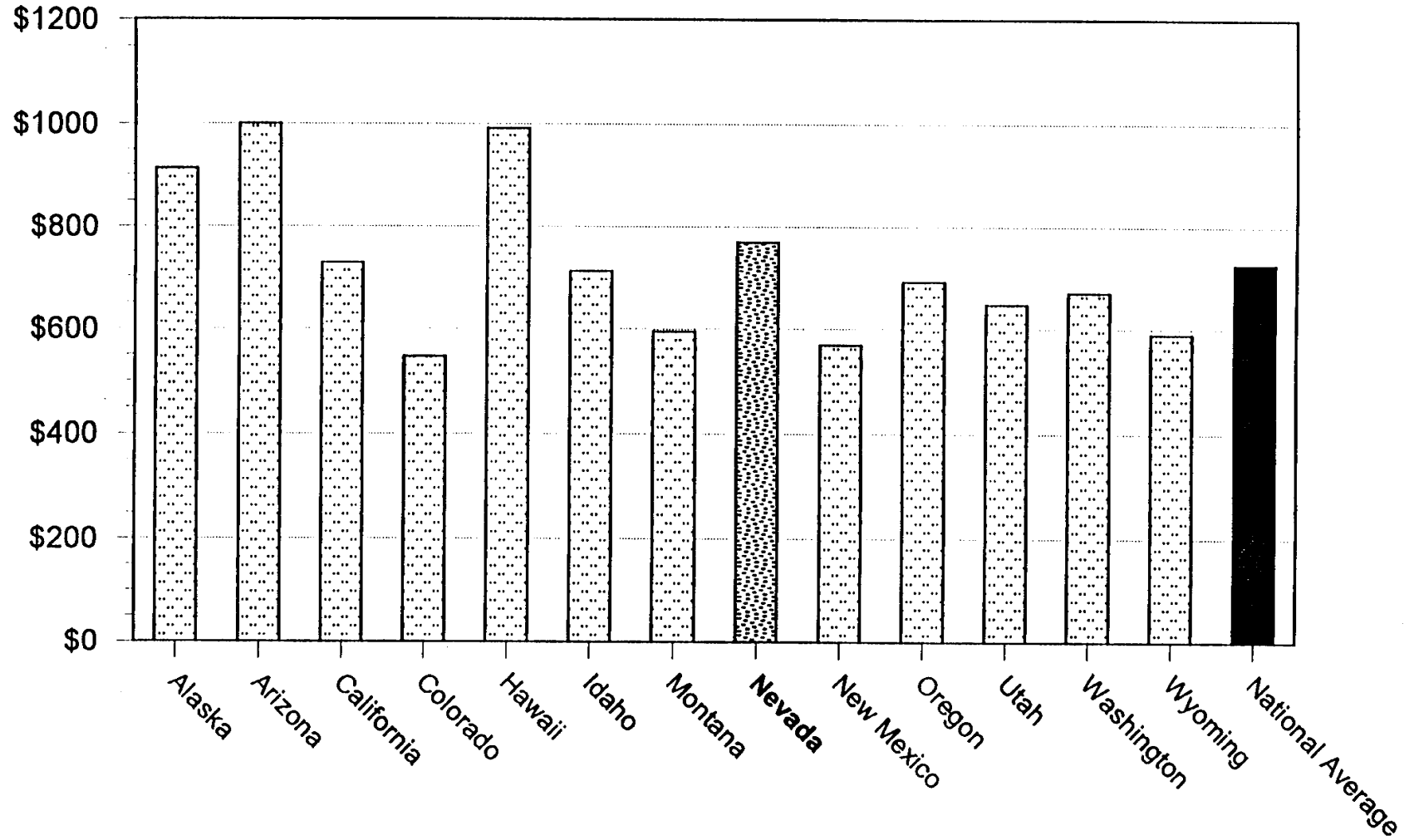
AVERAGE RESIDENTIAL CUSTOMER ELECTRICITY USE AND COSTS — NEVADA vs WESTERN STATES 1995

State	Average Annual Use (kWh)	Average Annual Rank	Average Cost Per kWh	Average Cost Rank	Average Annual Bill
Alaska	8,175	6	0.1116	11	912.11
Arizona	10,983	10	0.0911	10	1,000.06
California	6,260	1	0.1161	12	726.62
Colorado	7,388	3	0.0741	8	545.80
Hawaii	7,433	4	0.1332	13	990.41
Idaho	13,345	12	0.0533	2	710.76
Montana	9,754	8	0.0609	5	593.94
Nevada	***10,809***	***9***	***0.0711***	***7***	***768.70***
New Mexico	6,343	2	0.0897	9	568.84
Oregon	12,564	11	0.0549	3	689.33
Utah	7,874	5	0.0693	6	645.94
Washington	13,584	13	0.0492	1	669.13
Wyoming	9,351	7	0.0608	4	589.92
Western States	9,528		0.0769		724.00
United States	10,042		0.0840		843.87

Source: Edison Electric Institute, Statistical Yearbook, 1996

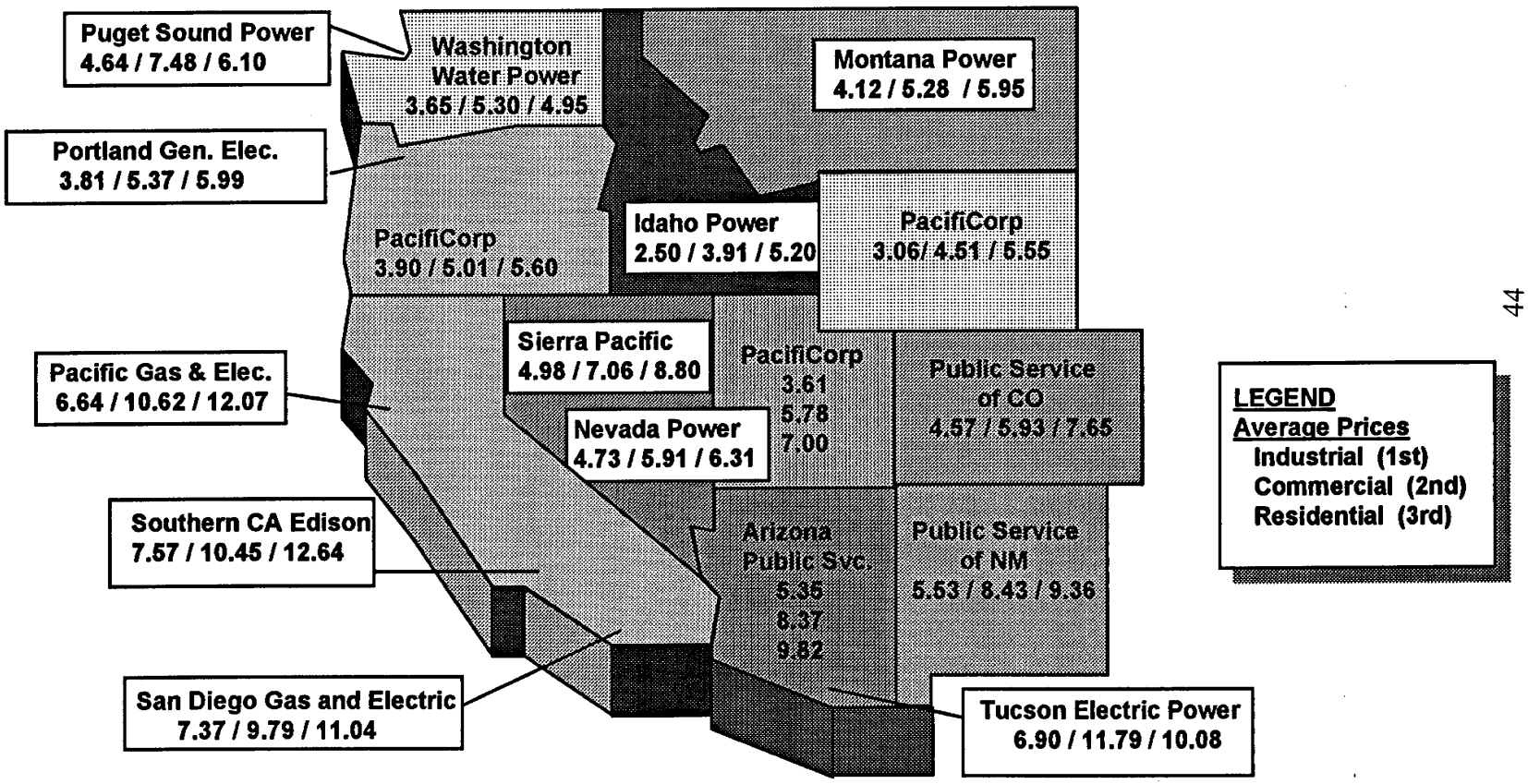
Note: Numbers indicate the rank of the States for the respective headings with "1" representing the lowest kWh use or cost.

AVERAGE ANNUAL RESIDENTIAL CUSTOMER BILL
NEVADA vs WESTERN STATES
1995



1996 UTILITY ELECTRIC PRICES

Sierra Pacific and Nevada Power Adjusted for February 1997 Prices



Sierra Pacific Power Co. / Market Research Department
Electric Utility Rates, Year Ending June 1996, with Sierra Pacific and Nevada Power Adjusted for February 1997 Prices

Nevada Power Company (NPC) provides electricity to over 481,000 in-state customers in a 4,500-square-mile service territory in southern Nevada.[82] Annual electric sales for 1996 were 12,869,825 kWh, producing $771,168,530 in revenue.[83] Overall, total revenues for 1996 were $794,925,322 and total assets stood at $2,307,667,396.[84] The company generated 51 percent of its electricity (7,277,546 mWh) and purchased the other 49 percent (6,940,104 mWh). Record peak demand for electricity occurred on July 23, 1996, when deliveries reached 3,332 mW.

The Nevada Rural Electric Association (NREA) is comprised of seven rural electric cooperatives and two power districts. Four of the utilities are headquartered outside Nevada but serve portions of the state. The member utilities of NREA are: Wells Rural Electric Company; Valley Electric Association; Mt. Wheeler Power, Inc.; Overton Power District #5; Lincoln County Power District; Harney Electric Cooperative (in Oregon); Raft River REC (in Idaho); Surprise Valley EC (in California); and Plumas-Sierra REC (in California). The NREA services nearly 30,000 in-state customers in 50,000 square miles of territory. Sales in 1995 approached 2 million mWh, worth $91,066,807. All of the electricity sold by the NREA is purchased from other companies.[85]

VII. CURRENT STATE ENERGY POLICY[86]

The *Nevada Revised Statutes* include numerous provisions governing energy conservation and the use and development of various energy resources. Some of the most important provisions are found in NRS Chapter 523, titled "Energy," and NRS Chapter 704, titled "Regulation of Public Utilities Generally."

Nevada's State energy policy is stated in NRS 523.011, which reads as follows:

1. The legislature finds that:

    a. Energy is essential to the economy of the state and to the health, safety and welfare of the people of the state.

    b. The state has a responsibility to encourage the maintenance of a reliable and economical supply of energy at a level which is consistent with the protection of environmental quality.

---

[82] Data supplied by Nevada Power Company.

[83] Ibid.

[84] Ibid.

[85] Data supplied by the NREA.

[86] This section, with necessary updating, is reprinted from Legislative Counsel Bureau Bulletin 95-7, pages 10-14, "Conservation and Development of Energy Resources," December 1994.

c. The state has a responsibility to encourage the utilization of a wide range of measures which reduce wasteful uses of energy resources.

d. Planning for energy conservation and future energy requirements should include consideration of state, regional and local plans for land use, urban expansion, transportation systems, environmental protection and economic development.

e. Government and private enterprise need to accelerate research and development of alternative sources of energy and to improve technology related to the research and development of existing sources of energy.

f. While government and private enterprise are seeking to accelerate research and development of alternative sources of energy, they must also prepare for and respond to the advent of competition within the electrical energy industry and are, therefore, encouraged to maximize the use of indigenous energy resources to the extent competitively and economically feasible.

g. Prevention of delays and interruptions in providing energy, protecting environmental values and conserving energy require expanded authority and capability within state government.

2. It is the policy of this state to encourage participation with all levels of government and private enterprise in cooperative state, regional and national programs to assure adequate supplies of energy resources and markets for such energy resources.

3. It is the policy of this state to assign the responsibility for managing and conserving energy and its sources to agencies whose other programs are similar, to avoid duplication of effort in developing policies and programs for energy.

Chapter 523 of NRS contains provisions which require the Department of Business and Industry (DB&I) to:

- Develop a State Energy Conservation Plan (NRS 523.141);
- Prepare plans for the allocation and rationing of petroleum and administer federal programs for fuel allocation (NRS 523.151);
- Adopt regulations for the conservation of energy in buildings, including manufactured homes (NRS 523.164);
- Administer the law which prohibits the installation of electric resistance space heating systems in counties over 100,000 population (NRS 523.167);

- Provide, upon request, energy-related information and assistance to state agencies (NRS 523.171); and

- Prepare an annual status report on energy and submit it to the Governor and the Legislature (NRS 523.181).

Under NRS 523.131, the Director of DB&I has several duties relating to analyzing energy information and encouraging the development of geothermal and other alternative energy sources.

The director has assigned the administration of most of the provisions of Chapter 523 of NRS to the State Energy Office (SEO) within the department.

Under Chapter 704 of NRS and related statutes, the PSCN is responsible for implementing an important part of state energy policy through the regulation of Nevada's investor-owned electric and natural gas utilities. In 1983, the Nevada Legislature enacted IRP statutes for Nevada's largest electric utilities (NRS 704.741 through 704.751). The IRP requirement was extended to the natural gas utilities under 1987 legislation (NRS 704.755). Nevada's IRP process considers demand-side measures (conservation and load management) and supply-side measures (such as generation facilities) to provide the lowest cost mix of energy resources necessary to meet energy demand.

Under the IRP statutes, NPC and SPPCo are required to file electric resource plans every three years, with amendments as necessary. Sierra Pacific Power Company and Southwest Gas Corporation are required to file gas resource plans every three years, with amendments as necessary. Resource plans use a 20-year planning horizon and a 10-year historical period.

In addition to demand-side and supply-side components, electric utility resource plans must include a load forecast (estimate of future energy sales and peak demands while considering energy prices) and integration analysis (establishing priorities among demand and supply options in order to determine the minimum costs of providing electricity to customers). Minimum costs are generally measured by computing a net present worth computed over the 20-year planning horizon for each plan. The plan with the minimum net present worth is considered to be the "least cost" plan. According to the PSCN, the minimum cost or "least cost" is the primary factor it considers when approving or rejecting a resource plan.[87] The commission also considers, among other things, the economic benefits (*Nevada Administrative Code* [NAC] 704.9357) and environmental costs (NAC 704.9359) to Nevada.

Paragraph (c) of subsection 3 of NRS 704.746 requires the PSCN to determine whether an electric utility's resource plan adequately demonstrates the economic, environmental and other benefits

---

[87] Testimony of John. F. Mendoza, PSCN Chairman, presented at the November 10, 1993, meeting of the Legislative Commission's Subcommittee to Review Present Efforts to Conserve and Develop Energy Resources (S.C.R. 35).

to this state and to the customers of the utility, associated with the following possible measures and sources of supply:

- Improvements in energy efficiency;
- Pooling of power;
- Purchases of power from neighboring states or countries;
- Facilities that operate on solar or geothermal energy or wind;
- Facilities that operate on the principle of cogeneration or hydrogeneration; and
- Other generation facilities.

Subsection 4 of NRS 704.746 allows, but does not mandate, the PSCN to give preference to the measures and sources of supply listed in the aforementioned paragraph (c) of subsection 3; to receive preference, such energy measures and sources must:

- Provide the greatest economic and environmental benefits;
- Be consistent with the provisions of this statute; and
- Provide adequate and reliable levels of service.

During the 1995 Legislative Session, additional energy measures were enacted as follows:

- *Nevada Revised Statutes* 704.743 authorizes the PSCN to approve optional programs that have higher rates for electricity produced from renewable resources for customers who want to support increased use of such resources.
- Provisions regarding property tax exemptions for systems using solar power and recycled materials in NRS 361.0685 were amended to extend the manufactures' exemption to a maximum of 20 years for real property and limits the personal property exemption to 10 years.
- *Nevada Revised Statutes* 278.580 was amended to require local building codes to permit the use of straw in construction and solar energy for heating to the extent local climate allows.

VIII. SUMMARY OF PROPOSALS

This section contains a summary of the recommendations, arranged under topical headings, which were presented to the subcommittee during its hearing process.

A. Competition

Some parties recommended that, before adopting measures to address retail competition, the first step should be to achieve full competition in the wholesale generation market with fair and equal access. Those favoring this approach suggested further study of the costs and benefits of a fully deregulated generation market, including consideration of spinning off existing utility-owned generation facilities into unregulated subsidiaries or unregulated independent generation companies. These parties suggested that, if further study warrants allowing full retail competition in generation, then an appropriate timetable for deregulating the market should be established.

Everyone agreed that the statutes and regulations must provide a level playing field for all participants and that a competitive market for customer choice should result in net benefit for all, without some customers suffering a loss. A number of parties expressed concern at the possibility that large customers might dominate the market for choice, to the exclusion of small customers. Some participants went so far as to say that all classes of electric consumers should benefit equally as a result of any restructuring process.

Advocates for public entities testified that restructuring should encourage the aggregation of small commercial and residential customer loads. Furthermore, these representatives wanted to ensure that municipalities and other governmental entities have the right to aggregate customers within their boundaries and to engage in wheeling agreements with independent energy suppliers. Spokesmen for rural cooperatives maintained that, during any period of experimental restructuring, power districts and cooperatives should be exempt from the new provisions. Other participants warned that the Legislature and the PSCN must disaggregate utility functions that involve the ability to exercise monopoly/monopsony power from those that do not, and suggested that divestiture is the cleanest and most effective way to address market power.

Also, a proposal was presented outlining the creation of a consumer's cooperative in southern Nevada. Under this proposal, NPC would be restructured as a competitive, private, for-profit generation company. The distribution functions of NPC would be sold to a private, member-owned, nonprofit distribution cooperative composed of former NPC customers.

B. Transition Period

Discussions of a transition period to retail competition in the generation market ranged from recommendations that retail competition should be implemented immediately to suggestions that jurisdictional authority over transmission must be worked out before restructuring is implemented. Proposed time frames for a transition included three- and five-year periods. Some parties recommended that direct access should be available to all customer classes simultaneously, regardless of the transition period. It was suggested that steps in the transition process should include setting policy guidelines, establishing a beginning point for the transition, creating a market structure that will enhance and serve the policy and transition, and focusing more on customers and less on interactions between competitors.

C. Scope of Regulation

There was general consensus that customers without access to the competitive market must continue to be protected from the monopoly pricing power of utilities. Most commentators believed that transmission and distribution rates should remain economically regulated but that, in general, regulatory oversight should be reduced rather than expanded or increased. Emphasis was placed on flexibility so that regulation can adjust services and prices based on customer needs and market conditions. It was stressed that economic regulation should be applied equally to all competitors. A need was acknowledged for changes in the nature of the regulatory body and regulations as the industry evolves. Utilities must be relieved of their traditional obligation to serve, while customers who choose alternative power sources should be required to accept responsibility for procuring their own new power supplies. Cooperatives recommended that the Colorado River Commission either function as a utility or cease its administrative duties over the Boulder Canyon Project. These organizations further recommended that the Legislature not impose regulatory burdens on power cooperatives, which are currently governed by their own bylaws and constitutions. Some observers suggested that suppliers of retail power should be licensed and subject to relevant state consumer protection laws.

A proposal was presented calling for consolidation within the Office of the Attorney General of the Consumers Advocate, the Criminal Securities Unit, and the Telemarketing and Consumer Fraud Unit. Proponents indicated that in a competitive environment, consumers need more education and protection against deceptive trade practices and less assistance in the area of economic regulation.

Other proposals included the elimination of the Utility Environmental Protection Act (UEPA) permitting process contained in NAC 703.415 to 703.428. Proponents of this recommendation contend that these rules simply provide another layer of redundant regulation and add unnecessary delays to the process. Alternatively, it was suggested that facilities should be exempt when PSCN approval is not required because another agency is designated as the lead agency. It was suggested that, at a minimum, the rules should be revised to allow the UEPA permitting process to occur concurrently with permitting required by other agencies to eliminate inconsistent treatment for construction of comparable facilities. Another proposal recommended enacting legislation

requiring the PSCN to make a specific finding that any merger or acquisition involving a Nevada utility is not anti-competitive before granting approval.

D. Generation

Discussion of generation issues touched on areas like siting, with recommendations that plant location should be market driven and not controlled by "need determinations." There was a suggestion to establish two, tight power pools; one for the north and one for the south, in which all Nevada utilities, co-ops and, munis would be required to participate. Under this plan, all generation would be coordinated and dispatched on an economic basis from these pools. The PSCN would be authorized to identify the boundaries and members of the two pools. Other parties objected to the pooling concept, maintaining that direct access by customers to power markets (not via pools or around pools) is the cornerstone of a more competitive approach.

E. Transmission

It was suggested that transmission is a natural monopoly and must be carefully regulated. Recommendations included the suggestion that transmission services should remain subject to careful cost-based regulation by FERC and the PSCN to ensure that comparable services are offered at non-discriminatory rates to all customer classes. Some advocated that transmission pricing should continue to be based on cost-of-service principles rather than on opportunity cost, which would allow the ISO to exact monopoly rents in order to obtain access to congested transmission lines. Creation of a single, statewide independent transmission system operator (ISO) was also proposed. This ISO would coordinate all generation, transmission and distribution. In addition, the ISO would have the necessary authority to ensure operational reliability of both dispatching and the transmission grid. The PSCN would establish the scope of the ISO's authority and promulgate rules for pricing and allocating costs among pool participants. The ISO would own no generation, transmission, or distribution facilities and have no corporate affiliation with any companies that own such facilities. It was also suggested that the ISO should:

- Provide transmission delivery services at FERC-approved rates, but should not perform any role to ensure economic efficiency through centralized dispatch of generating units;
- Lease transmission facilities from their current owners, but should not own any physical assets;
- Contract to provide ancillary services not directly provided by market participants;
- Monitor all transactions and any deviations from quantities nominated for transmission by market participants; and
- Perform the "planning function" for new transmission facilities in conjunction with other interested parties. Construction of these facilities would be competitively bid, privately undertaken, and leased back to the ISO.

F. Distribution

Several participants advocated that protection of exclusive distribution service territories should be maintained. Distributors should be obligated to connect customers to the electric system but should not obligated to sell electricity. It was recommended that distribution services remain subject to careful cost-based regulation to ensure that comparable services are offered at non-discriminatory rates to all customer classes. Other parties recommended that the distribution functions of the incumbent utilities be separated from their power generation operations.

G. Stranded Costs

The issue of stranded costs is one of the most important topics in restructuring. There were diametrically opposed recommendations about recovery of these costs. Some participants maintained that there should not be a formal process by which utilities recover stranded investments, although utilities should have the ability to prepare for competition. Other parties urged the subcommittee to affirmatively state the right to reasonably recover all stranded costs, while defining a recovery period of three years or less; still others suggested that no formal recovery of stranded costs be permitted after a five-year transition period. Some commentators maintained that customers departing for competitive alternatives should compensate the utilities for stranded costs imposed by governmental mandates, but that no compensation should be required for past management decisions that turned out to be uneconomic. Some participants said that the potential for stranded costs only exists to the extent power generation capacity is idled as a result of competition; and, at any rate, stranded cost implications are only acceptable in the short term. Those who testified stranded costs should be recoverable were concerned that they be fairly and equitably allocated. Others noted that consideration must be given to contracts created under existing regulations.

Some proposals advocated splitting stranded cost recovery. For example, one recommendation suggested that utilities in the power pools would be entitled to split-cost savings, in exchange for cooperating with the ISO. One half of the savings would go to the utility purchasing the power and its ratepayers. The other half would go to the owners of the resources used to serve the utility's customers. All pool participants would benefit by sharing the savings in variable costs while continuing to recover fixed generation costs from their ratepayers. Thus, recovery of fixed costs would not be at risk. Under this proposal, to the extent utilities have stranded costs, the PSCN would be authorized to offer two options to recover such costs.

The first option would entail a nominal dollar rate freeze for the first five years immediately following enactment of restructuring legislation. In year four, the PSCN would hold a full rate case hearing to set rates that would take effect after year five. This rate would not include any further stranded cost recovery. Additionally, the fuel adjustment clause would be eliminated.

Under the second option, the PSCN would determine a utility's stranded costs and allow up to 50 percent of these costs to be recovered by a non-bypassable recovery charge. There would be

an annual true-up mechanism. The fuel adjustment clause would be modified to allow only 50 percent of the under-or-over collection to be passed through to ratepayers. The other 50 percent would be allocated to the utility.

Alternatively, if utility stranded cost recovery was allowed, other parties testified that it should be limited to substantially less than 100 percent of the maximum eligible amount. Some suggested that recovery should only apply to sunk costs and not future costs, and be directed at the replacement of old, inefficient generation with less costly energy efficiency improvements and non-polluting renewable capacity. According to this approach, direct-access customers or community access aggregators opting to contract for renewable resources above a specified minimum would receive a commensurate reduction in stranded cost recovery obligations.

H. Access to Information

A major concern in a more competitive environment is access to customer information. To compete equally, marketers need access to consumer purchasing data. However, such access raises questions about proprietary rights to information as well as customer privacy. Some participants recommend that regulators assure utilities that commercially sensitive information will not be publicly disclosed. There is also concern that, if an ISO is created, Nevada utilities, co-ops, and munis must provide the entitiy with any and all information needed to perform its tasks.

I. Reciprocity

Reciprocity involves the principle that if one jurisdiction allows businesses from other states to sell to customers within its borders, the home states of those businesses should allow free competition as well. Some participants indicated reciprocity of access among jurisdictions should be a prerequisite to retail competition in Nevada. Other observers noted that there may be federal constitutional prohibitions against reciprocity requirements.

J. Taxation

Several parties noted that restructuring can have significant impacts on existing tax structures, particularly for local governments. Some parties stated that: 1) taxes levied on utilities should be the same for new companies entering Nevada; 2) to the extent that activities currently performed by utilities (and for which they are taxed) are performed by new entities, changes in the tax laws may be needed to retain the present level of revenues; 3) the more consistent the tax policies in a region, the easier it is to obtain even and fair competition; and 4) since Nevada and the surrounding states are part of the same regional economy, it may be useful to investigate how other states intend to tax activities in a changing electric industry.

Some representatives of local governments recommended: 1) enacting legislation that would subject all retail energy sales made in Nevada to local franchise fees and/or sales and use taxation; and 2) legislation requiring the PSCN, the cities, and the counties to concur in any changes to

certified territories where the proposed change impacts local franchise agreements or franchised service areas.

K. Financial

Various concerns were expressed about the impact of restructuring on the financial condition of utilities and their shareholders. Some parties recommended encouraging long-term capital investment. Other observers advised that the financial integrity of the utilities should be maintained by providing the utilities with a reasonable opportunity to earn a fair rate of return on their investments and that shareholders be permitted to retain financial benefits, particularly if they are assuming higher risks.

L. Reliability

Continuing the theme that there should be a level playing field for all competitors, it was recommended that: 1) if utilities are required to maintain extra capacity, power marketers should be required to have the same safety margin; 2) restructuring should ensure that there is no decrease in reliability; 3) new competitors must share in the responsibility to maintain reliability; 4) utilities be able to recover the cost of emergency "back-up" services for former customers, if the utilities are required to provide such service. It was also suggested that electric consumers who have less need for reliable service should not be forced to buy and pay for unwanted services.

M. Rates

Some participants who did not favor full retail competition are of the opinion that utilities should be allowed greater flexibility in developing large-customer rates. It was suggested that the PSCN should be instructed to work with transmission owners to: introduce congestion pricing; consider two "postage stamp" rates (one each for the northern and southern portions of Nevada); and consider rate design issues related to the allocation of costs-to-demand and energy charges.

Others who testified argue that traditional rate making must come to an end. There is general agreement that rates must be affordable, predictable, stable, and reflect the level of service desired. It was also recommended that costs must be assumed by the customers that cause those costs. Furthermore, residential customers should no longer receive rate subsidies from other customer classes. Other recommendations were that restructuring should achieve significant short- and long-term rate reductions for all utility customers. Rate reductions for residential and small commercial customers should be contemporaneous with, and proportionate to, savings achieved by other customer classes. Some of those who advocated a transition to retail competition suggested that overall price levels should be capped during the transition period; utilities could realign prices with costs without a general rate case, subject to a limited percentage increase to any customer class. Finally, it was noted that performance-based rates offer incentives by rewarding efficient performance, with the savings split between customers and shareholders.

N. Universal Service/Social Programs

There was general recognition that electric service is essential and should be available and affordable to all customers. It was recommended that all customers continue to share in the costs of programs that benefit the utility system and the public interest.

O. Environmental Issues And Renewable Resources

Many participants recommended that public policy goals related to environmental protection and resource diversity must be maintained. Some parties stated that: 1) the subcommittee's final recommendations to the 1997 Legislature should specifically address the issue of renewable resources; 2) a specific policy statement would provide the necessary emphasis for funding further research, development, and technical support for renewables; and the PSCN should continue to have a role in the development and deployment of renewables to ensure the ongoing protection of the public interest.

Several contributors stated that: 1) the Legislature should mandate development of resource portfolio standards in the IRP process; 2) these standards be applied by region to all utilities, co-ops, and munis in Nevada; 3) each provider of electric services should be required to assume responsibility for specified levels of investment in particular types of capacity, fuel, DSM, or renewables, and such a program should include a market-based trading system for these obligations. Another recommendation suggested that if the Legislature rejects the concept of mandatory IRP and resource portfolios standards for the two power pools, then the PSCN should be given authority to implement a non-bypassable system benefits charge applicable to all users of the transmission and distribution systems to fund DSM, renewables, and environmental initiatives. A similar proposal recommended that utility investments that deliver system-wide economic, environmental, and equity benefits should be sustained with a Systems Benefits Charge (SBC). This SBC should be a non-bypassable, usage-based charge on electric distribution services. The SBC should also be used to fund renewable resources that cannot compete within the market established by the resource portfolio standards. During the transition period, the SBC should also support historical funding levels of research, development, and demonstration.

P. Integrated Resource Planning

There are divergent views about IRP. Some participants say IRP should reflect the power sourcing wishes of the customer and not the traditional long-term power sourcing intentions of the utilities. Other parties suggest the PSCN should be given the statutory authority to develop two IRPs, one each for the northern and southern portions of the state. The process would occur every three years and proceed under existing statutes and regulations. This process would produce two resource portfolio standards. Initially, the PSCN would propose the plans. Further, it was recommended that all new resources, including DSM for utilities, co-ops, and munis, must be obtained through a standardized, competitive bidding process based on a single, statewide selection criteria. The PSCN would conduct the bidding unless the entity seeking the resource was prohibited from owning any new generating capacity.

Other comments were directed at the IRP process itself, with some parties suggesting that: 1) IRP regulatory procedures need to be redesigned to achieve consistency with the current industry structure and resource acquisition process; 2) planning studies and the decisions that follow will require completion in a more timely manner; 3) regulatory burdens need to be reduced by changing the IRP statutes to require an informational filing by all entities offering service to Nevada customers; and 4) statutes which allow for consideration of environmental aspects of electric utility resource planning and acquisitions should be repealed, unless they are made applicable to all customers and suppliers.

Q. Unbundling

It was suggested that the PSCN be directed to require utilities, co-ops, and munis to unbundle the pricing of electricity at the retail level. Some participants felt such unbundling should be required even if retail competition was not instituted.

R. Regional Issues

It was recommended that, if feasible, Nevada encourage greater regional collaboration and coordination among the state's power pools and those pools outside Nevada. It also was noted that Nevada would benefit from enlisting neighboring states in establishing a comprehensive energy policy that contains specific goals, options, and the consideration of the role of renewables.

S. Miscellaneous

A number of miscellaneous recommendations were proposed, including that:

- There must be a mechanism for fair dispute resolution, other than the court system.
- The Legislature should establish a Declaration of Legislative Findings and Purpose, which adopts a clear set of objectives that it believes should be met in a restructured electric industry, and should also establish a set of key principles to be upheld during and after reforming the industry.
- A joint legislative committee should be established to provide continuing oversight of utility restructuring.

IX. RECOMMENDATIONS

At its final meeting on January 29, 1997, the A.C.R. 49 Subcommittee reviewed its activities during the interim. The enabling legislation charged the subcommittee to study an extensive list of issues relating to restructuring the state's electric power industry, including the financial concerns of residential consumers, large and small businesses; the economic integrity of utilities and their cost of capital; taxes, franchise fees, and the impact on local governments of potential changes in these revenue sources; class subsidies, pricing; and the quantification and recovery of stranded costs; and the unbundling of electrical services.

Furthermore, A.C.R. 49 directed the subcommittee to examine legal issues such as the parameters of state and federal jurisdiction, interstate reciprocity, Commerce Clause constraints, universal service requirements, as well as protection of proprietary information, and privacy in competitive markets.

The scope of the study also included social issues regarding environmental externalities, integrated resource planning, and the role of renewable resources.

Lastly, the A.C.R. 49 study extended to issues concerning electrical system planning, operation, and reliability.

In the course of its study, the subcommittee held 11 meetings around the state, heard from more than 60 witnesses, and received over 70 exhibits. Interested parties testifying before the subcommittee included representatives from the business community, residential consumers, rural co-ops, shareholders, and utility concerns. Witnesses appeared on behalf of state and local governments, regional reliability councils, environmental groups, and the public. The subcommittee had the benefit of testimony from a number of recognized experts, including Scott Hempling and Daniel Fessler, former California CPUC President.

In the course of this testimony and documentation, all the required elements of the A.C.R. 49 mandate were considered. The study resulted in an abundance of comparisons of other states' efforts, general principles, opinions, and pertinent facts. This information led to the identification of more specific issues and policy decisions which should be addressed. Despite the extensive progress the subcommittee made in understanding industry restructuring, and the information it compiled; the complexity and number of the outstanding issues involved with electric retail competition led the subcommittee to conclude that further study is imperative. The subcommittee determined that, while it would be imprudent to simply maintain the status quo in the face of growing industry competition and the actions being taken by neighboring states, it would be a grave mistake to base far-reaching policy decisions on insufficient data.

Therefore, the subcommittee recommends that the 1997 Legislature:

Appoint a six-member interim study subcommittee to conduct further investigation into all aspects of restructuring the electric industry. The subcommittee should consist of three members from each house who serve on the standing committees of destination for restructuring issues. The Legislative Commission should select the chairman and provide the necessary staff for the subcommittee. The subcommittee should meet not less than quarterly and receive normal compensation for salary and per diem. All decisions should to be made by a simple majority vote of the members. The subcommittee should conduct its proceedings and make its deliberations in accordance with the ten General Principles adopted by this subcommittee on June 12, 1996.

This proposal was unanimously adopted by the A.C.R. 49 Subcommittee and incorporated into a BDR, which has been submitted to the 1997 Legislature for consideration.

The subcommittee's suggested legislation is included in this report as Appendix C.

X. SELECTED REFERENCES

American Legislative Exchange Council (November 1996). "Electric Industry Restructuring: History and Background," *The State Factor* (Vol. 21, No. 5, April 1995). Washington, D.C.

American Legislative Exchange Council (November 1996). "Electric Industry Restructuring: History and Background," *The State Factor* (Vol. 22, No. 8). Washington, D.C.

Brockway, Nancy, and Sherman, Michael (October 1996). "Stranded Benefits in Electric Utilities Restructuring," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Brower, Michael C. (October 1996). "The British Electric Utility Restructuring Experience," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Centolella, Paul A. (October 1996). "The Organization of Competitive Wholesale Power Markets and Spot Price Pools," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Colton, Roger D. (October 1996). "Assessing Impacts on Small-Business, Residential and Low-Income Customers," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Crandall, Robert, and Ellig, Jerry (January 1997). "Economic Deregulation and Customer Choice: Lessons for the Electric Industry." Fairfax, Virginia: Center for Market Processes, George Mason University.

Costello, Kenneth W., Burns, Robert E., and Hegazy, Youssef (May 1994). "Overview of Issues Relating to the Retail Wheeling of Electricity," The National Regulatory Research Institute. Columbus, Ohio: Ohio State University.

Deloitte & Touche LLP (October 1996). "Federal, State and Local Tax Implications of Electric Industry Restructuring," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Enholm, Gregory B., and Malko, J. Robert (January 1994). "Electrical Utilities Moving Into the 21st Century." Arlington, Virginia: Public Utilities Reports, Inc.

Flavin, Christopher, and Lenssen, Nicholas (June 1994). "Powering the Future: Blueprint for a Sustainable Electric Industry." Washington, D.C.: Worldwatch Institute Paper 119.

Hill, Lawrence J., and Brown, Matthew H. (December 1995). "Changing Electric Markets," *State Legislative Report* (Vol. 20, No.19). Denver, Colorado: National Conference of State Legislatures.

Hill, Lawrence J., and Brown, Matthew H. (December 1995). "Competing Utilities and Energy Efficiency, Renewable Energy and Low-Income Customers," *State Legislative Report* (Vol. 20, No.21). Denver, Colorado: National Conference of State Legislatures.

Hill, Lawrence J., and Brown, Matthew H. (December 1995). "Organization and Regulation of the Electric Industry," *State Legislative Report* (Vol. 20, No.18). Denver, Colorado: National Conference of State Legislatures.

Hill, Lawrence J., and Brown, Matthew H. (December 1995). "Performance-Based Regulation in the Electric Industry," *State Legislative Report* (Vol. 20, No.22). Denver, Colorado: National Conference of State Legislatures.

Hyman, Leonard S. (August 1994). "America's Electric Utilities : Past, Present and Future." Arlington, Virginia: Public Utilities Reports, Inc.

Nevada State Energy Office Staff (December 1995). *Energy For Nevada: Report to the Legislature on the Status of Energy in Nevada for the Year 1995.* Carson City, Nevada: Department of Business and Industry.

Public Service Commission of Nevada Staff (November 1995). *Primer on Electric Industry Restructuring*. Carson City, Nevada: Public Service Commission of Nevada.

Public Service Commission of Nevada Staff (June 1996). *The Structure of Nevada's Electric Industry: Promoting the Public Interest.* Carson City, Nevada: Public Service Commission of Nevada.

Schoengold, Dave (October 1996). "The Unintended Impacts of Restructuring," The National Council on Competition and the Electric Industry *Electric Industry Restructuring Series*. Denver, Colorado: National Conference of State Legislatures.

Spratley, William A., and Associates (Eds.), *LEAP Letter*, Legislative Energy Advisory Program Quarterly Legislative Newsletter. Columbus, Ohio. (This newsletter is a bimonthly publication devoted to restructuring issues.)

United States Department of Energy (August 1996). "The Electric Power Outages in the Western United States, July 2-3, 1996 Report to the President." Washington D.C.: United States Department of Energy.

XI. GLOSSARY

[This Glossary was developed by, and reproduced here with the permission of, the National Council on Competition and the Electric Industry. The Council is a joint project of the National Association of Regulatory Utility Commissioners (NARUC) and the National Conference of State Legislatures (NCSL)]

One of the difficulties with discussing restructuring the electric industry is that terms mean different things to different people. This results in poor communication and misunderstandings about the proposals being discussed. To avoid some of this confusion, the following glossary is provided to clarify what the Council means when it uses certain terms. The glossary from the NARUC publication "Affected with the Public Interest" was used as the base of this list. Supplemental material was taken from many sources, including the Public Utilities Commission of Ohio, and a report by the Texas Ratepayers' Organization to Save Energy, Inc. titled "Electric Utility Restructuring, Can the Small Consumer Afford It?"

Access Charge – A charge levied on a power supplied, or its customer, for access to a utility's transmission or distribution system. It is a charge for the right to send electricity over another's wires.

Aggregator — An entity that puts together customers into a buying group for the purchase of a commodity service. The vertically integrated investor owned utility, municipal utilities and rural electric cooperatives perform this function in today's power market. Other entities such as buyer cooperatives or brokers could perform this function in a restructured power market. This is opposed to marketer which will be defined as an entity that represents different suppliers.

Average Cost — The revenue requirement of a utility divided by the utility's sales. Average cost typically includes the costs of existing power plants, transmission, and distribution lines, and other facilities used by a utility to serve its customers. It also included operating and maintenance, tax, and fuel expenses.

Avoided Cost — The cost the utility would incur but for the existence of an independent generator or other energy service option. Avoided cost rates have been used as the power purchase price utilities offer independent suppliers (Qualifying Facilities).

Bilateral Contract — A direct contract between the power producer and user or broker outside of a centralized power pool or POOLCO.

Bottleneck Facility — A point on the system, such as a transmission line, through which all electricity must pass to get to its intended buyers. If there is limited capacity at this point, some priorities must be developed to decide whose power gets through. It also must be decided if the owner of the bottleneck may, or must, build additional facilities to relieve the constraint.

BPA — Bonneville Power Administration. One of five federal power marketing administrations that sell low-cost electric power produced by federal hydro electric dams to agricultural and municipal users. The BPA serves Idaho, Oregon, and Washington as well as parts of Nevada and Wyoming.

Broker — A retail agent who buys and sells power. The agent may also aggregate customers and arrange for transmission, firming and other ancillary services as needed.

Bulk Power Supply — Often this term is used interchangeably with wholesale power supply. In broader terms, it refers to the aggregate of electric generating plants, transmission lines, and related-equipment. The term may refer to those facilities within one electric utility, or within a group of utilities in which the transmission lines are interconnected.

Buy through — An agreement between utility and customer to import power when the customer's service would otherwise be interrupted.

Capacity release — A secondary market for capacity that is contracted by a customer which is not using all of its capacity.

Captive Customer — A customer who does not have realistic alternatives to buying power from the local utility, even if that customer had the legal right to buy from competitors.

Commercialization — Programs or activities that increase the value or decrease the cost of integrating new products or services into the electricity sector. (See Sustained Orderly Development.)

Contract Path — The most direct physical transmission tie between two interconnected entities. When utility systems interchange power, the transfer is presumed to take place across the "contract path," notwithstanding the electrical fact that power flow in the network will distribute in accordance with network flow conditions. This term can also mean to arrange for power transfer between systems. (See also Parallel Path Flow.)

Contracts for Differences (CfD) — A type of bilateral contract where the electric generation seller is paid a fixed amount over time which is a combination of the short-term market price and an adjustment with the purchaser for the difference. For example, a generator may sell a distribution company power for ten years at 6¢/kWh. That power is bid into Poolco at some low ¢/kWh value (to ensure it is always taken). The seller then gets the market clearing price from the pool and the purchaser pays the producer the difference between the Poolco selling price and 6¢/kWh (or vice versa if the pool price should go above the contract price).

Co-op — This is the commonly used term for a rural electric cooperative. Rural electric cooperatives generate and purchase wholesale power, arrange for the transmission of that power, and then distribute the power to serve the demand of rural customers. Co-ops typically become involved in ancillary services such as energy conservation, load management and other demand-side management programs in order to serve their customers at least cost.

Deintegration — (See Disaggregation.)

Demonstration — The application and integration of a new product or service into an existing or new system. Most commonly, demonstration involves the construction and operation of a new electric technology interconnected with the electric utility system to demonstrate how it interacts with the system. This includes the impacts the technology may have on the system and the impacts that the larger utility system might have on the functioning of the technology.

Deregulation — The elimination of regulation from a previously regulated industry or sector of an industry.

Derivatives — A specialized security or contract that has no intrinsic overall value, but whose value is based on an underlying security or factor as an index. A generic term that, in the energy field, may include options, futures, forwards, et cetera.

Direct Access — The ability of a retail customer to purchase commodity electricity directly from the wholesale market rather than through a local distribution utility. (See also Retail Competition.)

Disaggregation — The functional separation of the vertically integrated utility into smaller, individually owned business units (i.e., generation, dispatch/control, transmission, distribution). The terms "deintegration," "disintegration" and "delamination" are sometimes used to mean the same thing. (See also Divestiture.)

Distributed Generation — A distributed generation system involves small amounts of generation located on a utility's distribution system for the purpose of meeting local (substation level) peak loads and/or displacing the need to build additional (or upgrade) local distribution lines.

Distribution — The delivery of electricity to the retail customer's home or business through low voltage distribution lines.

Distribution Utility (Disco) — The regulated electric utility entity that constructs and maintains the distribution wires connecting the transmission grid to the final customer. The Disco can also perform other services such as aggregating customers, purchasing power supply and transmission services for customers, billing customers and reimbursing suppliers, and offering other regulated or non-regulated energy services to retail customers. The "wires" and "customer service" functions provided by a distribution utility could be split so that two totally separate entities are used to supply these two types of distribution services.

Divestiture — The stripping off of one utility function from the others by selling (spinning-off) or in some other way changing the ownership of the assets related to that function. Most commonly associated with spinning-off generation assets so they are no longer owned by the shareholders that own the transmission and distribution assets. (See also Disaggregation.)

DSM — Demand-Side Management. Planning, implementation, and evaluation of utility-sponsored programs to influence the amount or timing of customers' energy use.

Economic Efficiency — A term that refers to the optimal production and consumption of goods and services. This generally occurs when prices of products and services reflect their marginal costs. Economic efficiency gains can be achieved through cost reduction, but it is better to think of the concept as actions that promote an increase in overall net value (which includes, but is not limited to, cost reductions).

Economies of Scale — Economies of scale exist where the industry exhibits decreasing average long-run costs with size.

EEI — Edison Electric Institute. An association of electric companies formed in 1933 "to exchange information on industry developments and to act as an advocate for utilities on subjects of national interest."

ELCON — Electricity Consumers Resources Council. The ELCON is an association of 28 large industrial consumers of electricity. The members of ELCON account for over five percent of all electricity consumed in the United States. It was formed in 1976 to enable member companies to "work cooperatively for the development of coordinated, rational and consistent policies affecting electric energy supply and pricing at the federal, state, and local levels."

Electric Utility — Any person or state agency with a monopoly franchise (including any municipality), which sells electric energy to end-use customers; this term includes the Tennessee Valley Authority, but does not include other Federal power marketing agency (from EPAct).

Embedded Costs Exceeding Market Prices (ECEMP) — Embedded costs of utility investments exceeding market prices are: 1) costs incurred pursuant to a regulatory or contractual obligation; 2) costs that are reflected in cost-based rates; and 3) cost-based rates that exceed the price of alternatives in the marketplace. ECEMPS may become "stranded costs" where they exceed the amount that can be recovered through the asset's sale. Regulatory questions involve whether such

costs should be recovered by utility shareholders and if so, how they should be recovered. "**Transition costs**" are stranded costs which are charged to utility customers through some type of fee or surcharge after the assets are sold or separated from the vertically-integrated utility. "**Stranded assets**" are assets which cannot be sold for some reason. The British nuclear plants are an example of stranded assets which no one would buy. (Also referred to as Transition Costs.)

Energy Efficiency — Using less energy/electricity to perform the same function. Programs designed to use electricity more efficiently—doing the same with less. For the purpose of this paper, energy efficiency is distinguished from DSM programs in that the latter are utility-sponsored and -financed, while the former is a broader term not limited to any particular sponsor or funding source. "Energy conservation" is a term which has also been used but it has the connotation of doing without in order to save energy rather than using less energy to do the same thing and so is not used as much today. Many people use these terms interchangeably.

EPA — The Environmental Protection Agency. A federal agency charged with protecting the environment.

EPAct — The Energy Policy Act of 1992 addresses a wide variety of energy issues. The legislation creates a new class of power generators, exempt wholesale generators (EWGs), that are exempt from the provisions of the Public Utilities Holding Company Act of 1935 and grants the authority to FERC to order and condition access by eligible parties to the interconnected transmission grid.

ESCO — Efficiency Service Company. A company that offers to reduce a client's electricity consumption with the cost savings being split with the client.

Exempt Wholesale Generator (EWG) — Created under the 1992 Energy Policy Act, these wholesale generators are exempt from certain financial and legal restrictions stipulated in the Public Utilities Holding Company Act of 1935.

Feebates — A feebate is a revenue neutral strategy which imposes a fee on polluting resources and rebates those fees to cleaner technologies. This can be accomplished directly through the revenue paid to generators by the Poolco or through incorporation of these values into the dispatch/pricing mechanism of the pool.

Federal Energy Regulatory Commission (FERC) — The Federal Energy Regulatory Commission regulates the price, terms and conditions of power sold in interstate commerce and regulates the price, terms and conditions of all transmission services. FERC is the federal counterpart to state utility regulatory commissions.

Forwards — A forward is a commodity bought and sold for delivery at some specific time in the future. It is differentiated from futures markets by the fact that a forward contract is customized, non-exchange traded, and a non-regulated hedging mechanism.

FPA — Federal Power Act of 1935. Established guidelines for federal regulation of interstate energy sales. It is the primary statute governing FERC regulation of the electric sector.

Futures Market — Arrangement through a contract for the delivery of a commodity at a future time and at a price specified at the time of purchase. The price is based on an auction or market basis. Standardized, exchange-traded, and government regulated hedging mechanism.

Generation Company (Genco) — A regulated or non-regulated entity (depending upon the industry structure) that operates and maintains existing generating plants. The Genco may own the generation plants or interact with the short term market on behalf of plant owners. In the context of restructuring the market for electricity, Genco is sometimes used to describe a specialized "marketer" for the generating plants formerly owned by a vertically-integrated utility.

Generation Dispatch and Control — Aggregating and dispatching (sending off to some location) generation from various generating facilities, providing backup and reliability services. Ancillary services include the provision of reactive power, frequency control, and load following. (Also see Power Pool and Poolco.)

Grid — A system of interconnected power lines and generators that is managed so that the generators are dispatched as needed to meet the requirements of the customers connected to the grid at various points. Gridco is sometimes used to identify an independent company responsible for the operation of the grid.

Hedging Contracts — Contracts which establish future prices and quantities of electricity independent of the short-term market. Derivatives may be used for this purpose. (See Contracts for Differences, Forwards, Futures Market, and Options.)

IOU — An investor owned utility. A company, owned by stockholders for profit, that provides utility services. A designation used to differentiate a utility owned and operated for the benefit of shareholders from municipally owned and operated utilities and rural electric cooperatives.

Integrated Resource Planning (IRP) — A public planning process and framework within which the costs and benefits of both demand- and supply-side resources are evaluated to develop the least-total-cost mix of utility resource options. In many states, IRP includes a means for considering environmental damages caused by electricity supply/transmission and identifying cost-effective energy efficiency and renewable energy alternatives. The IRP has become a formal process prescribed by law in some states and under some provisions of the Clean Air Act Amendments of 1992.

Integrated Resource Planning Principles — The underlying principles of IRP can be distinguished from the formal process of developing an approved utility resource plan for utility investments in supply- and demand-side resources. A primary principle is to provide a framework for comparing a variety of supply- and demand-side and transmission resource costs and attributes outside of the basic provision (or reduction) of electric capacity and energy. These resources may

be owned or constructed by any entity and may be acquired through contracts as well as through direct investments. Another principle is the incorporation of risk and uncertainty into the planning analysis. The public participation aspects of IRP allow public and regulatory involvement in the planning rather than the siting stage of project development.

IPP — Independent Power Producer. An private entity that operates a generation facility and sells power to electric utilities for resale to retail customers.

ISDN — Integrated Services Digital Network. A 128 Kbps (kilobytes per second) digital telephone service available in many parts of the country though not universally available that may be able to substitute for fiber optic cable in every respect except possibly television transmission.

ISO — Independent System Operator. A neutral operator responsible for maintaining instantaneous balance of the grid system. The ISO performs its function by controlling the dispatch of flexible plants to ensure that loads match resources available to the system.

Load Centers — A geographical area where large amounts of power are drawn by end-users.

Marginal Cost — In the utility context, the cost to the utility of providing the next (marginal) kilowatt-hour of electricity, irrespective of sunk costs.

Market-Based Price — A price set by the mutual decisions of many buyers and sellers in a competitive market.

Marketer — An agent for generation projects who markets power on behalf of the generator. The marketer may also arrange transmission, firming or other ancillary services as needed. Though a marketer may perform many of the same functions as a broker, the difference is that a marketer represents the generator while a broker acts as a middleman.

Monopoly — The only seller with control over market sales.

Monopsony — The only buyer with control over market purchases.

Municipalization — The process by which a municipal entity assumes responsibility for supplying utility service to its constituents. In supplying electricity, the municipality may generate and distribute the power or purchase wholesale power from other generators and distribute it.

Municipal Utility — A provider of utility services owned and operated by a municipal government.

NARUC — The National Association of Regulatory Utility Commissioners. An advisory council composed of governmental agencies of the fifty States, the District of Columbia, Puerto Rico and the Virgin Islands engaged in the regulation of utilities and carriers. "The chief objective is to

serve the consumer interest by seeking to improve the quality and effectiveness of public regulation in America."

NASUCA — The National Association of Utility Consumer Advocates. NASUCA includes members from 38 states and the District of Columbia. It was formed "to exchange information and take positions on issues affecting utility rates before federal agencies, Congress and the courts."

Natural Monopoly — A situation where one firm can produce a given level of output at a lower total cost than can any combination of multiple firms. Natural monopolies occur in industries which exhibit decreasing average long-run costs due to size (economies of scale). According to economic theory, a public monopoly governed by regulation is justified when an industry exhibits natural monopoly characteristics.

NCSL — The National Conference of State Legislatures. A national advisory council which provides services to state legislatures "by bringing together information from all states to forge workable answers to complex policy questions."

NOPR — A Notice of Proposed Rulemaking. A designation used by the FERC for some of its dockets.

NRTA — Northwest Regional Transmission Association. A subregional transmission group within the Western Regional Transmission Association.

NUG — A non-utility generator. A generation facility owned and operated by an entity who is not defined as a utility in that jurisdictional area.

Obligation to Serve – The obligation of a utility to provide electric service to any customer who seeks that service, and is willing to pay the rates set for that service. Traditionally, utilities have assumed the obligation to serve in return for an exclusive monopoly franchise.

Oligopoly — A few sellers who exert market control over prices.

Options — An option is a contractual agreement that gives the holder the right to buy (call option) or sell (put option) a fixed quantity of a security or commodity (for example, a commodity or commodity futures contract), at a fixed price, within a specified period of time. May either be standardized, exchange-traded, and government regulated, or over-the-counter customized and non-regulated.

Parallel Path Flow — As defined by NERC, this refers to the flow of electric power on an electric system's transmission facilities resulting from scheduled electric power transfers between two other electric systems. (Electric power flows on all interconnected parallel paths in amounts inversely proportional to each path's resistance.)

Peak Load or Peak Demand — The electric load that corresponds to a maximum level of electric demand in a specified time period.

Performance-Based Regulation (PBR) — Any rate-setting mechanism which attempts to link rewards (generally profits) to desired results or targets. PBR sets rates, or components of rates, for a period of time based on external indices rather than a utility's cost-of-service. Other definitions include light-handed regulation which is less costly and less subject to debate and litigation. A form of rate regulation which provides utilities with better incentives to reduce their costs than does cost-of-service regulation.

Portfolio Management — The functions of resource planning and procurement under a traditional utility structure. Portfolio management can also be defined as the aggregation and management of a diverse portfolio of supply (and demand-reduction) resources which will act as a hedge against various risks that may affect specific resources (i.e., fuel price fluctuations and certainty of supply, common mode failures, operational reliability, changes in environmental regulations, and the risk of health, safety, and environmental damages that may occur as a result of operating some supply resources). Under a more market-driven power sector with a "power pool" or POOLCO wholesale market structure, a portfolio manager would: aggregate and manage a diverse portfolio of spot-market purchases, contracts-for-differences, futures contracts and other market-hedging-type contracts and mechanisms.

Power Authorities — Quasi-governmental agencies that perform all or some of the functions of a public utility.

Power Pool — An entity established to coordinate short-term operations to maintain system stability and achieve least-cost dispatch. The dispatch provides backup supplies, short-term excess sales, reactive power support, and spinning reserve. Historically, some of these services were provided on an unpriced basis as part of the members' utility franchise obligations. Coordinating short-term operations includes the aggregation and firming of power from various generators, arranging exchanges between generators, and establishing (or enforcing) the rules of conduct for wholesale transactions. The pool may own, manage and/or operate the transmission lines ("wires") or be an independent entity that manages the transactions between entities. Often, the power pool is not meant to provide transmission access and pricing, or settlement mechanisms if differences between contracted volumes among buyers and sellers exist.

Poolco — Poolco refers to a specialized, centrally dispatched spot market power pool that functions as a short-term market. It establishes the short-term market clearing price and provides a system of long-term transmission compensation contracts. It is regulated to provide open access, comparable service and cost recovery. A poolco would make ancillary generation services, including load following, spinning reserve, backup power, and reactive power, available to all market participants on comparable terms. In addition, the Poolco provides settlement mechanisms when differences in contracted volumes exist between buyers and sellers of energy and capacity.

Provider of Last Resort — A legal obligation (traditionally given to utilities) to provide service to a customer where competitors have decided they do not want that customer's business.

Public Interest Goals — Public interest goals of electric utility regulation include: 1) inter- and intra-class and intergenerational equity); 2) the equal treatment of equals (horizontal equity); 3) balancing long- and short-term goals that have the potential to affect intergenerational balance; 4) protecting against the abuse of monopoly power; and 5) general protection of the health and welfare of the citizens of the state, nation, and world. Environmental and other types of social costs are subsumed under the equity and health and welfare responsibilities.

PURPA — The Public Utility Regulatory Policy Act of 1978. Among other things, this federal legislation requires utilities to buy electric power from private "qualifying facilities," at an avoided cost rate. This avoided cost rate is equivalent to what it would have otherwise cost the utility to generate or purchase that power themselves. Utilities must further provide customers who choose to self-generate a reasonably priced back-up supply of electricity.

PUHCA — The Public Utility Holding Company Act of 1935. This act prohibits acquisition of any wholesale or retail electric business through a holding company unless that business forms part of an integrated public utility system when combined with the utility's other electric business. The legislation also restricts ownership of an electric business by non-utility corporations.

Qualifying Facility (QF) — Under PURPA, QFs were allowed to sell their electric output to the local utility at avoided cost rates. To become a QF, the independent power supplier had to produce electricity with a specified fuel type (cogeneration or renewables), and meet certain ownership, size, and efficiency criteria established by the Federal Energy Regulatory Commission.

Real-Time Pricing — The instantaneous pricing of electricity based on the cost of the electricity available for use at the time the electricity is demanded by the customer.

Reliability — Electric system reliability has two components—adequacy and security. Adequacy is the ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and unscheduled outages of system facilities. Security is the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system facilities.

Renewable Resources — Renewable energy resources are naturally replenishable, but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Some (such as geothermal and biomass) may be stock-limited in that stocks are depleted by use, but on a time scale of decades, or perhaps centuries, they can probably be replenished. Renewable energy resources include: biomass, hydro, geothermal, solar and wind. In the future they could also include the use of ocean thermal, wave, and tidal action technologies. Utility renewable resource applications include bulk electricity generation, on-site electricity generation, distributed electricity generation, non-grid-connected generation, and demand-reduction (energy efficiency) technologies.

Reregulation — The design and implementation of regulatory practices to be applied to the remaining regulated entities after restructuring of the vertically-integrated electric utility. The remaining regulated entities would be those that continue to exhibit characteristics of a natural monopoly, where imperfections in the market prevent the realization of more competitive results, and where, in light of other policy considerations, competitive results are unsatisfactory in one or more respects. Reregulation could employ the same or different regulatory practices as those used before restructuring.

Research and Development (R&D) — Research is the discovery of fundamental new knowledge. Development is the application of new knowledge to develop a potential new service or product. Basic power sector R&D is most commonly funded and conducted through the Department of Energy (DOE), its associated government laboratories, university laboratories, the Electric Power Research Institute (EPRI), and private sector companies.

Resource Efficiency — The use of smaller amounts of physical resources to produce the same product or service. Resource efficiency involves a concern for the use of all physical resources and materials used in the production and use cycle, not just the energy input.

Restructuring — The reconfiguration of the vertically-integrated electric utility. Restructuring usually refers to separation of the various utility functions into individually-operated and -owned entities.

Retail Competition — a system under which more than one electric provider can sell to retail customers, and retail customers are allowed to buy from more than one provider. (See also Direct Access.)

Retail Market — A market in which electricity and other energy services are sold directly to the end-use customer.

Retail Wheeling — See Direct Access.

RD&D — Research, development and demonstration (see definitions above for Research and Development and Demonstration).

RTG — A Regional Transmission Group. A voluntary organization of transmission owners, users, and other entities interested in coordinating transmission planning, expansion, operation, and use on a regional and inter-regional basis. Such groups are subject to FERC approval.

Rules of Conduct — Rules set in advance to delineate acceptable activities by participants, particularly participants with significant market power.

Securitize — The aggregation of contracts for the purchase of the power output from various energy projects into one pool which then offers shares for sale in the investment market. This

strategy diversifies project risks from what they would be if each project were financed individually, thereby reducing the cost of financing. Fannie Mae performs such a function in the home mortgage market.

Self-Generation — A generation facility dedicated to serving a particular retail customer, usually located on the customer's premises. The facility may either be owned directly by the retail customer or owned by a third party with a contractual arrangement to provide electricity to meet some or all of the customer's load.

Self-Service Wheeling — Primarily an accounting policy comparable to net-billing or running the meter backwards. An entity owns generation that produces excess electricity at one site, that is used at another site(s) owned by the same entity. It is given billing credit for the excess electricity (displacing retail electricity costs minus wheeling charges) on the bills for its other sites.

Special Contracts — Any contract that provides a utility service under terms and conditions other than those listed in the utility's tariffs. For example, an electric utility may enter into an agreement with a large customer to provide electricity at a rate below the tariffed rate in order to prevent the customer from taking advantage of some other option that would result in the loss of the customer's load. This generally allows that customer to compete more effectively in their product market.

Stranded Costs/Stranded Assets — See Embedded Costs Exceeding Market Prices.

Stranded Benefits — Public interest programs and goals which could be compromised or abandoned by a restructured electric industry. These potential "stranded benefits" might include: environmental protection, fuel diversity, energy efficiency, low-income ratepayer assistance, and other types of socially beneficial programs.

Sunk Cost — In economics, a sunk cost is a cost that has already been incurred, and therefore cannot be avoided by any strategy going forward.

Supply-Side — Activities conducted on the utility's side of the customer meter. Activities designed to supply electric power to customers, rather than meeting load though energy efficiency measures or on-site generation on the customer side of the meter.

Sustained Orderly Development — A condition in which a growing and stable market is identified by orders that are placed on a reliable schedule. The orders increase in magnitude as previous deliveries and engineering and field experience lead to further reductions in costs. The reliability of these orders can be projected many years into the future, on the basis of long-term contracts, to minimize market risks and investor exposure. (See also Commercialization.)

SWRTA — The Southwest Regional Transmission Association. A subregional RTG within WRTA, and awaiting FERC approval.

System Integration (of new technologies) — The successful integration of a new technology into the electric utility system by analyzing the technology's system effects and resolving any negative impacts that might result from its broader use.

Taking — Reducing the value of someone's property through government action without just compensation.

Tariff — A document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule of prices, under which utility services will be provided.

Time-of-Use (TOU) Rates — The pricing of electricity based on the estimated cost of electricity during a particular time block. Time-of-use rates are usually divided into three or four time blocks per twenty-four hour period (on-peak, mid-peak, off-peak and sometimes super off-peak) and by seasons of the year (summer and winter). Real-time pricing differs from TOU rates in that it is based on actual (as opposed to forecasted) prices which may fluctuate many times a day and are weather-sensitive, rather than varying with a fixed schedule.

Transition Costs — See Embedded Costs Exceeding Market Prices.

Transmission-Dependent Utility — A utility that relies on its neighboring utilities to transmit to it the power it buys from its suppliers. A utility without its own generation sources, dependent on another utility's transmission system to get its purchased power supplies.

Transmitting Utility (Transco) — This is a regulated entity which owns, and may construct and maintain, wires used to transmit wholesale power. It may or may not handle the power dispatch and coordination functions. It is regulated to provide non-discriminatory connections, comparable service and cost recovery. According to EPAct, any electric utility, qualifying cogeneration facility, qualifying small power production facility, or federal power marketing agency which owns or operates electric power transmission facilities which are used for the sale of electric energy at wholesale. (See also Generation Dispatch and Control and Power Pool.)

Unbundling — Disaggregating electric utility service into its basic components and offering each component separately for sale with separate rates for each component. For example, generation, transmission and distribution could be unbundled and offered as discrete services.

Universal Service — Electric service sufficient for basic needs (an evolving bundle of basic services) available to virtually all members of the population regardless of income.

Utility — A regulated entity which exhibits the characteristics of a natural monopoly. For the purposes of electric industry restructuring, "utility" refers to the regulated, vertically-integrated electric company. "Transmission utility" refers to the regulated owner/operator of the transmission system only. "Distribution utility" refers to the regulated owner/operator of the distribution system which serves retail customers.

Vertical Integration — An arrangement whereby the same company owns all the different aspects of making, selling, and delivering a product or service. In the electric industry, it refers to the historically common arrangement whereby a utility would own its own generating plants, transmission system, and distribution lines to provide all aspects of electric service.

Volumetric Wires Charge — A type of charge for using the transmission and/or distribution system that is based on the volume of electricity that is transmitted.

WATSCO — The Western Association for Transmission System Coordination.

Wheeling — The transmission of electricity by an entity that does not own or directly use the power it is transmitting. Wholesale wheeling is used to indicate bulk transactions in the wholesale market, whereas retail wheeling allows power producers direct access to retail customers. This term is often used colloquially as meaning transmission.

Wholesale Competition — A system whereby a distributor of power would have the option to buy its power from a variety of power producers, and the power producers would be able to compete to sell their power to a variety of distribution companies.

Wholesale Power Market — The purchase and sale of electricity from generators to resellers (who sell to retail customers) along with the ancillary services needed to maintain reliability and power quality at the transmission level.

Wholesale Transmission Services — The transmission of electric energy sold, or to be sold, at wholesale in interstate commerce (from EPAct).

Wires Charge — A broad term which refers to charges levied on power suppliers or their customers for the use of the transmission or distribution wires.

WRTA — The Western Regional Transmission Association, an RTG.

WSCC — The Western Systems Coordinating Council. A voluntary industry association created to enhance reliability among western utilities.

WSSP — The Western Systems Power Pool. A FERC approved industry institution that provides a forum for short-term trades in electric energy, capacity, exchanges and transmission services. The pool consists of approximately 50 members and serves 22 states, a Canadian province and 60 million people. The WSSP is headquarter in Phoenix, Arizona.

XII. APPENDICES

Page

APPENDIX A

Assembly Concurrent Resolution No. 49
(File No. 172, *Statutes of Nevada 1995*,
Pages 3049 and 3050)

Assembly Concurrent Resolution No. 49—Assemblymen Braunlin, Neighbors, Allard, Anderson, Arberry, Bache, Batten, Bennett, Brower, Buckley, Carpenter, Chowning, Close, de Braga, Dini, Ernaut, Evans, Fettic, Freeman, Giunchigliani, Goldwater, Harrington, Hettrick, Humke, Krenzer, Manendo, Marvel, Monaghan, Nolan, Ohrenschall, Perkins, Price, Sandoval, Schneider, Segerblom, Spitler, Steel, Stroth, Tiffany, Tripple, and Williams

FILE NUMBER 172

ASSEMBLY CONCURRENT RESOLUTION—Directing the Legislative Commission to conduct an interim study of the impact of competition in the generation, sale and transmission of electrical energy.

WHEREAS, The economy of the State of Nevada is dependent upon the availability of reliable, low-cost electric energy; and

WHEREAS, Nationwide there is a trend toward competition in the generation, sale and transmission of electric energy; and

WHEREAS, The effect of such competition may have potential benefits and impacts on shareholders and owners of public utilities as well as to their customers; and

WHEREAS, The Nevada Legislature does not intend to cause any adverse economic consequences to either shareholders or customers of investor-owned utilities or cooperatives generating, selling or distributing electric energy in the State of Nevada; and

WHEREAS, The Nevada Legislature does not intend to place investor-owned utilities or cooperatives within the State of Nevada at a competitive disadvantage with other states by adopting legislation incompatible with other western states, thus negatively affecting the State of Nevada; and

WHEREAS, It is in the best interest of the residents of the State of Nevada to explore the effects of competition in the generation, sale and transmission of electric energy so as to assess the economic consequences and opportunities associated with such competition; now, therefore, be it

RESOLVED BY THE ASSEMBLY OF THE STATE OF NEVADA, THE SENATE CONCURRING, That the Legislative Commission is hereby directed to appoint a subcommittee of legislators to conduct an interim study of the effects of competition in the generation, sale and transmission of electric energy; and be it further

RESOLVED, That the study must include an assessment of:

1. Financial issues, including, without limitation, the:

(a) Interests of residential customers, including price and choice;

(b) Interests of small business customers, large business customers, shareholders and other stakeholders;

(c) Financial integrity and cost of capital of utilities;

(d) Taxes paid by public utilities including franchise taxes and real and personal property taxes;

(e) Tax implications to local governments;

(f) Quantification and recovery of stranded investments;

(g) Pricing of transmission and distribution services;

(h) Pricing and rate subsidies for all classes of customers; and

(i) Unbundling costs of services;

2. Legal issues, including, without limitation:

(a) Issues of state and federal jurisdiction;

(b) State statutory constraints;

(c) Issues related to the Federal Energy Regulatory Commission;

(d) Commerce clause constraints;

(e) A review of existing state laws, regulations and constitutional provisions which affect the generation, sale and transmission of electric energy;

(f) Interstate reciprocity;

(g) The continuing obligations of a utility to serve customers; and

(h) Issues concerning the use and protection of proprietary information in a competitive market;

3. Social issues, including, without limitation:

(a) The planning and operations of public utilities, including integrated resource planning;

(b) Environmental externalities; and

(c) Development and use of renewable resources; and

4. Issues related to system planning, operation and reliability, including, without limitation:

(a) Electric system reliability and the appropriate role of contracting; and

(b) Provisions by which wheeling customers would be permitted to leave or rejoin the system of a utility;

and be it further

RESOLVED, That any recommended legislation proposed by the subcommittee must be approved by a majority of any members of the Senate and a majority of any members of the Assembly appointed to the subcommittee; and be it further

RESOLVED, That the Legislative Commission shall submit a report of its findings and any recommendations for legislation to the 69th session of the Nevada Legislature.

APPENDIX B

Sources for Merger Chart, page 24

1. "The Electricity Journal Electricity Daily," *The Electricity Journal*, January 6, 1997.
2. Ibid.
3. Ibid.
4. Ibid.
5. Ibid.
6. Ibid.
7. Ibid.
8. "Enron inks $2.1 billion deal," Cable News Network (CNN), July 22, 1996.
9. "Utilities plan big mergers," CNN, August 12, 1996.
10. Ibid.
11. "Utility mergers charge ahead," CNN, September 16, 1996.
12. "Boston Ed in $300M deal," CNN, September 30, 1996.
13. "The Electricity Journal Electricity Daily," *The Electricity Journal*, January 6, 1997.
14. "CalEnergy in $1.2B bid," CNN, October 28, 1996.
15. *Electricity Daily*, January 31, 1997.
16. Dominion buys UK utility," CNN, November 13, 1996.
17. "The Electricity Journal Electricity Daily," *The Electricity Journal*, January 6, 1997.
18. "Duke to buy PanEnergy," CNN, November 25, 1996.
19. "Entergy to buy UK utility," CNN, December 18, 1996.
20. "NY utilities in merger deal," CNN, December 30, 1996.

APPENDIX C

Suggested Legislation

SUMMARY—Directs Legislative Commission to conduct interim study to continue Legislature's review of competition in generation, sale and transmission of electrical energy. (BDR R-256)

ASSEMBLY CONCURRENT RESOLUTION—Directing the Legislative Commission to conduct an interim study to continue the Legislature's review of the impact of competition in the generation, sale and transmission of electrical energy.

WHEREAS, Assembly Concurrent Resolution No. 49 was passed by the 1995 session of the Nevada Legislature and directed the Legislative Commission to conduct an interim study of the impact of competition in the generation, sale and transmission of electrical energy; and

WHEREAS, The Legislative Commission's subcommittee appointed to conduct that study was charged to study an extensive list of issues relating to restructuring the state's electric industry, including:

1. The financial concerns of residential customers, large and small businesses and utility shareholders;

2. The economic integrity of utilities and their cost of capital;

3. The effect of regulatory changes on local governments, particularly on their revenue sources of taxes and franchise fees;

4. Other financial issues including the quantification and recovery of stranded costs, pricing, class subsidies and unbundling of electrical services;

5. Legal issues such as the parameters of state and federal jurisdiction, interstate reciprocity, constraints related to the Commerce Clause of the United States Constitution, the protection of proprietary information and privacy in a competitive market, and the requirement of universal service; and

6. Social issues such as integrated resource planning, environmental externalities and the role of renewable natural resources in the generation of energy; and

WHEREAS, In the course of its study, the subcommittee held 11 meetings throughout the state, heard from more than 60 witnesses, received more than 70 written submissions, and considered all of the issues with which it was charged; and

WHEREAS, The study resulted in an abundance of pertinent facts, opinions, general principles and comparisons of other states' efforts, all of which led to the identification of more specific issues and policy decisions that need to be addressed; and

WHEREAS, The subcommittee adopted the following 10 principles to provide direction for further legislative study and oversight:

"1. Competition in Retail Electric Service: Where effective competition exists, retail electric services should be provided on a competition basis;

2. Full and Fair Competition: The rules that govern market activity should apply to all buyers and sellers in a fair and consistent manner in order to maintain a level playing field

and guarantee a fully competitive market;

3. Reliability: Reliable electric service must be maintained;

4. Benefits for All Customers: All customers and shareholders should have the opportunity to share in the benefits of increased competition;

5. Impact of Competition: No classification of customer should be worse off after the restructuring process;

6. Unbundling of Services and Rates: Services and rates should be unbundled to provide customers with choice and clear price information on the cost components of generation, transmission, distribution and ancillary charges;

7. Universal Service: Electric service is essential and should be available and affordable to all customers;

8. Regulation: The market framework for electric services should maximize reliance on ordinary business transactions and minimize reliance on the administrative regulatory process;

9. Access to Transmission Facilities: Nondiscriminatory open access to the transmission system and distribution facilities should be promoted for all transactions; and

10. Environment: Electric utility restructuring shall in no event result in the degradation of environmental quality. Increased competition should support and further the goals of environmental improvement;" and

WHEREAS, Despite the extensive information the subcommittee compiled and the

progress it made in understanding the subject of restructuring the electric industry, the number and complexity of the outstanding issues led to the inescapable conclusion that further study is imperative to avoid far-reaching policy decisions being based on insufficient data; now, therefore be it

RESOLVED BY THE ASSEMBLY OF THE STATE OF NEVADA, THE SENATE CONCURRING, That the Legislative Commission is hereby directed to appoint a committee of legislators to conduct an interim study which will continue the Legislature's study of the effects of competition in the generation, sale and transmission of electrical energy; and be it further

RESOLVED, That the study must include a continued assessment of the financial issues, legal issues, social issues and other issues with which the previous subcommittee was charged; and be it further

RESOLVED, That the study also include an assessment of more specific and detailed issues, including, but not limited to:

1. The prudent timing of retail competition;

2. Whether retail competition should be accomplished through bilateral contracts, a pooling arrangement or some other method;

3. Whether utilities should be required to divest their generation assets and, if so, the manner in which the divestiture should be accomplished;

4. Whether an independent system operator is necessary and, if so, what powers and duties should be given to the operator and how should the operator be funded;

5. Whether any group, such as cooperatives, should be exempt from participation in retail competition;

6. Whether to permit aggregation of small commercial and residential loads, and, if so, whether municipalities and other governmental entities may serve as aggregators;

7. Whether stranded costs should be recovered by utilities, and, if so:

(a) How should stranded costs be defined and calculated;

(b) Should all stranded costs be recoverable or just a portion of those costs;

(c) Over what period should stranded costs be recoverable; and

(d) Who should pay those costs;

8. Whether barriers, such as customer loyalty, access to financing, market power and load diversity, exist that will adversely affect the entry of other competitors into the market, and, if so, how such barriers should be addressed;

9. Whether entities such as generators, brokers, marketers and aggregators should be regulated, and, if so, what is the appropriate level of regulation;

10. What penalties should be imposed for deceptive trade practices and unfair competitive practices and who should be assigned to enforce those penalties;

11. What programs for the education of customers are needed to prepare customers to make informed decisions in a competitive retail environment, who should carry out those programs and how should the programs be funded;

12. During the transition to a competitive system, if price competition has not

developed sufficiently to protect customers, whether the Public Service Commission of Nevada should be authorized to regulate prices during the transitional period;

13. Whether environmental concerns merit the subsidization of energy produced using renewable natural resources;

14. Whether existing integrated resource planning should be continued; and

15. What related changes, if any, should be made to the structure of the Public Service Commission of Nevada or the Office of Advocate for Customers of Public Utilities; and be it further

RESOLVED, That the Legislative Commission, to the extent possible, is hereby directed to appoint to the committee six members, three of whom served during the 69th legislative session on the Senate Standing Committee on Commerce and three of whom served during the 69th legislative session on the Assembly Standing Committee on Government Affairs; and be it further

RESOLVED, That the Legislative Commission direct this committee to meet at least quarterly during the legislative interim; and be it further

RESOLVED, That the Legislative Commission shall submit a report of its findings and any recommendations for legislation to the 70th session of the Nevada Legislature.