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Briefing Paper

Energy Policy Issues and Legislative Options

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STATE OF UTAH

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Dear Legislator:

At its April 2001 meeting, the Legislative Management Committee asked the Office of Legislative Research and General Counsel to conduct research and publish briefing papers on several issues. This *Energy Policy Issues and Legislative Options* is one of the requested papers. It is written as a brief, straightforward explanation of Utah's current energy situation. Its principal aim is threefold: to provide a background on Utah's energy markets, with an emphasis on electricity; to provide an overview of Utah electricity market issues; and to discuss some legislative policy options regarding energy.

We hope you find this report useful as you make decisions regarding energy policy. As always, please feel free to contact me or any member of the writing team if you have questions.

Sincerely,

Michael E. Christensen

Michael E. Christensen
Director

**Energy Policy Issues
and
Legislative Options**

November 2001

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EXECUTIVE SUMMARY

The briefing paper is designed to assist legislators in considering energy issues and is divided into three sections.

I. Background on Utah's Energy Markets, Emphasizing Electricity

Utah is a net exporter of power. In recent history, consumption and production in Utah's energy markets have increased. Utah continues to produce more energy than it consumes.

Utah's electric market is a low-cost, growing market. Between 1980 and 2000, the annual amount of electricity generated in Utah tripled and consumption more than doubled. Utah's electricity prices are low in comparison to many other states and, after adjusting for inflation, 2000 electricity prices were significantly less than prices in 1980. Utilities operating in Utah's market include investor-owned, publicly owned, and cooperatively owned utilities.

Utah has taken initial steps in addressing energy issues. Examples of actions Utah has taken to address energy issues include the activities of the legislative Energy Policy Task Force and Governor Leavitt's statement of "Utah's Energy Policy."

Utah's electricity needs must be addressed in the context of regional and national issues. Electric markets have regional and national components as demonstrated by: electricity transmission occurring through regional systems; the effect of state energy-related activities on regional markets; and the possible impact of federal initiatives, including the National Energy Policy, on states and regions. Although 24 states have enacted legislation or issued regulatory orders that give consumers a choice of competitive electricity suppliers, at least 8 of the 24 states have delayed or suspended consumer choice. States' restructuring plans are diverse and states that have implemented plans have had varying results.

Transmission is critical to a strong electric market. The adequacy of the nation's transmission system is uncertain because use of the system is growing without significant additions or upgrades to that system. At certain days and times transmission constraints may exist in getting power in and out of Utah. Transmission within the state is generally adequate, but increased use of transmission lines without improvements may create congestion. The Federal Energy Regulatory Commission requires nondiscriminatory open-access to a utilities' transmission system and encourages the creation of regional transmission organizations that manage scheduling and other transmission related activities.

II. Selected Utah Electric Market Issues Raised by Stakeholders

PacifiCorp is proposing a corporate reorganization. PacifiCorp, the only investor-owned utility in the state, is subject to rate regulation in six states. This multi-jurisdictional environment, at least in part, has led PacifiCorp to propose a reorganization of the single corporation that provides regulated services into eight separate corporations: six state specific corporations that would provide distribution services; a corporation that would own generation and transmission assets; and a corporation that would provide services such as metering, billing, and employee management. Issues raised by PacifiCorp's proposal include: the possibility of rate impacts over time; whether the state can continue to accurately monitor the costs of providing services in Utah; the appropriateness of the corporate structure and decision-making process; the impacts on state jurisdiction; the possible effects on Utah's ability to meet future demand; the adequacy of the reorganization process; and the need, if any, for legislation.

Large industrial consumers have sought legislative action to meet their specific needs.

Utah legislative discussions have included the issue of whether or not to provide choice to large industrial consumers of electricity, while the remaining consumers continue to receive electricity under regulated rates. Examples of potential issues raised in providing choice to large industrial consumers include: whether effective markets will develop if utilities exercise undue market power; what access to the transmission system should be given to industrial consumers; and what should happen if an industrial consumer is unable to find affordable electricity in the market.

Other electricity- related issues have been raised with the Legislature including distributed generation; energy efficiency, and conservation; and the needs of rural consumers. Other issues that have been raised in legislative discussions include: distributed generation, *i.e.*, placing small-scale, consumer-operated power plants near the location where the electricity is used; energy efficiency or conservation efforts; reconfiguring service territories, particularly in rural areas; developing improved infrastructure; reevaluating siting and permitting processes; and ensuring reliability.

III. Legislative Options in Developing Policy Initiatives

The following, although not exhaustive, lists examples of possible legislative options. These options could be acted on alone or in combination with other options.

The Legislature could allow the executive branch to take the lead. The expertise developed by executive branch entities in addressing energy issues can provide guidance to the Legislature.

The Legislature could establish a state energy policy. Issues raised by the development of a legislative state energy policy include: what should be the scope of a policy; whether to establish a long-term or short-term plan; whether to establish mandates or provide incentives; who should implement the policy; and whether to establish the policy by statute, by resolution, or by requiring a legislative committee to develop and monitor a state energy policy.

The Legislature could address issues on a case-by-case basis. The approach does not require that every legislative action fit within a set state energy policy, but does require a balancing of the need for specific action with the need to analyze energy markets as a whole.

INTRODUCTION

The lights have stayed on in the West, but at what cost and how can they be kept on? As California and the West weather what some call the "perfect storm," questions remain about how to calm the storm and how to strengthen markets to prevent similar problems in the future. The electricity crisis has been called the perfect storm because it arguably arose from the confluence of many factors such as dry weather, unhealthy wholesale markets, lack of new generation and transmission, and increased demand.¹ Although Utah as a whole did not experience the dramatic price volatility experienced by California, Utah utilities were affected by the market events.

The recent market events highlight for Utah the critical importance of energy for the stability of state and national economies and the quality of our daily lives. Whether the Utah Legislature should establish or implement a state energy policy depends on how the Legislature wants to respond to changing energy markets. This briefing paper is designed to assist legislators in their consideration of energy issues. The analysis portion of the briefing paper is divided into three discussion sections.

Whether the Legislature should establish or implement a state energy policy depends on how the Legislature wants to respond to changing energy markets.

I. Background on Utah's Energy Markets. This section overviews Utah's energy markets, *i.e.*, electricity, coal, natural gas, and petroleum products, with an emphasis on the electric market. It highlights production, consumption, and pricing trends and briefly describes basic elements of the electric market. Appendix A provides a glossary of selected energy terms.

II. Selected Utah Electric Market Issues Raised by Stakeholders. This section provides examples of issues that have been discussed in Utah, such as a proposed reorganization of PacifiCorp's corporate structure, restructuring efforts in electric markets, and development of alternative generation sources.

III. Legislative Options in Developing Policy Initiatives. This section illustrates available options for legislative action, if the Legislature chooses to act in the energy area.

ANALYSIS

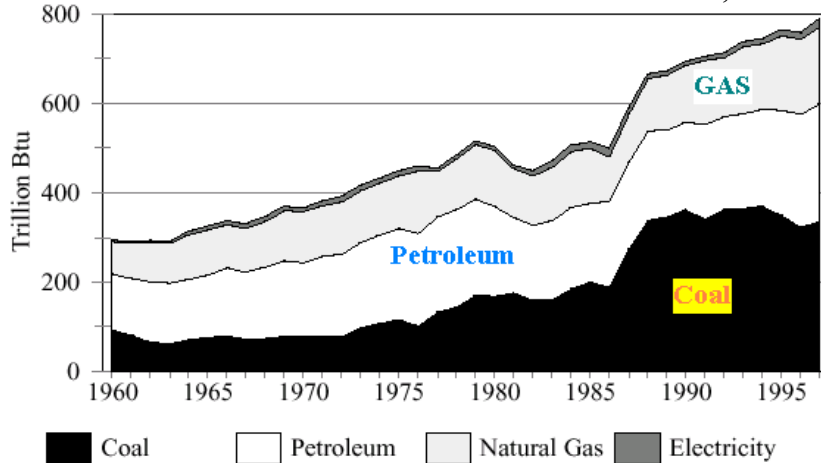
I. Background on Utah's Energy Markets

A beginning point in examining the need, if any, for a legislative response to energy market developments is an understanding of Utah's energy markets.

A. Utah's Energy Markets

In recent history, both consumption and production in Utah's energy markets have significantly increased.² As Figure 1 illustrates, since 1960, electricity, natural gas, and petroleum consumption have shown substantial growth. Although coal consumption has also grown since 1960, it has been relatively steady in recent years. It appears that, for the near future, Utah's total energy consumption may increase at a higher rate than population growth.³

FIGURE 1. UTAH ENERGY CONSUMPTION BY SOURCE, 1960-1997



Source: UTAH OFFICE OF ENERGY AND RESOURCE PLANNING, DEPT. OF NATURAL RESOURCES, UTAH ENERGY STATISTICAL ABSTRACT 19, Figure 1.5 (6th ed. 1999).

Production in Utah's energy markets almost doubled in the past two decades.⁴ As a result, despite Utah's increased energy consumption, Utah's energy industries continue to produce more energy than Utahns consume.⁵ For historical information regarding Utah's energy balance since 1980, see Table 1: Utah Energy Balance.

B. Electric Market Raises Key Issues

Utah's electric market is a primary focus of this briefing paper because rolling blackouts in California, sharp price increases, and shortage concerns throughout the nation have focused national attention on the importance of a stable electric market. Moreover, the electric market is evolving from a highly regulated industry into a less regulated, competitive industry, with electric market restructuring proposals being the subject of significant debate.

Policy analysis of the electricity market presents unique challenges because of electricity's unusual characteristics. Electricity generally must be generated and delivered at the moment it is needed because it cannot be stored. Electricity cannot be directed to go to a particular destination according to a contract because it follows the path of least physical resistance. Moreover, demand for electricity varies by time of day and season.⁶ Therefore, providing reliable electricity requires coordination and planning among a variety of market participants.

1. Trends in Utah's Electric Market

The following key facts highlight production, consumption, and price trends in Utah's electric market. For more detailed information regarding Utah's electric market between 1980 and 2000, see Table 2: Selected Energy Prices in Utah and Table 3: Generation/Production & Consumption of Electricity in Utah.

a. Generation/Production

The annual amount of electricity generated in Utah tripled between 1980 and 2000.⁷ Although Utah generation increased each year from 1995 to 1999, electricity generation in 2000, at 36,590 million kWh, was slightly lower than in 1999.⁸

b. Consumption

Electricity consumption in Utah more than doubled between 1980 and 2000.⁹ The portion of consumption attributable to each consumer class remained roughly the same in 2000 as in 1999, at approximately 28% residential, 34% commercial, and 34% industrial.¹⁰ The average annual increase in residential electricity consumption from 1980 through 2000 (3.4%) was higher than the average annual growth in Utah population over that same period (2.1%), showing significant growth in per capita consumption.¹¹ The Utah State Office of Energy and Resource Planning ("State Office"),¹² estimates that the increase in overall consumption will remain at or above 3% in 2001 and will continue to increase into the next decade.¹³

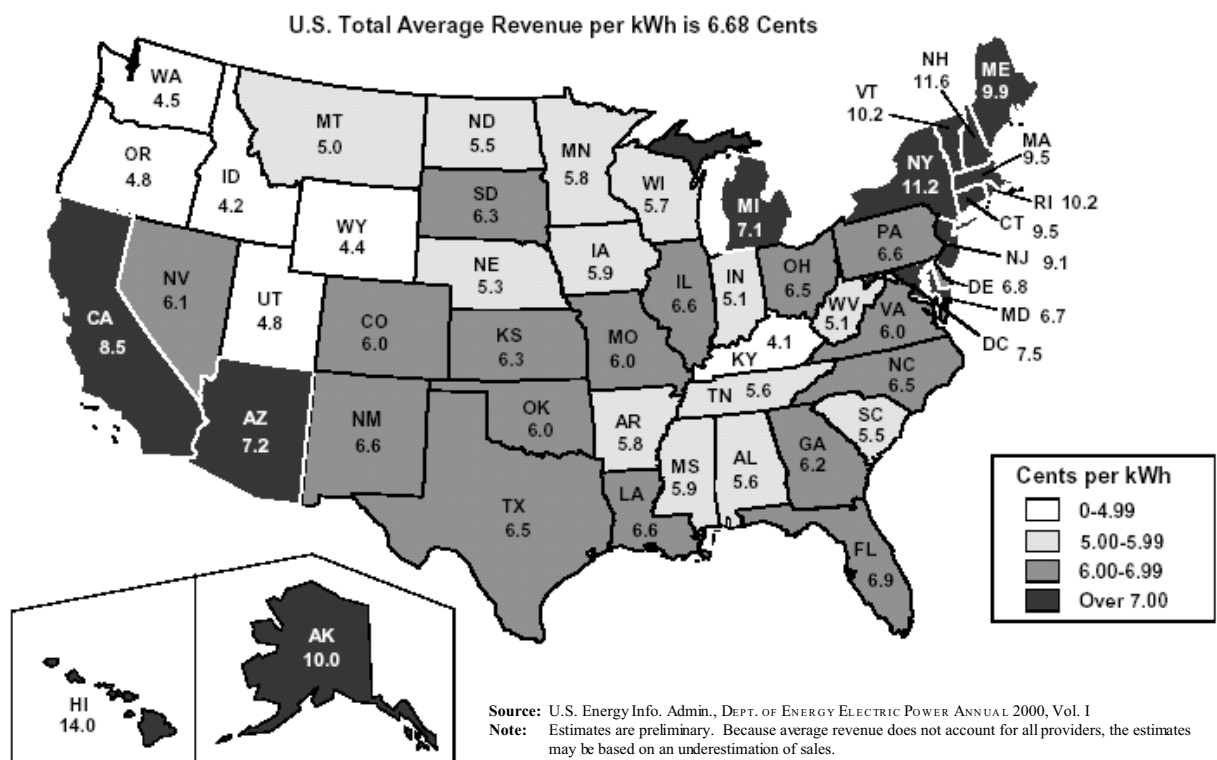
c. Price Trends

Electricity prices in 2000 were only slightly higher than prices in 1980.¹⁴ However, 2000 electricity prices were below prices of the late 1980s and, after adjusting for inflation, were significantly less than electricity prices were in 1980.¹⁵

After adjusting for inflation, 2000 electricity prices were significantly less than electricity prices were in 1980.

In the summer of 2000, PacifiCorp and some of Utah's municipal electric utilities were unable to meet consumers' electricity needs through their own generation or through long-term contracts with other producers, requiring these utilities to spend millions of dollars to buy "spot" wholesale power at prices that were 10 to 20 times the historical average.¹⁶ In September 2001, the Public Service Commission ("PSC") increased PacifiCorp's annual revenue requirement by \$40.5 million (an increase of about 5%), which generally resulted in higher rates for consumers.¹⁷ However, the cost of electricity for Utah consumers is low in comparison to many other states. See Figure 2.

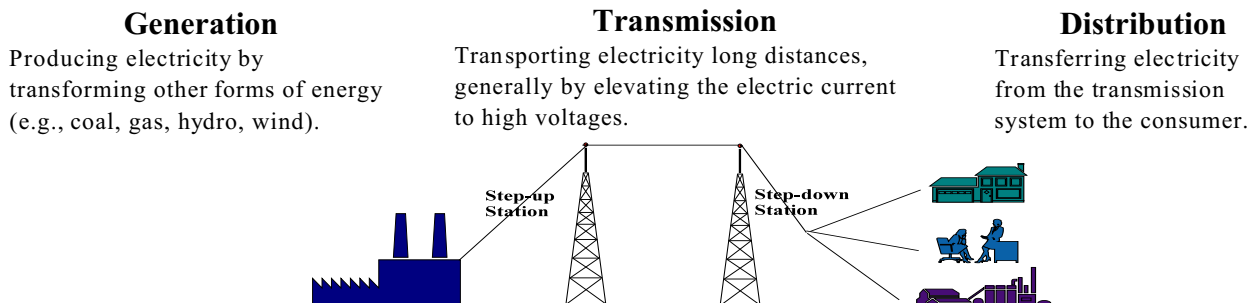
FIGURE 2. 2000 ESTIMATED AVERAGE RETAIL PRICE



2. Functions Within Electric Market

The electric industry can generally be divided into three functions.

FIGURE 3. FUNCTIONS WITHIN ELECTRIC MARKET



3. Electricity Providers

The three basic types of utilities operating in Utah are: (1) investor-owned; (2) publicly owned (generally municipal); and (3) cooperatively owned.¹⁸ Figure 4 lists major Utah utility related entities by type of utility. Map 1: Electric Service Territories in Utah, overviews service territories within the state. Other providers in Utah, which primarily serve wholesale markets, include Intermountain Power Agency, Desert Power Electric Cooperative, and Western Area Power Administration (marketer for the Department of Energy).

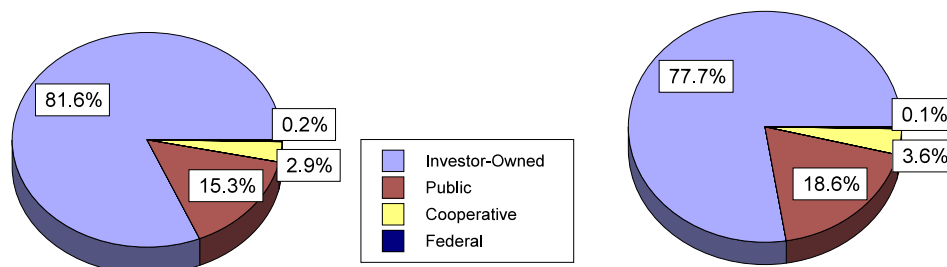
A 1999 survey indicates that 74% of electric utility retail sales in the nation were by investor-owned utilities, 15% were by publicly owned utilities, and 9% by cooperatives.¹⁹ When compared to these national figures, Utah's sole investor-owned utility, PacifiCorp, plays a larger role in Utah's market when measured either by the percentage of retail sales (81.6%) or by the percentage of revenue earned from retail sales (77.7%). See Figure 5.

Figure 4. Utah: Key Utility Related Entities



FIGURE 5. PERCENTAGE OF RETAIL SALES IN UTAH BY TYPE OF UTILITY

Percentage of Utah Retail Sales for 1999 Percentage of Revenue from Utah Retail Sales for 1999



Source: U.S. ENERGY INFO. ADMIN, DEPT. OF ENERGY, Electric Sales and Revenue 1999, Table 9, 10.

4. Electricity Consumers

There are three basic classes of electricity consumers in Utah.

Residential: a residence consuming electricity primarily for household purposes, such as heating, air conditioning, lighting, refrigeration, cooking, and clothes drying (*e.g.*, single, multifamily)

Commercial: a small business generally not engaged in transportation or manufacturing (*e.g.*, school, military base, hospital, hotel, laundry, retail, services, nonprofit entity, government)

Industrial: a large business or industry (*e.g.*, manufacturing, mining, agriculture, university)

5. State and Federal Regulation of Electric Utilities

Both the federal and state government play a role in the regulation of traditional electric utilities. In general, interstate activities are regulated by the federal government and intrastate activities are regulated by the state.²⁰

Examples of Areas Generally Subject to Federal Regulation

Wholesale Rates
Licensing of Hydroelectric Facilities
Nuclear Safety and High-level Nuclear Waste Disposal
Environmental Regulation
Transmission

a. State Regulation

How a utility is regulated often depends on the type of the utility and on what stage of the electrical process is being regulated, *i.e.*, generation, transmission, or distribution. The following is a brief overview of Utah's regulation of electric utilities and of the ratemaking process.

An investor-owned utility is regulated on both a state and federal level. States generally regulate generation and distribution of investor-owned utilities. In Utah, PacifiCorp is regulated by the PSC. The Division of Public Utilities provides investigative services to the PSC, appears before the PSC, and is directed to act in the public interest by accounting for both the interests of consumers and the financial integrity of public utilities. The Committee of Consumer Services advocates before the PSC for residential and small business consumers, including agricultural consumers.

Municipal power providers are not currently regulated by the state. At present, the state generally does not regulate the operations or rates of municipal utilities.²¹ Instead, these utilities are regulated by the local governing body.

Rates charged by rural electric cooperatives are generally not regulated by the state. By statute, a rural electric cooperative can set its own rates, subject to PSC review under some circumstances.²² However, rural electric cooperatives are otherwise subject to state regulation.

Local government may require approval of the siting of electric facilities. While state and federal agencies approve permits for a generation or transmission facility, determining

the location of a facility, called "siting," is primarily a market-driven decision, with local government approval often necessary to meet zoning requirements, economic development plans, or other conditions under local jurisdiction.

b. Ratemaking Process

A key element of the PSC's regulation is the setting of just and reasonable electricity rates.²³ Utah electric utility rates can be described as cost-based rates because they are based on the costs (including a return on investment) of providing services within the state. The ratemaking process is generally divided into three stages.

Determine revenue requirement. Based on a specific test year, the PSC determines the amount of revenue PacifiCorp needs in order to have a reasonable opportunity to recover costs (e.g., capital costs, operation and maintenance, fuel costs, and administrative costs) and to earn a reasonable rate of return on investment.

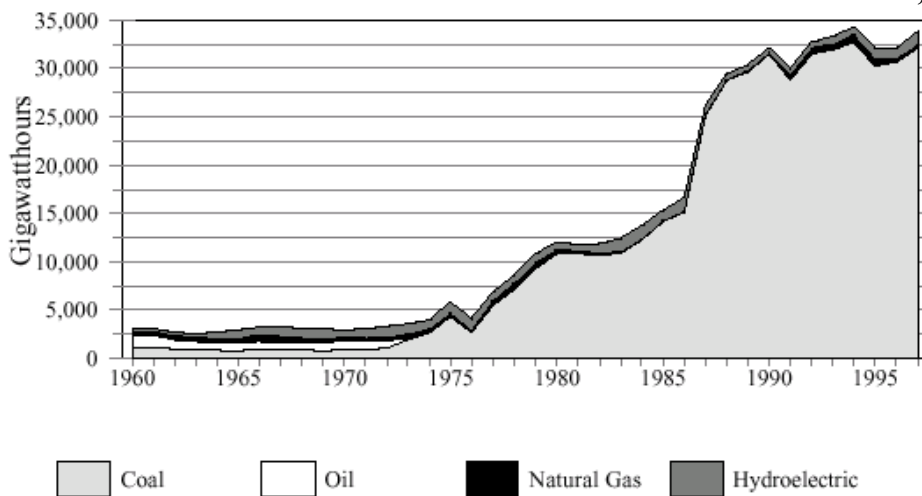
Spread responsibility for the revenue requirement among consumer classes. The revenue requirement, once determined, is divided among the consumer classes primarily on the basis of the cost of providing service to the different classes.

Design rates for each consumer class. Once the revenue responsibility is spread among the consumer classes, a rate schedule is developed to provide for the collection of each consumer class's share of the revenue requirement.

C. Utah Electric Market's Relationship to Other Energy Markets

Electricity is generally produced from other fuel sources, which in Utah is most commonly coal.²⁴ See Figure 6. These fuel sources vary as to their importance to the electric market and as to their market strengths and future needs.

FIGURE 6. UTAH NET GENERATION OF ELECTRICITY BY ENERGY SOURCE, 1960-1997



Source: UTAH OFFICE OF ENERGY AND RESOURCE PLANNING, DEPT. OF NATURAL RESOURCES, UTAH ENERGY STATISTICAL ABSTRACT 130, Figure 5.2 (6th ed. 1999).

1. Coal is the Primary Fuel Source for Generation in Utah

Coal is responsible for more than 90% of electricity generation in Utah.²⁵ Electric utilities consume the bulk of Utah's coal production.²⁶ As of January 2001, coal was the least

expensive fuel consumed in generating electricity.²⁷ During 2000, coal prices increased only marginally, in contrast to large increases in crude oil and natural gas prices.²⁸ The following provides highlights of Utah's coal industry. For more detailed information regarding Utah's coal market between 1980 and 2000, see Table 2: Selected Energy Prices in Utah and Table 4: Supply & Consumption of Coal in Utah.

a. Production

Utah annual coal production doubled between 1980 and 2000.²⁹ Although in 2000, Utah had its second highest production year at 26.9 million tons,³⁰ the State Office forecasts that 2001 production will decrease to approximately 25.3 million tons and that Utah coal production will stay at this same level over the next five years.³¹ Utah's coal mines are the most productive underground mines in the United States.³²

b. Consumption

Utah annual coal consumption more than doubled between 1980 and 2000.³³ Electric utilities consume most of Utah's coal production, followed by industrial consumption.³⁴

c. Price Trends

Although coal field prices increased in the early 1980s, field prices have generally declined since 1985 and over the last four years have been fairly flat at approximately \$17 to \$18 per ton.³⁵ However, the State Office predicts that coal field prices may increase in the future.³⁶

2. Natural Gas is a Small But Growing Fuel Source for Generation in Utah

Less than 2% of electricity generated in Utah uses natural gas as its primary fuel source, although the use of natural gas in Utah electricity generation has substantially increased over more than a decade.³⁷ Natural gas also relates to electricity as a market competitor because natural gas and electricity are alternative fuel sources for activities such as heating and cooking. The following provides highlights of Utah's natural gas industry. For more detailed information regarding Utah's natural gas market between 1980 and 2000, see Table 2: Selected Energy Prices in Utah and Table 5: Production & Consumption of Natural Gas in Utah.

a. Production/Reserves

From 1980 to 2000, marketed production of natural gas in Utah increased from nearly 50,000 million cubic feet to almost 270,000 million cubic feet.³⁸ The State Office forecasts that coalbed methane projects may help boost statewide production over the next few years and expects that natural gas production in 2001 will increase, particularly if natural gas prices remain high.³⁹ Utah natural gas reserves increased by more than 30% between 1998 and 1999.⁴⁰

b. Consumption

During the same period from 1980 to 2000, consumption of natural gas did not increase at the same rate as did production, with consumption increasing by less than 50,000 million cubic feet.⁴¹ In 2000, Utah's consumption of natural gas exceeded 160,000 million cubic feet.⁴²

c. Price Trends⁴³

The yearly average field price for natural gas in Utah fluctuated between \$1.14 and \$3.42 per thousand cubic feet during the two-decade period of 1980 and 2000.⁴⁴ The average field price in 2000, estimated at \$3.42, was at a 15-year high.⁴⁵ The State Office forecasts that natural gas wellhead prices will likely remain above \$2.80 per thousand cubic feet in 2001.⁴⁶ Whether the price of natural gas, after adjusting for inflation, increased or decreased between 1980 and 2000 depends on the class of consumer.⁴⁷ For example, in comparing 2000 prices with 1980 prices, after adjusting for inflation, commercial and industrial consumers paid less in 2000 than in 1980, but residential consumers paid more for natural gas in 2000 than in 1980.

During 2000, wholesale prices paid for natural gas delivered to Questar Pipeline doubled,⁴⁸ and Questar Gas received rate increases in excess of \$75 million as part of a "gas-cost adjustment" filing to cover natural gas supply costs and a general rate increase.⁴⁹ In January 2001, Questar had a rate increase in excess of \$167 million.⁵⁰ Recently, however, wholesale prices have dropped substantially, and in October 2001, the PSC granted Questar Gas' request for a rate decrease of almost \$111 million on an annualized basis.⁵¹

3. Fuel Oil is an Infrequent Fuel Source for Generation in Utah

Fuel oil, a petroleum product derived from crude oil, is infrequently used as a fuel source for generation of electricity in Utah.⁵² If fuel oil is used, most commonly it is used as a start-up fuel for generators. However, fuel oil can also be used as a primary fuel source when using natural gas or coal is impractical because of factors such as high cost. The following provides highlights of Utah markets for petroleum products. For historical information regarding these markets, see Table 2: Selected Energy Prices in Utah and Table 6: Supply, Refining & Consumption of Petroleum Products in Utah.

a. Production/Reserves/Exploration/Refining

For the period of 1980 to 2000, Utah crude oil production has generally declined with a high of 41,144 thousand barrels in 1985 and 2000 production at 15,640 thousand barrels.⁵³ However, the decline has slowed significantly in recent years.⁵⁴ Utah production is associated with "mature fields" that have passed their peak, and the State Office forecasts that production will continue to decline by 5-10% per year into the future.⁵⁵ Yet, Utah's crude oil reserves are near historical highs,⁵⁶ and recent years have seen an increase in exploration activity.⁵⁷ Although Utah refineries have operated close to capacity for several years, they have increased their output to meet the growing Utah market.⁵⁸ Utah production is a decreasing source of supply for Utah refineries.⁵⁹

b. Consumption

Consumption of petroleum products in Utah grew between 1980 and 2000.⁶⁰ The rate of growth of demand, as illustrated by an average annual increase of 2% to 4% (depending on the petroleum product) during the 1990s, outpaced the rate of growth in supply.⁶¹ While current availability of petroleum products in Utah is adequate, the State Office predicts a "tightening of the market" over the next decade.⁶²

c. Price Trends

Prices for crude oil and refined petroleum products have fluctuated in Utah during the period from 1980 to 2000.⁶³ The year 2000 proved to be a dynamic year with wellhead prices for crude oil ranging between \$18 to \$30 per barrel.⁶⁴ Average crude oil prices in 2001 should stabilize, but remain high, settling around \$29 a barrel.⁶⁵

D. Utah's Electricity Needs as Part of Regional Markets

Providing reliable electrical power in sufficient quantities is a highly interdependent, regional process. Therefore, Utah's ability to address market concerns is affected by factors outside of Utah's borders and often beyond its control. For example, transmission occurs through regional systems regulated by the Federal Energy Regulatory Commission ("FERC") and restructuring decisions of other states affect the Western market in which Utah's utilities operate.

1. Transmission

Transmission is the movement of electricity over interconnected transmission lines and equipment from the point where electricity is generated to the point where it is transformed for delivery to consumers or other electric systems.⁶⁶ The transmission system within the United States has developed into three major power grids.⁶⁷ The major grids have high voltage connections structured to allow the transfer of electricity from one part of the grid to another so that interconnected utilities within each grid can buy and sell power in the wholesale market.

The transmission grids are further divided into regional reliability councils (volunteer organizations that address issues such as reliability) and smaller geographic areas (generally reflecting similar load patterns).⁶⁸ Utah falls within the Western interconnection, sometimes called the "Western grid"; the regional reliability council called the "Western Systems Coordinating Council"; and the general load area called the "Northwest Power Pool."⁶⁹ For an overview of these areas, see Map 2: Overview of Selected Regions of the Transmission System Within the United States.

The adequacy of the nation's transmission system is uncertain because the overall use of the transmission system is growing without significant additions or upgrades to that system.

a. Transmission Capacity Constraints in General

The amount of power that can be transmitted on a transmission line is limited by the physical capacity of the line. The amount of power transmitted can also be constrained because of scheduling or contract issues, such as limitations resulting from the commitment of transmission line capacity to meet the needs of the transmission line owner's own retail consumers or to meet long-term contractual commitments, or the lack of a contract between the transmission line owner and the person wanting to transmit the electricity.

The adequacy of the nation's transmission system is uncertain because overall use of the transmission system is growing without significant additions or upgrades to that system.⁷⁰ Without adequate transmission and access to wholesale markets, retail competition may be hindered because electricity cannot be transmitted freely in the market. Constraints in

transmission may aggravate issues such as whether a transmission line owner could unfairly control prices by exercising market power or by limiting entry of new providers into the market.

b. Regional Transmission Organizations

In part to allow for the development of competitive markets, FERC requires electric utilities to provide nondiscriminatory open-access to the electric utilities' transmission system and encourages the creation of regional transmission organizations ("RTO") that can manage scheduling and other transmission related activities.⁷¹ An RTO can be an independent transmission system operator, an independent transmission-owning company, or some hybrid. FERC requires utilities to make filings related participation in RTOs and has established minimum characteristics and functions for RTOs.

c. Utah Transmission Issues

Just as transmission congestion is an issue throughout the nation, the Western grid in which Utah is located has experienced transmission congestion.⁷² Transmission constraints within the Western grid at times create difficulties in transmitting power into and out of Utah. Transmission within the state is generally adequate to address current usage, but increased traffic on transmission lines without improvements to the transmission system in Utah may create future congestion for transmission within the state.⁷³ In addition, the location of future generation will impact the need for transmission expansion to serve load growth within the state.⁷⁴ Major transmission paths into and within Utah are illustrated in Map 3: Overview of Major Transmission Lines Into and Within Utah.

Many utilities within Utah may participate in "RTOWest," an RTO being formed through a coalition of utilities in the Northwest United States and British Columbia and that geographically includes all or a portion of Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.⁷⁵ FERC is encouraging the ultimate formation of an RTO that covers the entire West.⁷⁶ The process of developing an RTO in which Utah will be located is ongoing; and therefore, it is unclear how the formation of an RTO will ultimately affect any Utah related transmission issues.

2. Other States' Electric Market Restructuring Efforts

Nearly every state, including Utah, has examined whether to allow retail competition in the electric industry. For example, in 1997, the Utah Legislature created the Electric Deregulation and Customer Choice Task Force, now known as the Energy Policy Task Force, to examine possible restructuring of Utah's electric market.⁷⁷ As of October 2001, 24 states have enacted legislation or issued regulatory orders that allow retail direct access to competitive electricity suppliers.⁷⁸ However, 8 of the 24 states have subsequently delayed or suspended the implementation of direct retail access.⁷⁹

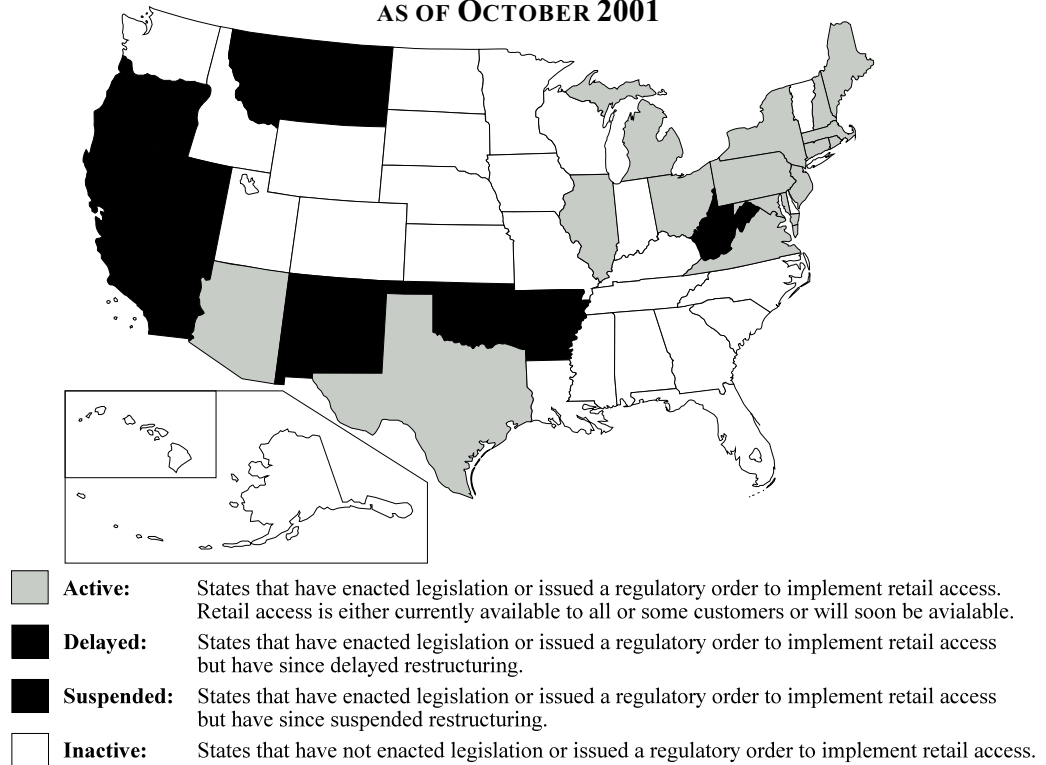
It may be too early for Utah to draw conclusions from restructuring efforts in other states concerning whether and how to pursue restructuring of the Utah electric market.

The restructuring plans adopted by the 24 states vary greatly. Some states allow competition to begin at a certain date, while others phase in competition over a number of years. Some states grant broad authority to the state utility commission to develop and implement a restructuring process, while others provide greater detail

in statute. Of the 24 states, Oregon may be the most important for Utah to watch because Oregon is within the same general electric market as Utah and because PacifiCorp is a major power provider in both Oregon and Utah.

States that have implemented a restructuring plan have had varied experiences.⁸⁰ California may be the best known example of a state that has had market problems after implementing its restructuring plan.⁸¹ Recently, the California Public Service Commission voted to discontinue consumer choice of providers.⁸² In contrast, Pennsylvania, is cited as a leader in successfully implementing restructuring.⁸³ However, between April and July of 2001, Pennsylvania experienced a significant drop in consumers electing alternative providers.⁸⁴

FIGURE 7: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY AS OF OCTOBER 2001



Source: U.S. Energy Info. Admin., DEPT. OF ENERGY, MAP: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY (visited Oct. 26, 2001).

Because state restructuring plans vary in how they are structured and most have not been fully implemented, it is unclear what the actual results of restructuring will be or whether certain restructuring models are more effective. Therefore, it may be too early for Utah to draw conclusions from restructuring efforts in other states concerning whether and how to pursue restructuring of the Utah electric market.

E. Utah's Electricity Needs in Relationship to the National Energy Policy

On May 16, 2001, Vice President Cheney presented the National Energy Policy ("National Policy") which was requested by President Bush to promote dependable, affordable, and environmentally sound energy in the future.⁸⁵ Long-term energy studies cited in the National Policy indicate that over the next 20 years national energy consumption will increasingly outpace national energy production levels if production grows at the same rate it grew during the last ten years.⁸⁶ The National Policy establishes three governing principles, five general goals, and numerous recommendations for action.⁸⁷

- Three principles:**
- create a long-term comprehensive strategy;
 - advance new, environmentally friendly technologies to increase supplies and encourage cleaner, more efficient consumption; and
 - raise the living standards by integrating the nation's energy, environmental, and economic policies.

- Five goals:**
- modernize conservation;
 - modernize energy infrastructure;
 - increase energy supplies;
 - accelerate environmental protection and improvement; and
 - increase the nation's energy security.

1. Federal Legislation

In August 2001, the United States House of Representatives passed HR 4, "Securing America's Future Energy Act of 2001" ("SAFE Act"), which contains a significant portion of the National Policy's recommendations.⁸⁸ In light of the current political and economic climate, it is unclear when the United States Senate will act on implementing legislation.⁸⁹ Several other bills have been filed in the energy area including HR 1647, "Electricity Emergency Relief Act," which would facilitate the generation, transmission, and sale of electric power in an electricity emergency;⁹⁰ and S 597 "Comprehensive and Balanced Energy Policy Act of 2001," which would provide a wide-ranging set of energy policy initiatives.⁹¹

2. Potential Impact of National Policy on Utah

Because federal legislation has not been finalized, the actual effects that any legislation implementing the National Policy will have on Utah's energy market are unknown. However, an example of an area where the National Policy, as reflected in the SAFE Act, may affect Utah is the encouragement of clean coal as a generation fuel source.⁹² As discussed above, coal is a major fuel source for the generation of electricity in Utah. The SAFE Act would require assessment of new clean coal technology and preparation of a 10-year research and development plan.⁹³ The SAFE Act would also appropriate federal funds to facilitate the development of clean coal technology.⁹⁴ Although the SAFE Act does not expressly direct funds to Utah, any development of clean coal technologies that result from federal legislation would likely benefit the continued production of Utah's high-Btu, low-sulfur coal.⁹⁵

F. State Energy Policies

Just as the Bush administration formed a national energy policy, many states have responded to critical energy issues through establishing energy policies. The following discusses Utah's and other states' efforts to examine and establish state energy policies.

1. The Governor's Statement of Utah's Energy Policy

Utah has responded to energy market developments, as illustrated by the activities of the legislative Energy Policy Task Force⁹⁶ and Governor Leavitt's issuance this year of "Utah's Energy Policy," a copy of which is found in Appendix C. The overall objective of the Governor's state energy policy is that Utah will have reliable, affordable, sustainable, and clean energy. The

policy sets out economic priorities, governing principles, projections of future energy needs, and an agenda. The executive branch has begun to implement this policy. For example, a State Energy Coordination Team has been created and is designed to develop state positions on energy issues, streamline the regulatory permitting process, promote inter-departmental cooperation, and sponsor periodic outreach meetings with stakeholders.⁹⁷

The overall objective of the Governor's state energy policy is that Utah will have reliable, affordable, sustainable, and clean energy.

2. Other States' Energy Policies

Other states have adopted energy policies that vary greatly both in content and in how and by whom they were adopted. In some states, the governor has adopted a written energy policy,⁹⁸ appointed an energy cabinet,⁹⁹ or created an executive branch task force.¹⁰⁰ In other states, the legislature has adopted an energy policy in statute¹⁰¹ or created a task force or study committee to consider energy policy formulation.¹⁰² Some energy policies are brief, providing a general statement of intent,¹⁰³ while others are detailed, covering a broad range of energy topics.¹⁰⁴

II. Selected Utah Electric Market Issues Raised by Stakeholders

As part of the Legislature's study of energy issues, stakeholders including utilities, consumers, and regulators have raised specific proposals or issues related to the ongoing electrical needs of the state. The following discusses examples of proposals and issues raised by stakeholders.

A. PacifiCorp's Proposal to Reorganize its Corporate Structure

An unusual component of Utah's electricity market is that PacifiCorp, which is the sole investor-owned utility serving retail consumers in the state, is subject to rate regulation in six states. The multi-jurisdictional environment in which PacifiCorp operates primarily began with the merger of Utah Power & Light and Pacific Power & Light in 1989 and continued after the merger of PacifiCorp with ScottishPower in 1999. The multi-jurisdictional environment raises questions for PacifiCorp, consumers, policymakers, and others. Also, this multi-jurisdictional environment, at least in part, has led PacifiCorp to propose a corporate reorganization.

1. Examples of Issues Raised by Multi-Jurisdictional Environment

An issue raised but not fully resolved at the time of Utah Power & Light's merger with Pacific Power & Light was the allocation of costs among the ratepayers of the various states.¹⁰⁵ As part of the merger approval process, PacifiCorp assumed the risk that if states use different allocation methods in setting rates, PacifiCorp may not recover all of its costs.¹⁰⁶ Currently in rate hearings all six states use the same cost allocation method, based on the load within each state, to determine a state's portion of PacifiCorp costs associated with resources developed after the 1989 merger (post-merger costs). However, states have used different methods for allocating PacifiCorp's costs such as capital costs or operation and maintenance that relate to resources developed before the 1989 merger (pre-merger costs).¹⁰⁷ Differences in allocation of pre-merger costs raise an issue of whether any gap in cost recovery may affect the long-term strength of PacifiCorp.

PacifiCorp must also adapt to the varying approaches states have taken with regard to potential restructuring of the retail electric market. State differences in allowing retail competition may affect a variety of issues including whether PacifiCorp should recover the costs of building new generation facilities through cost-based rates or through market prices. For example, Oregon (which anticipates providing choice to some of Oregon's retail consumers in 2002) will over time require PacifiCorp to recover the costs of new resources based on market pricing.¹⁰⁸ In contrast, under Utah's current environment, the PSC would likely require PacifiCorp to cover the costs of a new regulated facility through cost-based rates. Restructuring also raises issues concerning how to allocate any of PacifiCorp resources that were previously dedicated to serve retail load under regulation but are freed-up because some of PacifiCorp's consumers move to alternative providers. Different states may adopt different positions as to what PacifiCorp is to do with these freed-up resources.

2. Corporate Reorganization Proposal of PacifiCorp

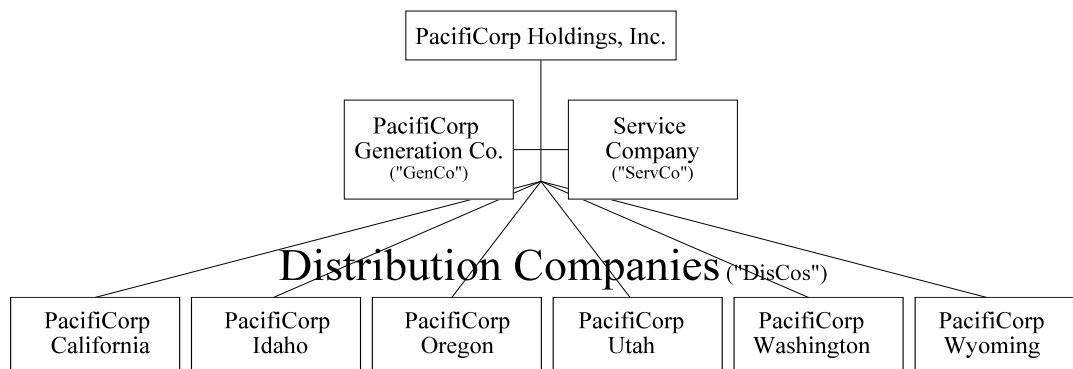
PacifiCorp has filed or will file with the public service commission of each state an application seeking approval of a reorganization of PacifiCorp's corporate structure to address issues such as those raised by the multi-jurisdictional environment.¹⁰⁹ PacifiCorp's stated objectives include clarifying roles and responsibilities in respect to future generation resources; achieving permanent consensus on each state's entitlement to the value of PacifiCorp's existing generation resources; providing states with the ability to independently implement state energy policies; and preserving reliability, efficiency, and safety.¹¹⁰ The corporate reorganization and initial contracts are currently subject to approval by the state public service commissions. If approved by the PSC, the proposed reorganization of PacifiCorp would have a significant impact on the electric market of this state for decades to come. Therefore, if the reorganization proceeds, it is important that it take into account the best interests of all stakeholders.

A proposed reorganization of PacifiCorp would have a significant impact on the electric market of this state for decades to come. Therefore, if the reorganization proceeds, it is important that it take into account the best interests of all stakeholders.

a. An Overview of the Proposal

Under PacifiCorp's proposal, the single corporation that provides regulated services would be divided into eight separate corporations: six corporations that would provide distribution services in a single state ("DisCos"), a corporation that would own generation and transmission assets ("GenCo"), and a corporation that would provide services such as metering, billing, and employee management ("ServCo").¹¹¹

FIGURE 8: STRUCTURE AFTER PACIFICORP'S PROPOSED REORGANIZATION



The reorganization would alter the regulatory framework by focusing state regulation on the state DisCos instead of the PSC's current regulation of PacifiCorp as a vertically integrated utility. FERC would have primary regulatory authority over the GenCo, and the Securities Exchange Commission would have primary regulatory authority over the ServCo.

Each state DisCo would have the obligation to provide electricity to retail consumers to the extent a public utility is required by state law to provide electricity to retail consumers. Initially, the GenCo would provide electricity and the ServCo would provide services to the state DisCos under contract. The contractual arrangement between the GenCo and DisCos would consist of two contracts, a short-term five year contract and a long-term contract. A DisCo would account for electricity needs not covered by the GenCo contracts through purchases from third parties or from the GenCo or through building new generation paid by ratepayers of the state whose DisCo elects to build the new generation. The ServCo contract would allow annual reevaluation of services provided by the ServCo. Over time, the DisCos could contract with third parties for the services initially provided by the ServCo.

At the beginning of the GenCo contracts, the Utah DisCo would be given the right, at its option, to receive a specific portion of the GenCo's electricity generation. Similarly, the Utah DisCo would be obligated to pay an amount designed to reflect the cost-based rates paid by Utah ratepayers in proportion to Utah's interest in PacifiCorp's generation and transmission facilities. However, as thermal generation plants fully depreciate, the contract would require that the depreciated plant be auctioned and both the amount of electricity that the Utah DisCo would have a right to purchase and the amounts the Utah DisCo would be obligated to pay would be reduced to reflect that the plant is no longer a dedicated resource under the contract. The end result is that, as the contract proceeds, because the amount of power the Utah DisCo would be guaranteed to receive from the GenCo at prices reflecting current cost-based rates is reduced, the Utah DisCo would be increasingly subject to market prices or required to build its own generation.

b. Legislative Role and Potential Issues Raised by the Proposal

Although Utah statute does not expressly require legislative approval for the proposed corporate reorganization to take place, the Legislature may elect to act in response to issues raised by the proposal or to the proposal's effect on policy issues. There is also an issue of timing related to the determination of whether or not the Legislature should respond. If the reorganization is approved by the PSC and implemented prior to legislative action, legislative options may be limited because the Legislature will be dealing with contracts between private entities, several of which may not be subject to regulation by the state. The following discusses how the reorganization proposal may affect policy issues and provides examples of issues raised by the proposal.

The corporate reorganization may affect policy issues that have been subject to legislative discussion in the past. For example, in discussing whether the Legislature should allow any or all consumers to choose their electric service providers, the issue of ratepayers' obligations to pay for stranded costs or to receive stranded benefits (accounting for differences in the recovery of costs under regulation as compared to recovery of costs under competition) has been raised. The division of PacifiCorp assets and obligations under the proposed reorganization could determine Utah ratepayers' interest in PacifiCorp assets, including regulatory assets, prior to the Legislature deciding whether to allow consumer choice in Utah. Therefore, although issues such as who is responsible for any stranded costs or benefits may still exist, the determination of Utah's portion

of any stranded costs or benefits related to PacifiCorp would arguably have been determined by the corporate reorganization and it would be difficult for the Legislature to alter this allocation.

In addition to the corporate reorganization's likely impact on general energy policy issues, examples of issues specific to the PacifiCorp proposal include:

- **impacts on rates paid by consumers**, such as whether the divided corporate structure will affect costs and consequently rates paid by consumers; and whether after the reorganization it will be more difficult to accurately monitor costs and profits of the corporations providing services in Utah and consequently more difficult to set rates paid by consumers;
- **appropriateness of corporate structure and decision-making**, such as whether it is possible to keep the operations of PacifiCorp integrated, while allowing individual state DisCos to make independent policy decisions;
- **adequacy of state regulatory jurisdiction of electric services in the state**, such as whether Utah will continue to have adequate oversight of rates charged to consumers in the state and of the quality of electric services;
- **assurances that Utah's future needs will be met**, such as whether the continual reductions in Utah's right to receive a portion of the GenCo's generation at rates reflecting cost will unduly subject Utah to market forces in obtaining necessary electricity to meet future demand;
- **adequacy of the reorganization process**, such as whether the division of assets, debt, and other obligations is fair as compared to the division of assets, debt, and obligations designated for GenCo, ServCo, or other state DisCos; and
- **the need to address legislative or statutory issues**, such as whether to address statutes affected by the proposal or whether to modify the regulation of market participants in light of the proposed reorganization.

B. Concerns of Large Industrial Consumers

Large industrial consumers have been active in the electrical restructuring debate throughout the nation and in Utah. In recent years, a focus of various Utah legislative proposals has been to provide choice to large industrial consumers, while having the remaining commercial and residential consumers continue to receive electricity under regulated rates.¹¹² Some states that have pursued restructuring legislation have provided varying opportunities for choice, based on consumer classification.¹¹³

A variation on providing choice to large industrial consumers is to facilitate partnering among large industrial consumers, utilities, and third parties in the building of new generation facilities.¹¹⁴ Consumers could participate through long-term contracts or actual capital investment in the new generation facilities. Access to the transmission and distribution system of the incumbent utilities may be critical to any proposal that allows an industrial consumer to participate in new generation resources because an industrial consumer may need access to transmission to receive the electricity from the new generation facilities.

As of 2001, the Legislature has not adopted any proposals providing industrial consumers choice in electricity service providers. Examples of issues raised in the debate of legislative proposals include:

- whether PacifiCorp could exercise market power in a way that industrial consumers would be unable to find affordable electricity from sources other than PacifiCorp;
- what options are available if industrial consumers leave PacifiCorp's system and then are unable to find affordable electricity in the market;
- what would be the rate impacts, if any, on other consumers if industrial consumers were outside of PacifiCorp's system;
- what would be the impact on the availability of resources to serve consumers who remain with PacifiCorp if industrial consumers leave PacifiCorp's system; and
- whether industrial consumers served by rural electric cooperatives or municipalities should be affected, and if so how.¹¹⁵

C. Distributed Generation

For many years, increasing the generation capacity of the electric power grid was typically accomplished by building a large power plant. An alternative, called "distributed generation," is to place numerous, small-scale, consumer-operated power plants throughout the power grid. Distributed generation is located at or near where the electricity is used and may be as simple as a solar panel for a single-family residence, or as extensive as a power plant constructed by an industrial consumer to serve its own needs. Whether or not the development of distributed generation is beneficial to the electric market is subject to differing views based on a person's perception of how distributed generation would develop over time. For example, proponents assert that distributed generation would bring environmental benefits because many distributed generation technologies, such as solar panels, produce little or no emissions.¹¹⁶ In contrast, opponents assert that distributed generation would create environmental harms because the cheapest distributed generation technologies, such as those powered by diesel and gas engines, produce more pollution than a large, central station power plant.¹¹⁷ Recent legislative debate in Utah surrounding distributed generation has focused on facilitating consumer investment in distributed generation resources through net metering and tax credits.

1. Net Metering

Net metering creates an economic incentive to participate in distributed generation. Net metering allows a consumer with grid-connected generation to send to the grid the electricity not used by the consumer, spinning the electricity meter backwards and offsetting the electricity that the consumer purchases from the utility. Under net metering programs of some states, the utility is also required to pay the consumer for consumer-generated electricity that exceeds the amount of electricity that the utility supplies to the consumer. Legislation is not always necessary to allow net metering, but may be required to ensure that all consumers of rate regulated utilities have access to a net metering program. As of May 2001, 33 states have net metering laws, including all Western states except Utah.¹¹⁸ In September 2001, the Public Utilities and Technology Interim Committee adopted a net metering bill patterned after a Washington law.¹¹⁹

2. Tax Credits

Another means of encouraging participation in distributed generation is to provide tax credits that reduce the final cost of distributed generation systems to the consumer. In the 2001

First Special Session, the Legislature reinstated a tax credit for renewable energy systems that had been allowed to expire on January 1, 2001 and extended the credit through taxable years beginning on or before December 31, 2006.¹²⁰ Under that legislation, a taxpayer is entitled to a tax credit of up to \$2,000 for installing a residential energy system that uses renewable resources. The legislation also directed the Public Utilities and Technology Interim Committee to consider whether the energy systems tax credit should be modified.

D. Energy Efficiency and Conservation

Improving energy efficiency is another way to reduce demand for electricity and thus the need for constructing additional central station power plants. In 1999, the Legislature passed a bill allowing the Governor to implement a state building energy efficiency program.¹²¹ Under this program, agencies may finance the cost of energy efficiency measures from expected savings in energy costs resulting from implementation of the energy efficiency measures.¹²²

In the summer of 2001, the Governor established the PowerForward initiative that encourages energy conservation statewide.¹²³ Also during the summer of 2001, the PSC approved programs proposed by PacifiCorp for different consumer classes that reduced demand through voluntary conservation efforts of consumers.¹²⁴ An example is the 20/20 program for residential consumers. The 20/20 program gave an additional 20% reduction in a consumer's electricity bill if that consumer used at least 20% less electricity during a month when compared to usage during that same month in the previous year.

E. Other Issues

Although the specific Utah issues addressed above are not comprehensive, these issues illustrate the types of questions the Legislature may be asked to consider. However, it is important to note that the electricity debate in Utah continues to evolve. Therefore, it is difficult to address electricity issues without adapting to the dynamic nature of the market.

As issues arise, the Legislature may be asked to make decisions in areas that break new ground. For example, members of rural communities have raised the possibility of reconfiguring the service territories in the state so that providers other than PacifiCorp could serve increased portions of rural Utah. Currently, service territories not served by municipalities are determined by the PSC and changing these territories could raise issues such as PacifiCorp's property rights, the ability of providers such as rural electric cooperatives to provide the power, and the overall impacts such a change would have on the electric market in Utah. In addition, the need for development of new or enhanced transmission infrastructure, distribution infrastructure, or generation resources may be raised to facilitate Utah consumers receiving affordable and reliable electricity. Related issues include reevaluating siting and permitting processes for new resources and ensuring continued reliability of the system.

III. Legislative Options in Developing Policy Initiatives

Although not comprehensive of all options, the following provides three examples of the types of legislative options available to the Legislature in responding to energy issues. These options are not exclusive of each other and could be combined to meet legislative objectives. Moreover, the Legislature could determine not to act at this time to allow markets or other parties to address energy issues that have arisen.

A. Allow the Executive Branch to Take the Lead

As discussed previously, Governor Leavitt this year issued a state energy policy and has begun the implementation of that energy policy. Several state executive branch entities also play key roles in developing or implementing energy policies. For example, included in the PSC's responsibilities to regulate public utilities is the charge of long-range planning regarding public utility regulatory policy to facilitate the well-planned development and conservation of utility resources.¹²⁵ The Department of Environmental Quality interacts with energy markets as part of the permitting process. The Department of Natural Resources gathers and evaluates critical information that assists in development of energy policy. The Department of Community and Economic Development administers energy assistance programs.

As the state executive branch entities address energy issues, these entities can bring to the Legislature proposals for legislative change. Through this process, the expertise these entities develop in dealing with the complex energy issues can provide guidance to the Legislature regarding what statutory framework is necessary for Utah's energy markets to remain strong.

B. Establish a Legislatively Developed State Energy Policy

The Legislature may establish a state energy policy of its own design to meet the state energy needs. This state energy policy could coordinate with or be an alternative to Governor Leavitt's state energy policy. If the Legislature decides to develop such a policy the following would need to be considered.

Scope: Should the policy address all Utah energy markets, *i.e.*, electricity, natural gas, coal, and petroleum products, or target only one or a few of these markets?

Long or Short-Term: Should the policy establish a long-term plan to address energy markets for decades or address the more short-term issues created by recent volatility of the markets?

Mandates or Incentives: Should the policy require energy market participants to meet legislatively established mandates or should the policy encourage action by providing participants incentives to take certain action?

Implementing Agencies: Which agencies should be charged with implementing the policy, *e.g.*, PSC, a new agency, other existing executive branch entities?

A fundamental issue for the Legislature, if it elects to establish a state energy policy, is determining the best process for it to follow in establishing such a policy. The Legislature could establish the policy and an implementation process by statute or by joint or concurrent resolution. Alternatively, the Legislature could require a committee to develop and monitor a policy on a permanent basis. Selecting between these options may turn on the need for enforcement mechanisms, the level of detail, coordination with the Governor, and any future developments in energy markets. An additional process question is which committee or legislator should do the initial work in developing that policy. Currently the Legislature has two committees that have energy issues as a primary or sole focus: the Public Utilities and Technology Interim Committee and the Energy Policy Task Force (scheduled to end in November 2002).

C. Address Specific Issues Legislatively as They Arise

Another option available to the Legislature is to address issues legislatively as they arise without requiring that legislative action fit within a set state energy policy. This option requires the Legislature to balance the need for specific action with the need to have long-term analysis of energy markets as a whole.

D. An Illustration of How to Implement Legislative Options

How the options discussed above or a combination of these options could be implemented can be illustrated by examining how the Legislature could address PacifiCorp's reorganization proposal if the Legislature chooses to act. Under the first option, the Legislature would leave to the PSC the decision of whether to permit the reorganization and, if so, how the reorganization should take place. The Legislature would take any necessary legislative action only after the PSC acts. However, if the executive branch acts first, the Legislature's ability to alter the reorganization of PacifiCorp may be limited because of the contractual relationships between private parties.

Under the second option, the Legislature would address the proposed reorganization as part of a general state energy policy. By doing so, the Legislature could account for PacifiCorp's and others' role in addressing issues such as new generation and transmission infrastructure, meeting future demand load, and developing strong markets. However, a challenge would be time. If the Legislature wishes to act in the 2002 General Session, there is little time to develop a detailed, comprehensive state energy policy.

The third option would be for the Legislature to take action on the corporate reorganization without concurrently establishing a state energy policy. There is a spectrum of legislative options available to the Legislature under this scenario including: addressing the PSC approval process, addressing potential statutory impacts, imposing conditions for the reorganization, or requiring that the PSC examine specific issues or address specific policy goals.

A combination of these options could be illustrated by the Legislature taking action in the 2002 General Session to ensure that the PSC cannot give final approval to a reorganization of PacifiCorp prior to the 2003 General Session or before considering specific policy objectives. If the PSC cannot act prior to the 2003 General Session, the PSC would have an opportunity to develop the issues and options available to Utah while reserving for the Legislature an opportunity to take the action if it deems appropriate in the 2003 General Session. If the PSC is required to consider specific policy objectives, its decision would then be consistent with the specific policy objectives established by the Legislature.

CONCLUSION

Utah's electric market is a low-cost, growing market that has not experienced the same volatility as has California and other Western states. However, continued strong energy markets are important to Utah's economic health and quality of life. Understanding the needs of Utah's

energy markets requires an examination of issues such as the adequacy of energy sources, regional relationships, and impacts to stakeholders. Of particular importance to Utah's electric market are issues such as the adequacy of generation resources and the transmission system; PacifiCorp's proposal to reorganize its corporate structure; and whether the unique needs of different Utah consumer groups, *e.g.*, industrial or rural consumers, are being met by the current regulatory structure or proposed changes to that structure.

The Legislature can choose the role it elects to play in addressing energy issues. Three examples of options available in defining that role include allowing the executive branch to take the lead, establishing legislatively a state energy policy, or taking legislative action on an issue-by-issue basis. These options are not exclusive and could be combined with each other or with other options. Importantly, the timeliness of a legislative response to energy markets that are increasingly market driven may be essential to ensure that the Legislature's ultimate policy objectives are sufficiently clear and that these objectives are met.

The timeliness of a legislative response may be essential to ensure that the Legislature's ultimate policy objectives are sufficiently clear and that these objectives are met.

Endnotes:

1. For more information on events occurring in California, *see* Appendix B, California's Electricity Crisis.
2. *See, e.g.*, UTAH DEPT. OF NATURAL RESOURCES, ISSUE BRIEF: UTAH ENERGY SITUATION ASSESSMENT 1 (Oct. 2000) [hereinafter UTAH ENERGY ASSESSMENT]; Table 1: Utah Energy Balance 1980 – 2000, prepared by the Office of Legislative Research and General Counsel [hereinafter OLRGC]. Between 1990 and 2000 the total energy consumption in Utah increased 34%. UTAH ENERGY ASSESSMENT, *supra*. In comparison, in the last decade, Utah's population has increased 26% and the total economic output of the state's economy, as measured by gross state product, has risen 85%. *Id.*
- When possible, the briefing paper and accompanying tables use the most recent numbers available through October 25, 2001, from Thomas Brill, Economist, Dept. of Natural Resources. Generally, the updated numbers appear in the tables. However, the briefing paper also cites to a variety of reports that as part of their analysis cite numbers that have been updated after the reports were issued. If the updated numbers do not indicate a material change and the briefing paper cites to the economic analysis of a published report, the numbers cited in describing the economic analysis have generally not been updated. Therefore, not all numbers in this briefing paper are based on the same raw data and consequently may differ.
3. *See* E-Mails from Thomas Brill, Economist, Utah Dept. of Natural Resources, to OLRGC [hereinafter E-Mail from Thomas Brill] (July 12, 2001) (copies on file with OLRGC).
4. *See* Table 1, *supra* note 2.
5. *Id.*
6. *See, e.g.*, EDISON ELECTRIC INSTITUTE, KEY FACTS ABOUT THE ELECTRIC POWER INDUSTRY (Feb. 2001)[hereinafter KEY FACTS].
7. *See* Table 3: Generation/Production & Consumption of Electricity in Utah 1980 – 2000, prepared by OLRGC.
8. *Id.*
9. *Id.*
10. *See* UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR 139 (Jan. 2001) [hereinafter ECONOMIC REPORT TO GOVERNOR]; Table 3, *supra* note 7.
11. *See* E-Mails from Thomas Brill, *supra* note 3 (Oct. 17, 2001 & Oct. 25, 2001).
12. This briefing paper cites to the Utah Office of Energy and Resource Planning because many of the reports from which the paper draws its statistical information were issued by that office. However, the Utah Office of Energy and Resource Planning no longer exists and has been replaced by the Utah Energy Office. The Department of Natural Resources will generally provide the statistical analysis in the future.
13. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139; E-Mail from Thomas Brill, *supra* note 3 (July 12, 2001).
14. *See* Table 2: Selected Energy Prices in Utah 1980 – 2000, prepared by OLRGC.
15. *Id.*; *see also* Table 2 – Illustration: Electricity Price Trends in Utah 1980–2000, prepared by OLRGC.
16. UTAH ENERGY ASSESSMENT, *supra* note 2, at 1.
17. *PacifiCorp*, No. 01-035-01 (Utah Pub. Serv. Comm'n Sept. 10, 2001) (report and order). The PSC ordered an interim increase of \$70 million early in the rate proceeding, which increased rates as of the interim order. Because the final amount ordered was less than the interim increase, PacifiCorp will have to account for the excess amounts collected under the interim rates. *See PacifiCorp*, No. 01-035-01 (Utah Pub. Serv. Comm'n Nov. 2, 2001) (order approving stipulation on rate design issues and order on refund). The refund under the general rate case has been delayed pending resolution of PacifiCorp's petition for rate relief for costs incurred because of a forced outage of the Hunter Number 1 Generating Unit. *See PacifiCorp*, No. 01-035-23 (Utah Pub. Serv. Comm'n Nov. 2, 2001) (order). In addition, PacifiCorp is seeking rate relief for costs incurred by wholesale market purchases, *see PacifiCorp*, No. 00-035-29 (Utah Pub. Serv. Comm'n Sept. 21, 2001) (application).
18. *See* http://www.uamps.com/map_11.htm; <http://www.umpa.cc/membership.htm>; <http://www.gcseca.org/other.htm>; and <http://www.deseretgt.com/grid/cooperatives/> (visited Oct. 12 2001). Although alternatively known as Utah Power & Light, PacifiCorp, or ScottishPower, after mergers in 1989 and 1999, for purposes of this briefing paper, the company will be referred to as "PacifiCorp." Some publicly owned utilities do not belong to any of the key utility related entities listed in Figure 4, *e.g.*, Helper and the Navajo Tribal Utility Authority. In addition, Western Area Power Administration sells wholesale and retail power in Utah from federally owned generation facilities, and Strawberry Water User's Association, an electric service district, sells retail power in Utah.
19. *See* U.S. ENERGY INFO. ADMIN., DEPT. OF ENERGY [hereinafter EIA], ELECTRIC POWER ANNUAL 1999, Vol. II at 8; *see also* EIA, FIGURE 4: U.S. ELECTRIC UTILITY SALES TO ULTIMATE CONSUMERS BY CLASS OF OWNERSHIP, 1999, <http://www.eia.doe.gov/cneaf/electricity/page/prim2/fig4.gif> (visited Oct. 12, 2001). If measured by percentage of revenue from U.S. electric utility sales to ultimate consumers, investor-owned utilities earned 76% of the revenue from retail sales. *Id.* at FIGURE 5.
20. *See* EIA, ELECTRIC POWER INDUSTRY OVERVIEW 1, <http://www.eia.doe.gov/cneaf/electricity/page/prim2/chapter1.html> (visited Oct. 22, 2001) [hereinafter ELECTRIC POWER INDUSTRY OVERVIEW]; *see also* KEY FACTS, *supra* note 6.
21. The Utah Code regulates general powers of a municipality related to electric services such as Utah Code Ann. § 10-2-421 (Supp. 2001), electric utility service in annexed area; Utah Code Ann. § 10-7-15 (1999), submitting to the electors a proposition to sell electricity facilities; and Utah Code Ann. § 10-8-21 (1999), lighting facilities, sale of gas and electric power, erection and removal of poles and wires.
22. Utah Code Ann. § 54-7-12 (Supp. 2001).
23. *See, e.g.*, Utah Code Ann. § 54-4-4 (2000); *Stewart v. Utah Pub. Serv. Comm'n*, 885 P.2d 759 (Utah 1994).
24. Most of the electricity in the United States is produced in steam turbines that have a series of blades mounted on a shaft against which steam is forced, rotating the shaft connected to the generator. Coal, natural gas, or petroleum is burned in large furnaces to heat water that makes the steam that pushes on the blades of the turbines. Natural gas, in addition to being burned to heat water for steam, can also be burned to produce hot combustion gases that pass directly through a turbine, spinning the turbine blades to produce electricity. *See* EIA, ELECTRICITY <http://eia.doe.gov/kids/electricity.html> (visited Oct. 19, 2001). For a discussion of the importance of coal to Utah's electric market, *see infra* notes 25-36 and accompanying text.

25. EIA, STATE ELECTRICITY PROFILES 2000 – UTAH, http://www.eia.doe.gov/cneaf/electricity/st_profiles/utah/ut.html (visited Oct. 25, 2001) [hereinafter UTAH PROFILE]. The figure cited is based on generation of electricity by primary energy source. If measured by percentage of generating capability by plant type, the percentage share in 1998 exceeded 85%. *Id.* Coal is the single largest primary fuel source of energy used to generate electricity in the United States and in Utah. In 1998, more than half (52%) of the nation's 3.62 trillion kWh of electricity used coal as its source of energy. *See* ELECTRICITY, *supra* note 24. Nine of every ten tons of coal used in the U.S. are for electricity generation. *See*, EIA, FUN FACTS, <http://eia.doe.gov/kids/funfacts.html> (visited Oct. 19, 2001) [hereinafter FUN FACTS].
26. *See* UTAH OFFICE OF ENERGY AND RESOURCE PLANNING, DEPT. OF NATURAL RESOURCES, 2000 ANNUAL REVIEW AND FORECAST OF UTAH COAL PRODUCTION AND DISTRIBUTION 1 (July 2001) [hereinafter UTAH COAL REVIEW AND FORECAST]. Electric utilities consumed (if exports to the Pacific Rim are included) 88.7% of the coal produced in Utah during 2000. *Id.*
27. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 140. It is unclear from the context of the statement in the *Economic Report to the Governor* if this statement refers to only nonrenewable fuel sources.
28. *Id.*
29. *See* Table 4: Supply & Consumption of Coal in Utah 1980 – 2000, prepared by OLRGC.
30. *See* UTAH COAL REVIEW AND FORECAST, *supra* note 26; *see also* Table 4, *supra* note 29.
31. *See* UTAH COAL REVIEW AND FORECAST, *supra* note 26.
32. *Id.* The industry expects another productivity record in 2001. *Id.*
33. *See* Table 4, *supra* note 29.
34. *See* UTAH COAL REVIEW AND FORECAST, *supra* note 26.
35. *See* Table 2, *supra* note 14; UTAH ENERGY ASSESSMENT, *supra* note 2, at 1.
36. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 140.
37. *See* UTAH PROFILE, *supra* note 25. For example, the annual growth rate for use of natural gas as a primary fuel in electricity generation was 58.5% from 1988 to 1998. *Id.* The figure cited is based on generation of electricity by primary energy source. If measured by percentage of generating capability by plant type, the percentage share in 1998 was 56%. *Id.*
38. *See* Table 5: Production & Consumption of Natural Gas in Utah 1980 – 2000, prepared by OLRGC. Natural gas provides about 25% of the energy consumed in the United States. Nationally, more homes are heated with natural gas than any other energy source. *See* FUN FACTS, *supra* note 25. Natural gas production was higher in 2000 than in 1999 since new production from coalbed methane helped to curb Utah's production decline. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139.
39. ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139.
40. *See* EIA, U.S. CRUDE OIL, NATURAL GAS, AND NATURAL GAS LIQUIDS RESERVES 1999 ANNUAL REPORT, 28, Tables 8, 9, 10, 11.
41. *See* Table 5, *supra* note 38.
42. *Id.*
43. Nationally there have been efforts to restructure the natural gas market to allow greater choice for retail consumers. Across the country, response to these types of programs has been mixed, with only Nebraska and Wyoming having all eligible residential and commercial consumers deciding to choose their supplier. In New Mexico and West Virginia, virtually no consumers participate in the programs. *See* EIA, RETAIL UNBUNDLING – U.S. SUMMARY (March 28, 2001).
44. *See* Table 2, *supra* note 14.
45. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139; Table 2, *supra* note 14.
46. E-Mail from Thomas Brill, *supra* note 3 (Oct. 25, 2001); *see also* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139 (which states that it may remain above \$3.00).
47. *See* Table 2, *supra* note 14.
48. *See* UTAH ENERGY ASSESSMENT, *supra* note 2, at 1.
49. *Id.*
50. *Questar Gas Company*, No. 00-057-10 (Utah Pub. Serv. Comm'n Jan. 4, 2001) (report and order).
51. *Questar Gas Company*, No. 01-057-10 (Utah Pub. Serv. Comm'n Oct. 4, 2001) (interim order).
52. *See* E-Mails from Thomas Brill, *supra* note 3 (Oct. 5, 2001 & Oct. 25, 2001).
53. *See* Table 6: Supply, Refining & Consumption of Petroleum Products in Utah 1980 – 2000, prepared by OLRGC. Crude oil is typically measured and reported in barrels. One barrel of petroleum or related products is equal to approximately 42 gallons.
54. *See* ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 171.
55. *See* UTAH ENERGY ASSESSMENT, *supra* note 2, at 2.

56.

Utah Proved Reserves of Crude Oil (million barrels)

Year	Crude Oil Reserves
1995	216
1996	237
1997	234
1998	201
1999	268
2000 est.	260

Source: E-mails from Thomas Brill, *supra* note 3 (July 12, 2001).

57.

Utah Exploration and Drilling Activity

Year	Drilling Permits	Rotary Rigs (Average Active Rigs)	Exploratory Wells
1967	173	15	81
1977	374	30	103
1987	195	8	49
1997	527	13	88

Source: UTAH OFFICE OF ENERGY AND RESOURCE PLANNING, DEPT. OF NATURAL RESOURCES, UTAH ENERGY STATISTICAL ABSTRACT 60, Table 3.3 (6th ed. 1999).

58. See ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139.

59. *Id.* at 171. The *Economic Report to the Governor* cites a decline from 32% to about 15% of Salt Lake refinery receipts of Utah production. In contrast, Canadian crude oil was about 16% of Utah refinery receipts in 2000. *Id.* at 172.

60. See Table 6, *supra* note 53.

61. See ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 171, 172, 174.

62. *Id.* at 171. One instance of this tightening has occurred for jet fuel. When jet fuel supplies were low in recent years, additional supplies were trucked in from the West Coast and from Denver to meet demand, resulting in increased prices. The State Office forecasts that "a similar pattern might occur with other refined products." *Id.*

63. See Table 2, *supra* note 14.

64. See ECONOMIC REPORT TO GOVERNOR, *supra* note 10, at 139.

65. *Id.*

66. EIA, INTERNATIONAL ENERGY ANNUAL 1999, GLOSSARY, <http://www.eia.doe.gov/emeu/iea/glossary.html> (visited Oct. 22, 2001).

67. See ELECTRIC POWER INDUSTRY OVERVIEW, *supra* note 20, at 8-9; EIA, INTERCONNECTIONS OF THE NORTH AMERICAN ELECTRICITY RELIABILITY COUNCIL IN THE CONTIGUOUS UNITED STATES, 1998, <http://www.eia.doe.gov/cneaf/electricity/page/prim2/fig15.gif> (visited Oct. 22, 2001); see also Map 2: Overview of Selected Regions of the Transmission System Within the United States, prepared by OLRGC.

68. *Id.*

69. See Map 2, *supra* note 67.

70. See EIA, ELECTRICITY TRANSMISSION FACT SHEET, http://www.eia.doe.gov/cneaf/electricity/page/fact_sheets/transmission.html (visited Oct. 22, 2001).

71. See Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmission Utilities, F.E.R.C. Stats. & Regs. ¶ 31,026, 61 Fed. Reg. 21,540 (1996); Order No. 889, Open Access Same-Time Information System and Standards of Conduct, F.E.R.C. Stats. & Regs. ¶ 31,035, 61 Fed. Reg. 21,737 (1996); Order No. 2000, Regional Transmission Organizations, F.E.R.C. Stats. & Regs. ¶ 31,089, 30,996, 65 Fed. Reg. 809 (2000). The requirements apply to jurisdictional utilities, *i.e.*, utilities subject to FERC jurisdiction. These utilities typically include investor-owned utilities and often do not include publicly owned utilities.

72. For a discussion of congestion on the Western grid, see Presentation by Jim Byrne, Western Regional Transmission Association, to Transmission Roundtable of the Western Governors Association (May 9, 2001); *Western States Electricity Transmission Highway System Overview*, presentation by Rich Bayless, Director Transmission Systems Planning, PacifiCorp, to Transmission Roundtable of the Western Governors Association (May 9, 2001).

73. E-Mail from Kenneth N. Morris, Director of Transmission Planning, PacifiCorp, to OLRGC (Oct. 11, 2001) (copy on file with OLRGC).

74. *Id.*

75. See RTO West, Schematic MAP of RTO West Area Utilities (June 6, 2000) <http://208.55.67.64/Doc/RTOWestAreaMap.PDF>.

76. See, *e.g.*, *Avista Corp.*, Nos. RT01-35-001, RT01-15-001, 96 FERC ¶ 61,058, 2001 FERC LEXIS 1692 (July 12, 2001) (order) http://208.55.67.64/Index_Page_RTOWest_FilingUtilities_FERCDocs.html (visited Oct. 19, 2001).

77. The Energy Policy Task Force was first created as the Electrical Deregulation and Customer Choice Task Force by *Electrical Deregulation and Customer Choice Task Force*, H.B. 313, 52nd Leg., Gen. Sess. (Utah 1997). The task force was authorized to operate until 2002 by *Electric Deregulation and Customer Choice Task Force Amendments*, S.B. 250, 53rd Leg., Gen. Sess. (Utah 2000), and was renamed the Energy Policy Task Force by *Modifying the Electric Deregulation and Customer Choice Task Force*, H.B. 244, 54th Leg., Gen. Sess. (Utah 2001), which also expanded the scope of the task force's duties. The applicable statutes are Utah Code Ann. §§ 54-7-12.5, 54-7-12.7 (2001).

78. EIA, MAP: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY, http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html (visited Oct. 26, 2001) [hereinafter MAP: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY].

79. *Id.* Although West Virginia by legislation approved a PSC plan to implement retail access, the process is delayed until a bill for tax reform is enacted.

80. See, *e.g.*, EIA, TABLE: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY, http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html (visited Oct. 26, 2001) [hereinafter TABLE: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY].

81. See Appendix B, *supra* note 1.

82. *Pacific Gas and Electric Co.*, No. 01-09-060, 2001 Ca. PUC LEXIS 846 (Ca. Pub. Util. Comm'n September 20, 2001) (interim opinion suspending direct access).

83. See, *e.g.*, PENNSYLVANIA DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT, *Pennsylvania Again Ranked No. 1 in Nation for Electric Deregulation* (Feb. 7, 2001) http://www.dced.state.pa.us/PA_Exec/DCED/newevent/01/01-2-7-PA1-ElectricDereg.html.

84. See TABLE: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY, *supra* note 80; *Retail Electric Competition Struggles as States Seek Reliable Summer Service*, LEAPNET (May-June 2001) <http://www.spratley.com/leapnet/page.cgi?t=11&p=968>.

85. NATIONAL ENERGY POLICY DEVELOPMENT GROUP, NATIONAL ENERGY POLICY REPORT: RELIABLE, AFFORDABLE, AND ENVIRONMENTALLY SOUND ENERGY FOR AMERICA'S FUTURE (May 16, 2001) <http://www.whitehouse.gov/energy/>.
86. *Id.* at viii. Projections covering the next 20 years indicate that national consumption of oil will increase by 33%, natural gas will increase by 50%, and electricity will increase by 45%. *Id.* at x.
87. *Id.* at xi-xv. The principles and guidelines are summarized in the text.
88. Securing America's Future Energy Act of 2001 (SAFE Act), H.R. 4, 107th Cong. (July 2001) (Rep. Billy Tauzin); *see also* Presentation of Jimmy Glotfelty, Senior Policy Assistant to the Secretary, Office of the Secretary of Energy, U.S. Dept of Energy, to National Conference of State Legislatures (August 11, 2001).
89. *See* Telephone conversation with Jimmy Glotfelty, Senior Policy Assistant to the Secretary, Office of the Secretary of Energy, U.S. Dept of Energy (Nov. 7, 2001).
90. Electricity Emergency Relief Act, H.R. 1647, 107th Cong. (2001), LEXIS 107 H.R. 1647, <http://thomas.loc.gov/cgi-bin/bdquery/z?d107:HR01647:@@L&summ2=m&> (visited Oct. 21, 2001).
91. Comprehensive and Balanced Energy Policy Act of 2001, S. 597, 107th Cong. (2001), LEXIS 107 S. 597 <http://thomas.loc.gov/cgi-bin/bdquery/z?d107:SN00597:@@L&summ2=m&> (visited Oct. 21, 2001).
92. Another example is the SAFE Act's treatment of transmission. The SAFE Act addresses both the enhancement of the nation's transmission infrastructure through research and development and use of transmission rights-of-way on federal lands. *See, e.g.*, SAFE Act, *supra* note 88, §§ 2241-2243, 6101. Although the adequacy of transmission infrastructure is an issue for Utah, as it is with most states, it is unclear what impacts the SAFE Act would have on transmission into and within the state.
93. SAFE Act, *supra* note 88, at §§ 5000-07 (Clean Coal Power Initiative Act of 2001) [hereinafter CLEAN COAL INITIATIVE].
94. *See, e.g., id.*
95. *See* Memorandum from Jahan Bani, Dept. of Natural Resources to Rich North, OLRGC, "H.R. 4 Clean Coal Power Initiative Act of 2001," (Aug. 17, 2001) (copy on file with OLRGC). The SAFE Act also authorizes the U.S. Department of Energy to not recover coal lease application and document fees, and allows a lease period longer than 40 years if the extended time period ensures maximum coal deposit recovery or is in the interest of economic development. *See* SAFE Act, *supra* note 88, § 6701. The SAFE Act authorizes the Secretary of the Interior to suspend the payment of advanced royalties to continue operation under certain conditions. *Id.* § 6703. It is unlikely that these provisions will have a measurable effect on Utah. *See* Memorandum to Rich North, *supra*.
96. *See supra* note 77 for a discussion of the Utah Energy Policy Task Force.
97. *Utah Governor's State Energy Policy*, Presentation by Lowell Alt, Director, Division of Public Utilities, Utah Dept. of Commerce, to Legislative Energy Policy Task Force, 54th Leg. (July 19, 2001).
98. *See, e.g.*, DIVISION OF ENERGY, WISCONSIN DEPT. OF ADMIN., STATE OF WISCONSIN 2001 ENERGY POLICY (Governor Scott McCallum) (June 2001) http://www.doa.state.wi.us/depb/boe/pdf_files/governor_energy_plan.pdf.
99. *See, e.g.*, George H. Ryan, Governor of Illinois, Press Release: *Ryan takes action to help Illinoisans cope with rising home heating costs* (Jan. 3, 2001) <http://www.state.il.us/gov/press/01/jan/0103dc.htm>.
100. *See, e.g.*, IOWA ENERGY BUREAU, IOWA DEPT. OF NATURAL RESOURCES, ENERGY POLICY TASK FORCE, <http://www.state.ia.us/dnr/energy/taskforce/> (visited Oct. 19, 2001).
101. N.H. Rev. Stat. Ann. § 378:37 (2000).
102. *See* TABLE: STATUS OF STATE ELECTRIC INDUSTRY RESTRUCTURING ACTIVITY, *supra* note 80.
103. *See supra* note 101.
104. *See supra* note 99.
105. *See Utah Power & Light Co.*, No. 87-035-27 (Utah Pub. Serv. Comm'n Sept. 28, 1988) (report and order approving the merger of Utah Power & Light Co. and PacifiCorp).
106. *Id.*
107. *See, e.g., PacifiCorp*, No. 97-035-04, 1998 Utah PUC LEXIS 120 (Utah Pub. Serv. Comm'n Apr. 16, 1998) (report and order adopting an allocation method in Utah different from that used by other states in which PacifiCorp operates).
108. OR Admin. Rule 860-038-0080 (2000) (Resource Policies and Plans). Issues exist as to how costs of resources will be accounted for during the transition to choice and implementation of resource plans in part because the Oregon Legislature postponed the day consumer choice begins in Oregon from October 2001 to March 2002. *See* H.B. 3633, 71st Leg., Reg. Sess. (Or. 2001). The Oregon Legislature also provided that in the interim, utilities can enter into agreements with the utility commission to approve a resource rate plan for new generation. H.B. 3696, 71st Leg., Reg. Sess. (Or. 2001). The debate in Oregon continues to evolve and change.
109. *See, e.g., PacifiCorp*, No. 00-035-15 (Utah Pub. Serv. Comm'n Dec. 1, 2000) (application and subsequent filings). As of November 7, 2001 PacifiCorp had filed applications with each of the six states except for California. Although not cited at each statement, the materials filed in Utah as of August 2001 by PacifiCorp are the primary source for the factual description of PacifiCorp's proposal. As the PSC proceeding moves forward, it is possible that elements of PacifiCorp's proposal may change.
110. *Docket No. 00-035-15*, Presentation by PacifiCorp to the Utah Technical Conference (Oct. 15, 2001).
111. The figure does not show the business entities that are above PacifiCorp Holdings, Inc. in ScottishPower's organizational framework or other subsidiaries of PacifiCorp Holdings, Inc. that are not directly effected by the reorganization proposal.
112. *See, e.g.*, Minutes of the Electrical Deregulation and Customer Choice Task Force Meeting (June 8, 2000).
113. For example, Oregon has adopted legislation that gives choice to consumers that meet a certain consumption level while providing residential and small commercial consumers a choice between a portfolio of rates, but not a choice of provider. *See* S.B. 1149, 70th Leg., Reg. Sess. (Or. 1999).
114. *See, e.g.*, Minutes of the Electrical Deregulation and Customer Choice Task Force Meetings, (Oct. 26, 2000 & Nov. 20 2000).

115. For an example of the interplay between PacifiCorp's obligations as a public utility and a municipal's obligations to its citizens, see *Micron Technology, Inc.*, No. 01-035-16, 2001 Utah PUC LEXIS 115 (Utah Pub. Serv. Comm'n June 1, 2001) (order dismissing Micron's complaint finding that the PSC had no authority to alter Lehi City's discharge of its duty to provide electric power service to Micron, located within the city's municipal boundaries).
116. See NATIONAL CONFERENCE OF STATE LEGISLATURES, THE DISTRIBUTED RESOURCES SERIES: *Distributed Resources in New Electricity Markets*, www.ncsl.org/programs/esnr/drovtrw.htm (visited Oct. 19, 2001); *Frequently Asked Questions*, www.ncsl.org/programs/esnr/drfaqs.htm (visited June 18, 2001).
117. *Id.*
118. *Net metering and Interconnection*, Presentation by Thomas J. Starrs, Kelso Starrs & Assoc. LLC, to the Public Utilities Technology Interim Committee, 54th Leg. (Utah May 23, 2001).
119. PUBLIC UTILITIES AND TECHNOLOGY INTERIM COMMITTEE, 54TH LEG., NET METERING OF ELECTRICITY, 2002FL-0070 (Draft Aug. 29, 2001).
120. *Individual Income Tax and Corporate Franchise and Income Tax – Renewable Energy Systems Tax Credits*, H.B. 1005, 54th Leg., 1st Spec. Sess. (Utah 2001).
121. *Quality Growth Act of 1999*, H.B. 119, 53rd Leg., Gen. Sess. (Utah 1999).
122. Utah Code Ann. § 63-9-67 (Supp. 2001).
123. Governor's Executive Order: *Establishing the State Government Energy Conservation and Efficiency Policy*, Governor Michael O. Leavitt (June 21, 2001).
124. *PacifiCorp*, No. 01-035-T07 (Utah Pub. Serv. Comm'n May 11, 2001) (order); *PacifiCorp*, No. 01-035-T04 (Utah Pub. Serv. Comm'n May 11, 2001) (order); *PacifiCorp*, No. 00-035-T09 (Utah Pub. Serv. Comm'n Jan. 25, 2001) (order).
125. Utah Code Ann. § 54-1-10 (Supp. 2001).

Table 1
Utah Energy Balance
1980 - 2000

YEAR	POPULATION (THOUSAND)	PRODUCTION (TRILLION BTU)	CONSUMPTION (TRILLION BTU)	NET EXPORTS (TRILLION BTU)
1980	1,473	649.4	505.7	143.7
1981	1,518	790.3	478.7	311.6
1982	1,558	766.8	468.1	298.7
1983	1,595	607.4	492.2	115.2
1984	1,622	648.9	510.2	138.7
1985	1,643	725.2	503.6	221.6
1986	1,663	1009.7	475.0	534.7
1987	1,678	1015.9	467.2	548.7
1988	1,689	896.4	530.1	366.3
1989	1,706	1000.4	536.1	464.3
1990	1,729	1014.0	546.2	467.8
1991	1,781	802.7	573.4	229.3
1992	1,838	799.0	559.6	239.4
1993	1,889	858.3	582.4	275.9
1994	1,947	953.6	592.8	360.8
1995	1,995	1027.6	638.1	389.5
1996	2,043	1032.5	668.9	363.6
1997	2,099	1021.1	683.5	337.6
1998	2,142	1043.9	696.1	347.8
1999	2,193	1009.7	693.9	315.8
2000 ^(e)	2,247	1020.8	714.7	306.1

(e) = A majority of the numbers in this row are estimates

Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: DEPT. OF NATURAL RESOURCES, UTAH ENERGY STATISTICAL ABSTRACT (6th ed. 1999); UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); and personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES.

Table 2

Selected Energy Prices in Utah 1980 - 2000

YEAR	FIELD PRICE			AVERAGE END-USE PRICE								
	COAL (\$/ton)	CRUDE OIL (\$/barrel)	NATURAL GAS (\$/mcf)	COAL (\$/ton)	MOTOR FUEL (\$/gallon)	NATURAL GAS			ELECTRIC POWER			
						-R- (\$/mcf)	-C- (\$/mcf)	-I- (\$/mcf)	-R- (¢/kWh)	-C- (¢/kWh)	-I- (¢/kWh)	
1980	25.63	19.79	1.86	29.63	1.23	2.74	5.59	2.26	5.5	4.3	3.3	
1981	26.87	34.14	1.87	32.79	1.37	3.23	5.35	2.58	6.0	5.0	3.7	
1982	29.42	30.50	2.47	33.38	1.35	3.41	3.43	2.45	6.3	5.7	4.2	
1983	28.32	28.12	2.56	30.64	1.13	4.26	4.32	3.15	6.9	6.3	4.4	
1984	29.20	27.21	3.16	30.64	1.12	5.68	4.96	3.52	7.4	6.5	4.6	
1985	27.69	23.98	3.23	32.34	1.14	4.86	4.91	3.23	7.8	6.9	5.0	
1986	27.64	13.33	2.90	32.32	.85	4.64	4.73	3.00	8.0	7.1	5.2	
1987	25.67	17.22	1.80	30.95	.93	4.97	4.98	3.20	8.0	7.1	4.9	
1988	22.85	14.24	1.70	29.50	.96	5.11	4.08	3.10	7.8	7.0	4.6	
1989	22.00	18.63	1.61	28.05	1.03	5.14	4.16	3.30	7.4	6.7	4.1	
1990	21.78	22.61	1.70	26.80	1.14	5.28	4.30	3.62	7.1	6.3	3.9	
1991	21.56	19.99	1.54	27.40	1.10	5.44	4.50	3.69	7.1	6.1	4.0	
1992	21.83	19.39	1.63	27.54	1.12	5.44	4.40	3.91	7.0	6.0	3.7	
1993	21.17	17.48	1.85	27.34	1.10	5.13	4.06	3.67	6.9	6.0	3.8	
1994	20.07	16.38	1.53	26.10	1.12	4.96	3.84	2.74	6.9	5.9	3.8	
1995	19.11	17.71	1.14	25.27	1.14	4.74	3.64	2.34	6.9	6.0	3.9	
1996	18.50	21.10	1.39	24.50	1.20	4.47	3.38	2.10	6.9	5.9	3.7	
1997	18.34	18.57	1.85	25.33	1.25	5.13	3.91	2.55	6.9	5.7	3.5	
1998	17.83	12.53	1.73	25.45	1.09	5.57	4.34	3.00	6.8	5.7	3.4	
1999	17.36	17.69	1.92	25.15	1.29	5.37	4.12	2.94	6.2	5.1	3.3	
2000(e)	16.93	28.51	3.42	25.30	1.50	6.24	4.62	3.20	6.2	5.1	3.3	
1980 prices in 2000 dollars*	53.56	41.36	3.89	61.92	2.57	5.73	11.68	4.72	11.5	9.0	6.9	

* The following were calculated by using the CPI-U (consumer price index for all urban consumers) of the federal Bureau of Labor Statistics.

(e) = A majority of the numbers in this row are estimates

-C- = Commercial

-I- = Industrial

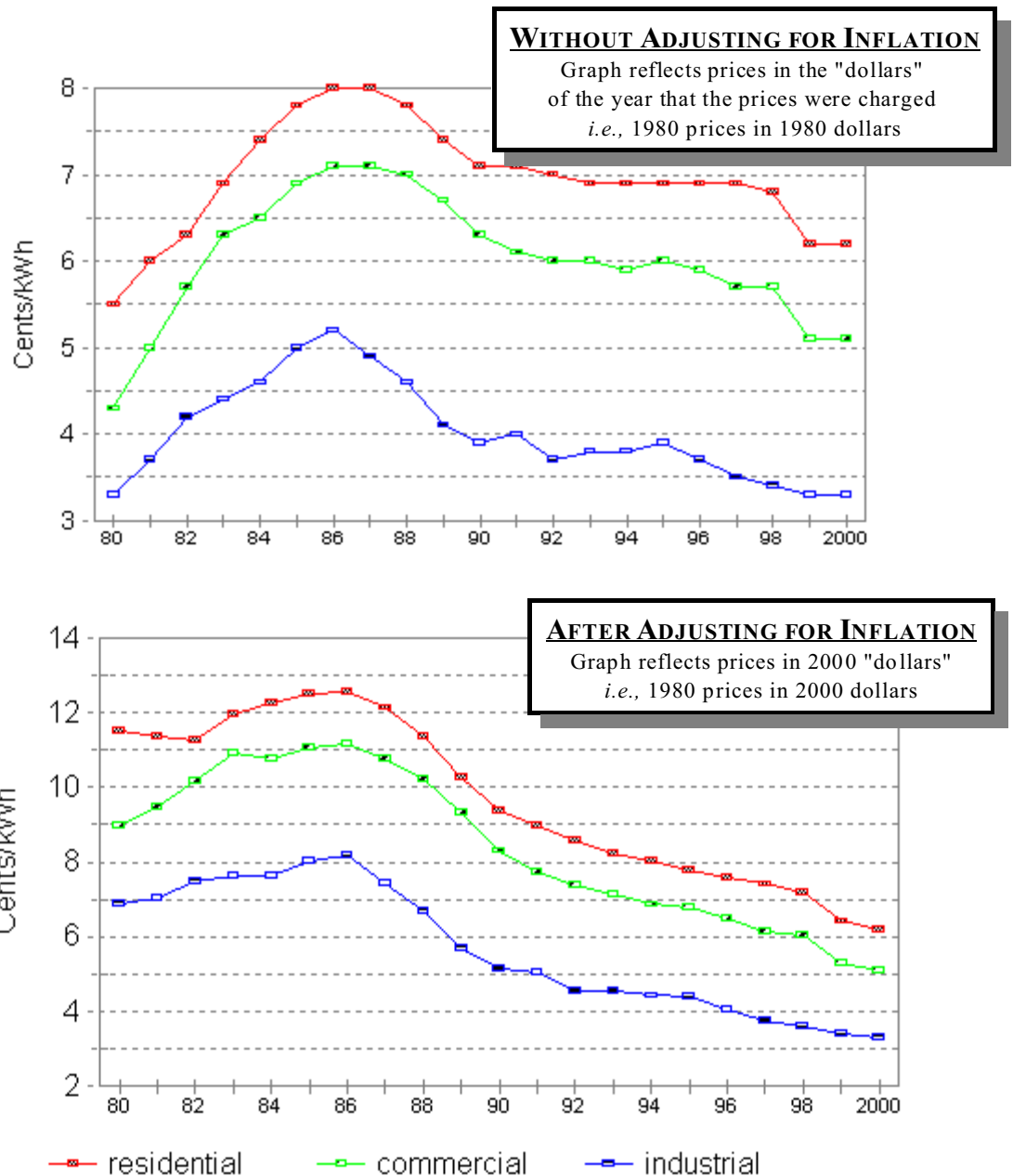
-R- = Residential

Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); and personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES.

Table 2 – Illustration

Electricity Price Trends in Utah 1980-2000



Prepared by the Office of Legislative Research and General Counsel
Source: Table 2, Selected Energy Prices in Utah, CPI-U of the federal Bureau of Labor Statistics used to adjust for inflation

Table 3

Generation/Production & Consumption of Electricity in Utah

1980 - 2000

(Million Kilowatthours)

YEAR	NET GENERATION BY FUEL TYPE					CONSUMPTION BY END USE				
	COAL	NATURAL GAS & FUEL OILS	HYDRO	OTHER	TOTAL	RESID'L	COMM'L	INDUST'L	OTHER	TOTAL
1980	10,870	421	823	-	12,114	3,293	3,569	3,800	512	11,174
1981	10,869	270	623	-	11,762	3,476	3,090	3,930	530	11,845
1982	10,635	232	1,024	-	11,891	3,630	3,033	4,610	745	12,018
1983	10,921	109	1,394	-	12,424	3,678	3,375	4,786	769	12,608
1984	12,321	38	1,391	38	13,788	3,825	3,935	4,656	950	13,366
1985	14,229	54	1,019	109	15,411	3,996	4,272	4,663	658	13,589
1986	15,155	80	1,413	171	16,819	3,984	4,262	4,583	662	13,491
1987	25,221	105	856	164	26,346	3,991	4,127	4,570	784	13,472
1988	28,884	64	593	174	29,637	4,186	4,356	5,259	765	14,566
1989	29,676	85	562	173	30,496	4,134	4,365	5,622	782	14,902
1990	31,519	103	486	152	32,260	4,188	4,713	5,553	772	15,225
1991	28,884	484	604	186	30,160	4,458	5,009	5,674	722	15,862
1992	31,543	612	580	186	32,921	4,458	5,170	6,085	668	16,381
1993	31,919	575	818	148	33,461	4,687	5,130	6,093	921	16,831
1994	32,764	780	716	195	34,455	5,031	5,561	6,322	945	17,860
1995	30,260	775	926	140	32,101	5,056	5,503	7,018	781	18,358
1996	30,693	324	1,019	192	32,229	5,481	5,911	7,660	860	19,858
1997	32,144	326	1,331	169	33,969	5,660	6,462	7,430	820	20,373
1998	33,207	494	1,299	160	35,161	5,756	6,709	7,511	724	20,700
1999	34,695	699	1,255	164	36,812	6,236	7,282	7,568	792	21,879
2000	34,477	1,902	751	160	36,590	6,467	7,934	7,880	869	23,153

Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); and personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES.

Table 4
Supply & Consumption of Coal in Utah
1980 - 2000
(Thousand Short Tons)

YEAR	SUPPLY				CONSUMPTION BY END USE				
	PRODUCTION	MARKETED PRODUCTION	IMPORTS	EXPORTS	RESID'L & COMM'L	COKE PLANTS	INDUST'L	ELECTRIC UTILITIES	TOTAL
1980	13,236	13,014	1,215	6,728	237	1,528	446	4,895	7,106
1981	13,808	13,014	1,136	8,764	196	1,567	714	4,956	7,432
1982	16,912	14,627	797	8,261	177	841	822	4,947	6,787
1983	11,829	15,397	937	6,133	191	839	629	5,223	6,882
1984	12,259	12,188	1,539	6,432	259	1,386	548	5,712	7,905
1985	12,831	12,074	1,580	6,549	252	1,288	438	6,325	8,303
1986	14,269	14,361	1,145	5,366	191	814	351	6,756	8,112
1987	16,521	13,243	1,165	5,633	123	231	276	11,175	11,806
1988	18,164	16,989	2,448	5,925	196	1,184	589	12,544	14,513
1989	20,517	18,244	2,367	7,283	231	1,178	686	12,949	15,044
1990	22,012	21,289	2,137	7,467	181	1,318	676	13,563	15,738
1991	21,945	21,680	2,007	7,954	320	1,310	535	12,829	14,834
1992	21,015	21,339	2,155	8,332	347	1,182	497	13,136	15,162
1993	21,723	21,935	2,100	8,761	228	1,089	614	13,343	15,274
1994	24,135	23,441	2,588	10,188	157	1,198	647	13,839	15,841
1995	25,051	25,443	1,841	12,848	182	1,062	642	12,550	14,436
1996	27,071	27,816	1,925	15,116	260	1,120	517	12,728	14,625
1997	26,428	25,407	2,615	11,375	96	1,106	665	14,780	16,647
1998	26,600	26,974	2,715	13,270	212	1,110	680	14,545	16,547
1999	26,491	26,180	2,159	12,081	107	728	830	14,593	16,258
2000(e)	26,900	26,532	2,655	12,262	82	1,000	1,089	14,754	16,925

(e) = A majority of the numbers in this row are estimates

Prepared by the Office of Legislative Research and General Counsel – October 2001
Source: UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); and personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES.

Table 5

Production & Consumption of Natural Gas in Utah

1980 - 2000

(Million Cubic Feet)

YEAR	PRODUCTION			CONSUMPTION BY END USE					
	GROSS	MARKETED	ACTUAL SALES	RESID'L	COMM'L	INDUST'L	ELECTRIC UTILITIES	LEASE, PLANT, OR PIPELINE	TOTAL
1980	87,766	47,857	(na)	40,578	17,391	43,545	5,133	8,445	115,092
1981	90,936	58,865	(na)	38,592	16,540	42,779	3,087	1,232	102,230
1982	100,628	56,368	(na)	47,452	20,336	39,804	3,0233	7,091	117,706
1983	96,933	54,700	(na)	44,047	18,877	40,246	1,259	5,756	110,185
1984	183,062	73,154	(na)	44,246	18,962	42,709	271	9,390	115,578
1985	208,803	78,906	(na)	47,062	20,170	37,448	235	10,202	115,117
1986	239,411	91,036	(na)	43,603	18,687	28,264	230	14,391	105,175
1987	262,045	96,360	(na)	41,536	14,811	23,884	263	18,493	98,987
1988	278,463	101,925	(na)	42,241	17,911	30,365	196	18,251	108,964
1989	278,081	120,089	(na)	45,168	16,522	33,963	636	17,248	113,537
1990	319,632	145,875	63,336	43,424	16,220	35,502	907	20,594	116,648
1991	323,660	144,817	65,288	50,572	19,276	43,120	5,190	14,602	132,766
1992	314,275	171,293	94,725	44,701	16,584	40,878	6,576	13,895	122,649
1993	336,183	225,401	137,864	51,779	22,588	42,301	6,305	15,039	138,044
1994	347,019	270,858	160,967	48,922	26,501	36,618	8,900	16,080	137,073
1995	303,233	241,290	164,059	48,975	26,825	42,373	8,707	29,843	156,824
1996	281,208	250,767	179,943	54,344	29,543	42,213	3,428	30,720	160,371
1997	274,920	257,139	183,427	58,108	31,129	44,162	4,078	27,554	156,159
1998	297,265	277,340	201,416	56,843	30,955	45,501	5,945	30,254	169,634
1999	276,967	262,614	205,036	55,474	30,361	40,859	6,478	26,371	159,672
2000(e)	282,506	268,730	227,681	55,624	31,249	39,956	10,544	26,828	164,201

(e) = A majority of the numbers in this row are estimates

(na) = Not available

Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES; AND U.S. ENERGY INFO. ADMIN., DEPT. OF ENERGY, NATURAL GAS MONTHLY APRIL 2001, 21, Table 7.

Table 6

Supply, Refining & Consumption of Petroleum Products in Utah 1980 - 2000

YEAR	CRUDE OIL (THOUSAND BARRELS)			REFINING (THOUSAND GALLONS)		CONSUMPTION & EXPORTS OF REFINED PRODUCTS (THOUSAND GALLONS)			
	FIELD PRODUCTION	IMPORTS	EXPORTS	REFINED IN UTAH	IMPORTS	MOTOR GASOLINE	OTHER FUELS	TOTAL	EXPORTS
1980	24,979	28,079	8,232	1,694,260	313,903	652,426	864,321	1,515,747	929,710
1981	24,309	26,655	7,866	1,973,731	367,721	653,037	645,184	1,298,225	992,451
1982	23,595	25,944	7,826	1,840,602	434,236	663,304	626,726	1,290,031	929,006
1983	31,045	21,979	8,316	2,184,602	340,139	670,071	691,610	1,361,681	1,062,499
1984	38,054	19,240	13,616	2,014,637	422,376	678,350	706,560	1,384,910	1,013,079
1985	41,144	19,934	14,597	2,153,603	394,479	682,086	666,580	1,348,666	981,323
1986	39,245	20,141	15,721	2,176,524	337,091	736,714	729,380	1,466,094	839,288
1987	35,835	20,700	12,137	2,198,490	349,466	740,152	755,325	1,495,477	870,198
1988	33,350	27,522	8,411	2,341,164	361,879	762,204	767,352	1,529,556	979,726
1989	28,512	32,241	6,179	2,284,128	393,766	727,064	750,848	1,477,911	937,692
1990	27,693	33,338	7,725	2,408,658	503,917	702,424	787,582	1,490,007	1,048,715
1991	25,930	34,536	8,961	2,412,732	477,078	730,571	858,529	1,589,099	1,114,853
1992	24,075	35,211	6,901	2,410,296	442,428	752,006	825,766	1,577,772	1,076,978
1993	21,819	33,854	7,758	2,419,074	449,694	791,137	815,371	1,606,508	995,020
1995	19,988	34,845	7,861	2,409,246	516,138	872,402	916,059	1,788,462	1,016,625
1996	19,504	34,937	7,713	2,471,784	533,064	889,140	1,043,673	1,932,851	1,031,561
1997	19,585	37,281	7,819	2,513,658	543,858	925,026	1,087,314	2,012,369	1,102,418
1998	19,198	38,728	7,785	2,579,808	539,364	957,402	1,094,832	2,052,233	1,114,115
1999	16,355	42,166	7,180	2,545,158	609,378	981,337	1,078,068	2,059,405	1,123,746
2000(e)	15,640	42,700	6,786	2,437,246	640,668	999,001	1,099,161	2,098,162	1,139,956

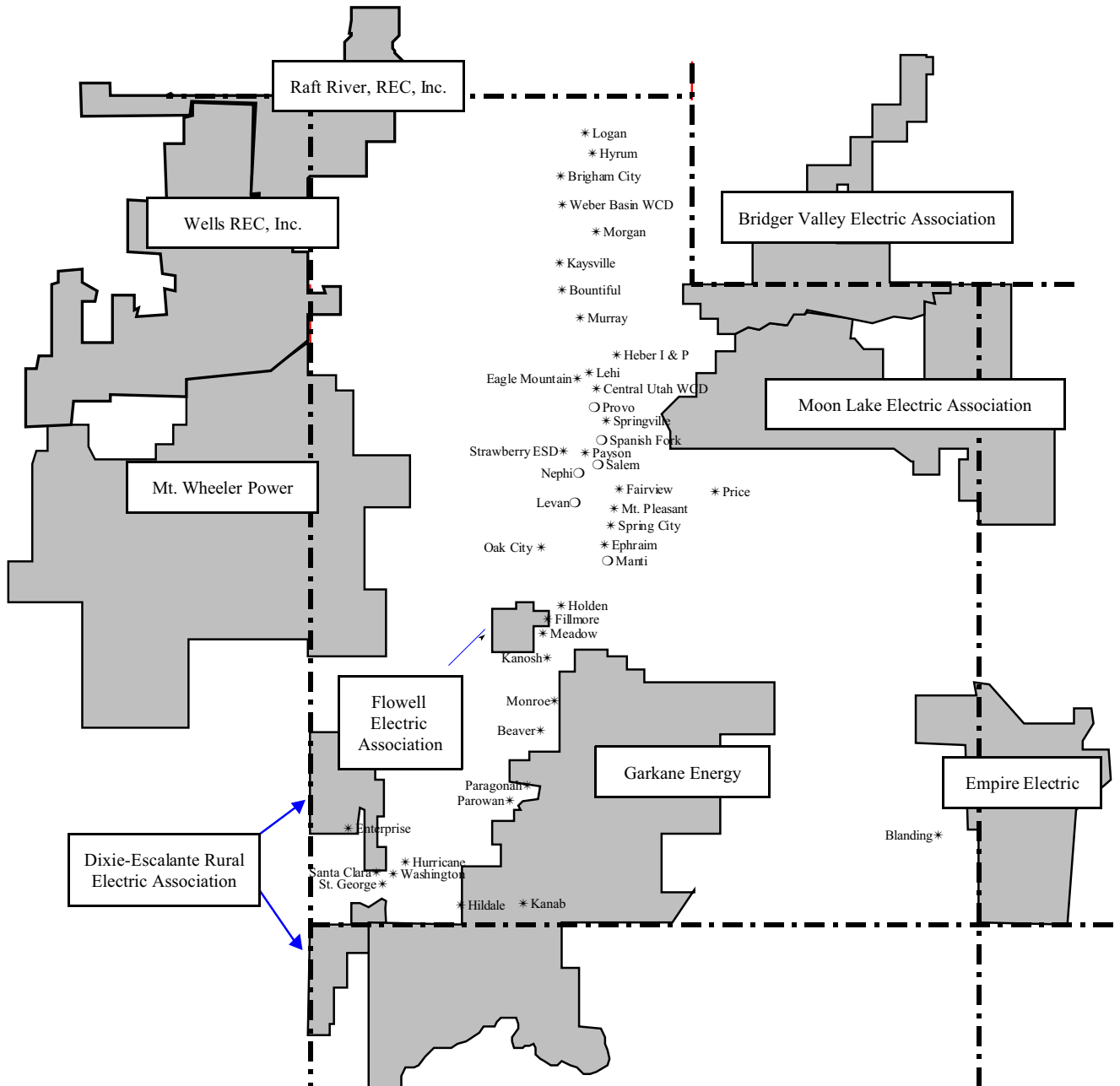
(e) = A majority of the numbers in this row are estimates

Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: UTAH COUNCIL OF ECON. ADV., OFFICE OF THE GOVERNOR, MICHAEL O. LEAVITT, 2001 ECONOMIC REPORT TO THE GOVERNOR (Jan. 2001); and personal communications with Thomas Brill, Economist, DEPT. OF NATURAL RESOURCES.

Map 1

Electric Service Territories in Utah



LEGEND

Shaded Areas	= Rural Electric Cooperatives
White Area Within Utah	= PacifiCorp
○	= Public Power Provider & Member of Utah Municipal Power Association (UMPA)
*	= Public Power Provider & Member of the Utah Associated Municipal Power Systems (UAMPS)

The map approximates the location of the cities or towns and may not be exact. An entity that operates a publicly owned utility within Utah that is not a member of UMPA or UAMPS is not listed.

Prepared by the Office of Legislative Research and General Counsel – October 2001
 Source: Utah Associated Municipal Power Systems Web Page, Utah Municipal Power Association Web Page, and Utah Rural Electric Association

Map 2

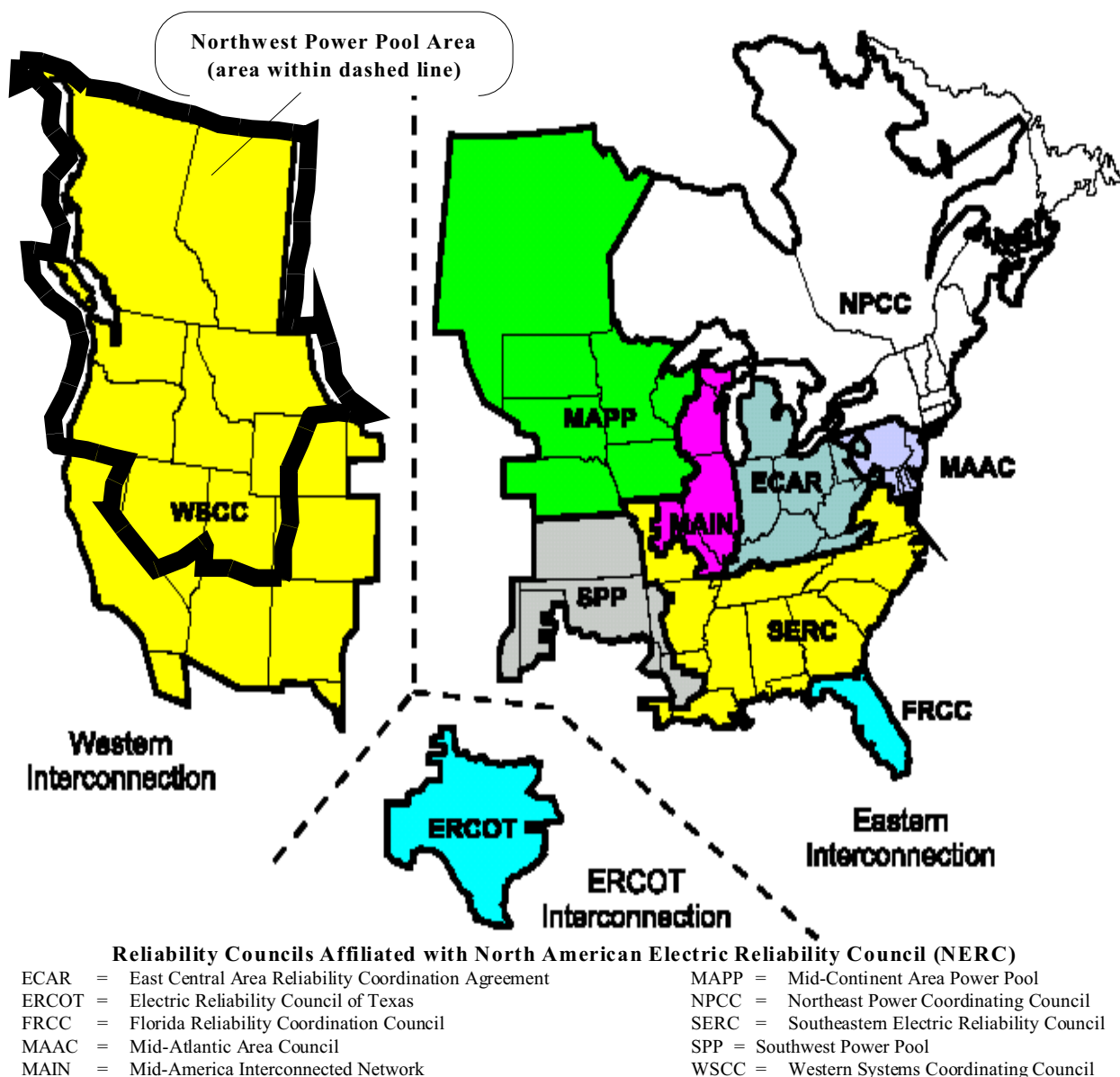
Overview of Selected Regions of the Transmission System Within the United States

REGIONS WHERE UTAH IS LOCATED

Interconnection = Western Interconnection ("Western Grid")

Reliability Council = Western Systems Coordinating Council
(This entity may be merged with other organizations and renamed)

General Load Area = Northwest Power Pool Area



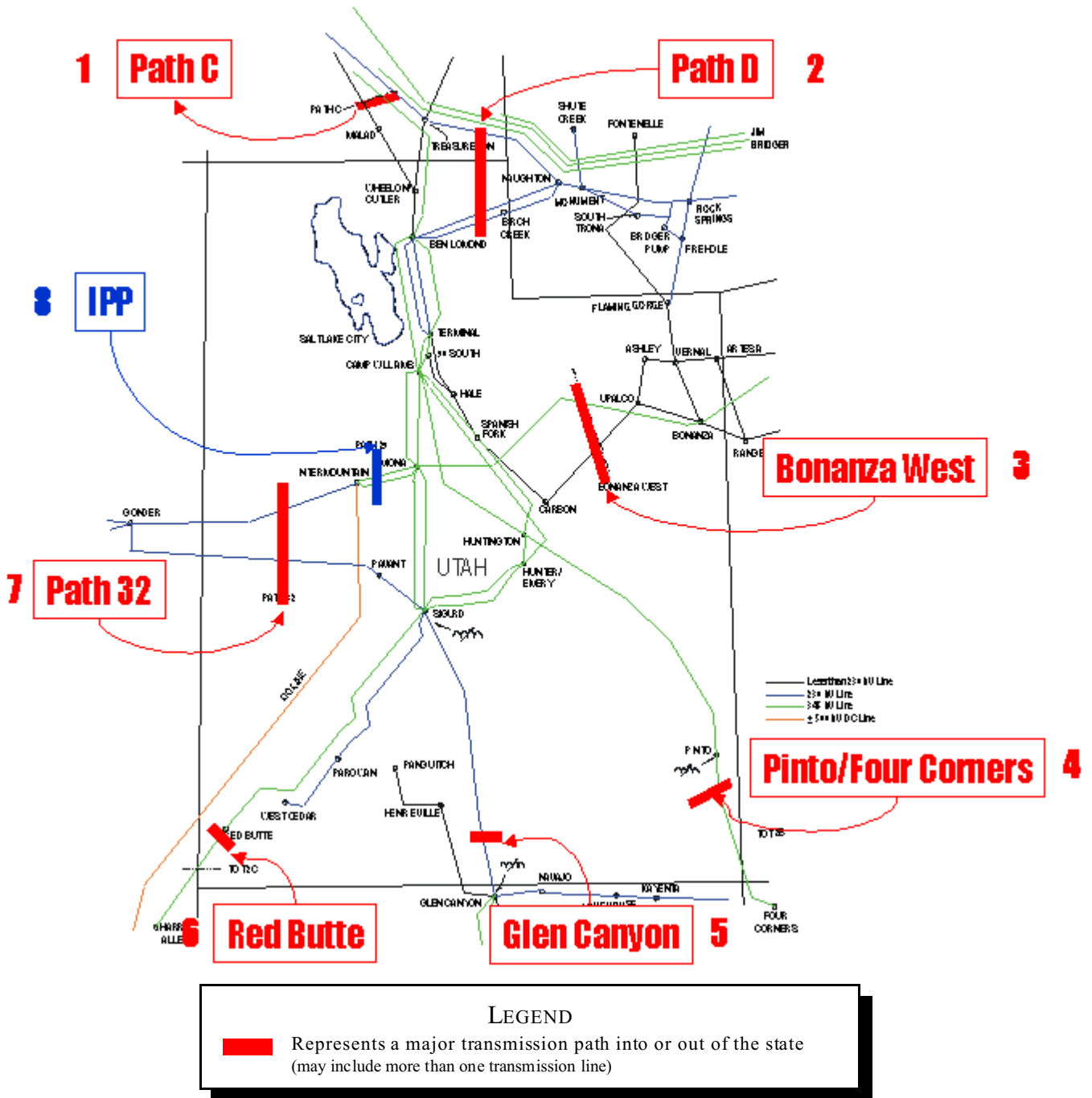
Prepared by the Office of Legislative Research and General Counsel – October 2001

Source: Western Systems Coordinating Council Website

Note: For simplicity, the Northwest Power Pool is the only load area indicated on the map. There are multiple load areas within the United States.

Map 3

Overview of Major Transmission Lines Into and Within Utah



Prepared by the Office of Legislative Research and General Counsel – October 2000
 Source: Personal communications with Rebecca Wilson, Division of Public Utilities, and Kenneth N. Morris, Director of Transmission Planning, PacifiCorp

Appendix A

Glossary of Selected Energy Terms

GLOSSARY OF SELECTED ENERGY TERMS

The following definitions are of selected energy terms used in the briefing paper or commonly used in legislative discussions of energy issues.

Aggregation: Bringing together consumers into a buying group for the purchase of a commodity or service. The vertically integrated investor owned utility, public utility districts, municipal utilities, and rural electric cooperatives perform this function in a regulated market. Entities such as buyer cooperatives or brokers could perform this function in a restructured market.

Barrel (Bbl): A fluid measure equal to 42 U.S. gallons.

Baseload: The minimum amount of electricity delivered or required over a given period of time at a steady rate.

Btu (British thermal unit): The amount of heat needed to raise the temperature of 1 pound of water by 1° Fahrenheit at or near 39° Fahrenheit. The Btu is a convenient measure by which to compare the energy content of various fuels. One Btu is approximately equal to the energy released in the burning of one wood match.

Capacity: The amount of electric power delivered or required for which a generator, turbine, transformer, transmission circuit, state, or system is rated by the manufacturer.

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam) used for industrial, commercial, heating, or cooling purposes.

Commercial Electric Consumer: Generally, non-manufacturing business establishments (*e.g.*, hotels, motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises); health, social, or educational institutions; and governments. Street lights, pumps, bridges, and public services are included. A utility may classify a consumer as commercial whose demand or annual usage exceeds a specified limit.

Committee of Consumer Services (CCS): A committee within the Division of Public Utilities created by Title 54, Chapter 10. The committee participates in Public Service Commission proceedings to advocate for residential and small business consumers including agricultural businesses.

Combined Cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for use by a steam turbine in the production of electricity.

Congestion: Constraint on a transmission path that limits power transactions because of insufficient capacity. Congestion can be relieved by increasing generation or by reducing load.

Consumer Owned Utility (COU): As distinguished from investor-owned utilities, publicly owned utilities are owned and governed by their users.

Cost-Based Rates: A method traditionally used as the primary basis for setting electric rates for utilities. Under cost-based rates, the rates for utility service are based directly on the costs a utility incurs in providing electric service to its customers, by customer class, in relation to revenue collected from each customer class. Utility costs of service include estimated operating expenses, depreciation, taxes, and a return on investments.

Demand: The rate at which energy is delivered to or by a system, part of a system, or piece of equipment, at a given instant or averaged over any designated time period.

Demand-Side Management (DSM): The planning, implementation, and monitoring of utility activities that encourage consumers to modify patterns of electricity usage, including the timing and level of electricity use.

Distributed Generation: Small-scale generation that is commonly consumer owned and located near where the electricity is used. Examples include, residential-size fuel cells and microturbines powered by natural gas.

Distribution (electric): The process of delivering electric power at lower voltages from central substations to the point of end use. The distribution system “steps down” power from high voltage transmission lines to a level that can be used in homes and businesses.

Division of Public Utilities (DPU): A division within the Department of Commerce created by Title 54, Chapter 4a. Its activities include investigations, audits, settlement negotiations, and participation in Public Service Commission proceedings. Its objectives include promoting safe, healthy, economic, efficient, and reliable operation of utilities; providing for just and reasonable rates; and making the regulatory process simple and understandable.

Energy Source (fuel source): The source of energy that is converted to electricity through chemical, mechanical, or other means. Energy sources include coal, gas, petroleum products, water, uranium, wind, sunlight, geothermal, and other sources.

Federal Energy Regulatory Commission (FERC): A federal agency, established in 1977, which oversees the nation’s utility industry. It regulates the price, terms, and conditions of power sold in interstate commerce and of all transmission services. FERC is the federal counterpart to state utility regulatory commissions.

Fuel Oils: Distillates from the oil refining process that are used primarily for fueling power generation systems, fueling industrial process, fueling locomotives and ships, or heating.

Generation (electric): The process of producing electric energy by transforming other forms of energy; also, the amount of energy produced expressed in watthours (Wh).

Gigawatt (GW): One billion watts or one million kilowatts.

Green Power: An informal term for power produced from renewable resources such as wind, solar, geothermal, biomass, or small hydro.

Grid: A network of transmission lines and the associated substations and other equipment required to move power.

Industrial Electric Consumer: Generally, manufacturing, construction, mining, agriculture, fishing and forestry establishments. A utility may also classify industrial service by using SIC codes or based on whether a consumer's demand or annual usage exceeds a specified limit.

Investor-Owned Utility (IOU): A utility operated by a public corporation in which ownership shares are held by individual investors who supply the capital in expectation of earnings on their investments.

Kilowatt (kW): One thousand watts.

Kilowatthour (kWh): One thousand watthours.

Load: The amount of power that needs to be generated to supply demand.

Market-Based Rates: Rates that are established in a competitive market. These rates can be established through competitive bidding or through negotiations between the buyer and seller rather than set by a regulator.

Market Power: The ability of a single firm or a group of competing firms to control price or barriers to entry into a market, allowing them to raise prices above competitive levels and restrict output below competitive levels for a sustained period of time.

Marketed Production: Gross withdrawals less gas used for repressuring, quantities, vented and flared, and non-hydrocarbon gases removed in treating or processing operations.

MCF (mcf): One thousand cubic feet.

Megawatt (MW): One million watts.

Megawatthour (Mwh): One million watthours.

Municipal Utility (municipality): A utility that is owned and operated by a city or town. In most cases, municipal utility rates are set at the municipal level, either by the municipal administration or by a local utility board or commission. Municipal utilities often have access to low-cost power from federal hydroelectric projects, can obtain low interest loans, and they are exempt from income and other taxes on the federal and state levels.

Obligation to Serve (provider of last resort): The concept embodied in the statutes of most states governing the retail or end-use provision of electric service in which a utility is required to serve all consumers who request service, regardless of the relative profitability of the consumer, without unduly discriminatory prices. This obligation is the public policy requirement demanded in return for the granting of exclusive rights to serve a geographic area at retail.

Open Transmission Access: Enables all participants in the wholesale market equal access to transmission service, as long as capacity is available, with the objective of creating a more competitive wholesale power market. The Energy Policy Act of 1992 gave FERC the authority to order utilities to provide transmission access to third parties in the wholesale electricity market.

Peak Demand: The maximum load during a specified period of time.

Power: The rate at which energy is transferred or a measurement of capacity. Electrical energy is usually measured in watts.

Power Marketer (electric): An agent for generation projects who, in a restructured electrical market, sells power on behalf of the generator. The marketer may also arrange transmission or other ancillary services.

Power Pool: An association of two or more interconnected electric systems that have an agreement to coordinate operations and planning for improved reliability and efficiencies.

Public Service Commission (or public utilities commission): The state regulatory agency that governs retail utility rates and practices.

Qualifying Facility (QF): A cogeneration or small power production facility that meets certain ownership, operating, and efficiency criteria established by FERC pursuant to the Public Utility Regulation Policies Act.

Rate Base: The value of property used by the utility in providing service upon which a utility is permitted to earn a specified rate of return as established by a regulatory authority.

Regional Transmission Organization (RTO): An electric transmission system operator that is independent of power market participants (e.g., sellers of electric energy), controls the electric transmission facilities within a region, and has specific responsibilities for ensuring that the facilities are used to provide reliable, efficient, and nondiscriminatory transmission service. An RTO must be approved by FERC and meet requirements set by FERC regulations. The basic requirements for an RTO are found in FERC Order 2000. An RTO may be for profit or nonprofit; and may own transmission facilities, lease facilities, or operate facilities owned by others.

Regulatory Assets: Generally are costs that a public utility incurs as a result of regulatory decisions but that the public service commission determines should be recovered through rates over time. The payment obligation of ratepayers is carried on the books as an asset. Examples of regulatory assets include deferred taxes and pension costs. Similarly, regulatory liabilities would be obligations a utility has to its ratepayers that the public service commission determines should be paid or refunded over time.

Reliability: The degree to which electric power is made available to those who need it in sufficient quantity and quality to be dependable and safe. The degree of reliability may be measured by the frequency, duration, and magnitude of adverse effects on consumer services.

Renewable Energy: Energy obtained from sources that are essentially inexhaustible. Renewable energy resources include wood, waste, geothermal, wind, photovoltaic, and solar thermal energy.

Residential Electric Consumer: All primary and secondary private residences whether occupied or vacant, owned or rented, including single family homes, multi-family housing units, and mobile homes. Institutional housing such as school dormitories, hospitals, and military barracks generally are not included.

Retail Competition: A system under which multiple sellers of electric power and services can sell directly to retail customers, and retail customers are allowed to buy from more than one provider.

Rural Electric Cooperative (cooperatively owned electric utility): A consumer owned electric utility that is created to transmit and distribute power in rural areas. A rural electric cooperative can benefit from below-market financing from the Rural Utilities Service (formerly the Rural Electrification Administration), as well as low-cost power from federal hydroelectric projects. Rates for rural electric cooperatives typically are set by a board of directors elected from among the cooperative's members.

Short Ton: A unit of weight equal to 2,000 pounds.

Siting (electric): In Utah, the process of determining the location of a new generation, transmission, or distribution facility. Siting is typically market-driven and may involve approval by local governments (*e.g.*, comply with zoning). Siting differs from permitting which involves obtaining necessary permits from state and federal agencies for such things as environmental impacts.

Stranded Costs, Stranded Assets, or Transition Costs: Multiple definitions exist; generally refers to costs that were incurred by utilities to serve their customers with the understanding that state regulatory commissions would allow the costs to be recovered through electric rates. If these utility costs have not yet been recovered through electricity rates and now are above market costs, these costs would become "stranded" in competitive markets. They include costs such as above-market generation costs, and costs known as regulatory assets, such as deferred taxes. If market prices exceed the amount a utility would have earned under regulation, a utility would have benefits that are sometimes referred to as "negative" transition costs.

Substation: Facility equipment that switches, changes, or regulates electric voltage.

Therm: One hundred thousand British thermal units (Btu).

Transmission (electric): The movement of electricity over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

Transmission System (electric): An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers or is delivered to other electric systems. The transmission system within the United States is divided into three major grids.

Turbine: A machine for generating rotary mechanical power from the energy of a stream or fluid. Turbines convert the kinetic energy to mechanical energy through principles of impulse and reaction, or a mixture of the two.

Unbundling (electric): Electric service is traditionally provided on a bundled basis, meaning that generation, transmission, and distribution services are provided as a single package. By unbundling, the packaged offering of the various services that make up traditional utility service are separated into discreet, separately-priced components. Unbundling would allow the customer to select a different supplier or source for each of the components required to obtain a product or service.

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

Watt: The electrical unit of power. The rate of energy transfer equivalent to one ampere flowing under a pressure of 1 volt at unity power factor.

Watt-hour (Wh): An electrical energy unit of measure equal to 1 watt of power supplied to or taken from an electric circuit steadily for 1 hour.

Wellhead: The point at which the crude oil (or natural gas) exits the ground. Following historical precedent, the volume and price for crude oil production are labeled as "wellhead," even though the cost and volume are now generally measured at the lease boundary. In the context of domestic crude price data, the term "wellhead" is the generic term used to reference the production site or lease property.

Wellhead Price: Represents the wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas; gathering and compression charges; and state production, severance, and similar charges.

Wholesale Sales: Energy supplied to other electric utilities, cooperatives, municipals, and federal and state electric agencies for resale to ultimate customers.

Prepared by the Office of Legislative Research and General Counsel. Sources include: Presentation, "The FERC's Rule on Regional Transmission Organizations" (June 8, 2000); RTO-West Development Process Glossary of Terms (2000); Dept. of Natural Resources, The Utah Energy Statistical Abstract: Sixth Edition (1999); U.S. Eng. Info. Adm., Glossaries; Edison Electric Institute, "Defining the Terms of a Changing Electric Industry" (February 1997); Washington State Community, "Trade and Economic Development's 1997 Biennial Energy Report"; The Large Public Power Council, "Glossary"; and Southern States Energy Board, "Emerging Competitive Issues Relating to the U.S. Electric Utility Industry: A Primer" (May 1996).

Appendix B

California's Electricity Crisis

CALIFORNIA'S ELECTRICITY CRISIS

Following this cover sheet are two summaries of California's electricity crisis.

- *Electric Energy "Crisis" from Utah's Perspective* prepared by the Utah Public Service Commission and found at <<http://www.psc.state.ut.us/elec/EnergyCrisis.htm>> (visited Oct. 27, 2001)
- *Subsequent Events – California's Energy Crisis* prepared by the Energy Information Administration, U.S. Department of Energy and found at <<http://www.eia.doe.gov/cneaf/electricity/california/subsequentevents.html>> (visited Oct. 27, 2001)

Developments in California continue to be very dynamic and therefore it is difficult to provide a static summary that includes all events in California. Although these summaries do not include events of recent months, the summaries are excellent overviews of the core facts related to California's electricity crisis.

In late September 2001, the California Public Utilities Commission suspended a consumer's direct access to independent power retailers. The action has been characterized as further dismantling California's restructuring law enacted in 1996. Issues remain as to the future role of the California Public Utilities Commission and the Department of Water Resources which made significant emergency power purchases during the crisis. See EIA, Electricity Restructuring Weekly Update (Sept. 21, 2001).

In September, 2001 California suspended a consumer's ability to have direct access or choice of the customer's power provider.

ELECTRIC ENERGY "CRISIS" FROM UTAH'S PERSPECTIVE

Utah Public Service Commission

There has been much discussion about the looming electric utility energy crisis in the media. Reports indicate that wholesale electricity prices in California have increased as much as a hundredfold, while some residential and other retail customers have seen price increases of threefold or more. Many are concerned that similar price increases may occur in Utah and want our state government to prevent it. This is a brief explanation of problems confronting the electric utility industry in the West and the possible effects on Utah.

BACKGROUND

First unfortunately, some of the horror stories coming out of California are true. California was on the brink of blackouts this past summer and has actually had them this winter. Electricity prices in the California wholesale market have been, if only briefly, 100 times higher than they were just last year. Two of its major utilities are nearly bankrupt. To understand the cause of these problems, one must understand the nature of the electricity market. Electricity is a unique commodity. It has no real substitutes, it cannot be stored, the supply and demand varies by hour and season, and immediate price signals from supplier to final customers do not exist. Given these characteristics, the wholesale electricity market can be extremely volatile with dramatic price fluctuations.

About 18 months ago, electricity (generation) in the Western wholesale market sold for about \$16 to \$35 per MegaWatt-hour, (MWH). This translates into a cost of about 1.6 to 3.5 cents per kiloWatt-hour (kWh). A kiloWatt-hour will power a 100 Watt light bulb for 10 hours. In the last six months, Western wholesale prices have risen to \$250 per MWH or 25 cents per kWh and have peaked at \$2000 per MWH for brief periods of time. Utah Power residential ratepayers currently pay about 6.3 cents per kWh. About 3 cents of this are attributed to the actual generation of electricity. The transmission, distribution and general administration and overhead costs to deliver power to households and businesses make up the rest.

CALIFORNIA AND THE WESTERN MARKETS

There are a number of reasons for the tremendous jump in wholesale electricity prices. It should be understood that the entire western electricity grid is interconnected and power can flow virtually anywhere, except when there are transmission constraints. At many times, the West is a single market, so high prices in California can affect the entire region. Over the last 15 years and until recently, there has been a vast surplus of generation capacity and wholesale prices have been low. Utilities came to depend on the wholesale market for power to supply new customers because it was a cheaper source of supply than building new plants. Unfortunately, most utilities in the West adopted a similar strategy of depending on the wholesale market. The result is that very few new plants were built by regulated utilities and almost none were built in California. To make the problem worse, the California economy has recovered from its recession in the 1990s and the demand for electricity surged beyond expectations.

Weather has also been a factor. The past few years have seen above normal amounts of precipitation with more water available for the hydroelectric plants in the region. This year's precipitation levels are slightly below normal. Last summer, California and the West experienced

extended heat waves that increased the demand for electricity as people used their air conditioners more. This winter has been colder than normal, reversing a trend of three abnormally warm winters, affecting both the natural gas and the electricity markets. So, what was once a vast surplus of power has quickly disappeared with times of actual shortage.

Rising wholesale electricity prices are also a direct result of the increasing cost of natural gas. Gas prices have increased from \$2.50 per decatherm to around \$10 per decatherm. California has seen prices in the \$20 to \$40 range. This has an adverse impact on electricity prices because new generating resources are designed to use natural gas. Roughly speaking, one can convert \$1 per decatherm into 1 cent per kWh. So \$10 per decatherm translates into electric power that costs 10 cents per kilowatt-hour to produce. A large portion of California's electric generation as well as the surplus power uses natural gas as its fuel.

In addition, the industry has been in transition with many states changing the way utilities operate. Before this restructuring of the industry, most states regulated their electric utilities. Under cost-of-service regulation, a utility is given an exclusive territory in which to sell power; in return it gives up its right to unilaterally set prices. Instead the utility must submit prices to state regulatory commissions for approval. Regulated prices are based on a utility's costs. Utilities with higher costs have higher rates. Utah Power, fortunately, has relatively low costs and attendant low rates. The average price for all Utah customers is around 5.16 cents per kWh. California under regulation was the highest cost state in the West with average prices of just over 9 cents per kWh.¹

As a result of its high prices, California restructured its electric utility industry to introduce competition with the hope that lower prices for California customers would result. The California legislature passed a restructuring law that abandoned cost-of-service regulation and encouraged the utilities to sell a portion of their generation to other suppliers. The sale of generation occurred to a greater extent than anticipated. The law requires all producers of power in California to sell power through a bidding process to a central authority called the California Power Exchange which in turn sells the power back to the utilities. The law does not apply to municipally owned utilities. The California bidding process was designed to develop a competitive generation market and take advantage of a surplus of power. Unfortunately, this bidding system produces extremely high prices when generation resources are in short supply.

There are three major investor-owned utilities in California. Two of them operate under a price freeze and cannot pass the higher costs of wholesale market purchases on to their customers. These two utilities are close to bankruptcy. The third utility is not subject to the price freeze and has passed some of these higher costs of wholesale purchases on to customers. The rising rates have caused a public outcry. California's regulatory agencies and legislature are contemplating policies to correct the problems.

UTAH'S POSITION

Utah's major investor-owned utility, PacifiCorp, doing business here as Utah Power, is based in Portland, Oregon. PacifiCorp is a wholly-owned subsidiary of Scottish Power. The Company's Utah operations are regulated by the Utah Public Service Commission under cost-of-service regulation. Prices are approved by the Commission and are set to allow the Company the opportunity to recover Utah's share of the costs of producing electricity including a reasonable return on investment. Until recently, the Company had more generation than it needed. The

excess was sold on the wholesale market. This year with strong growth in demand and the sale of a power plant, the Company must rely more heavily on the wholesale market to purchase power to meet its obligations. A failure in November of one of PacifiCorp's generators has resulted in the need for even more purchases of electricity in the wholesale market. In years past, wholesale power was cheap. This year, it is expensive. Reliance on wholesale power will result in higher costs for the Company. Assuming that these purchases are legitimate and reasonable, they will result in higher rates. The Company has requested a rate increase to cover the higher costs.

Nonetheless, Utah is in a far better position than California and other states that have deregulated since such states must depend more on the wholesale market to purchase power. PacifiCorp's generation costs are relatively low; its generation comes mostly from coal-fired and hydroelectric plants. To the extent that the Company can avoid wholesale market purchases, Utah Power customers benefit from an efficient, low-cost generation system. No matter how the Company decides to meet its growing need for supply, the Commission will require the Company to find the least-cost alternative to provide power. Unfortunately, the lead-time before a power plant can be built and operated is long and wholesale market prices may stay high indefinitely.

Some of Utah's cities and towns have their own municipal power companies and may be in a precarious or advantageous position depending on their sources of power and whether they must buy from or can sell into the wholesale market. Most of these municipal power companies have access to Colorado River Storage Project power. This hydroelectric power is inexpensive, but it cannot supply all the cities' needs. Cities, like Springville, which rely on the wholesale market to meet their power needs have seen large price increases. Long-term contracts, building new power plants or energy conservation could ease the problem.

CONCLUSION

Utah electricity consumers, compared to those in other states in the West, are in a relatively good position, particularly when compared to states in which electric utilities depend more on the wholesale market for power. With cost-of-service pricing, Utah Power's rates should not rise as much as in those states, even though rate increases must be anticipated. The Utah Public Service Commission will analyze any rate increase request to make sure that it is in the public interest before a change is made.

¹ These are 1998 figures taken from the Energy Information Administration's report, "The Changing Structure of the Electric Power Industry 2000: an Update@

SUBSEQUENT EVENTS – CALIFORNIA'S ENERGY CRISIS

Energy Information Administration, U.S. Department of Energy

California's new wholesale power market and customer choice program, which started in March, 1998, worked fairly well for about a year and a half. In the summer of 2000, retail electricity prices in southern California reached all time highs, and generation capacity shortages forced temporary power outages in northern California.

Since then, coverage of California's energy crisis has been reported on television and in newspapers around the country. The complexity of problems and the contrasting views and sometimes conflicting solutions offered by politicians, government officials, and other stakeholders make it difficult to follow what has happened.

To help bring the situation into better focus, the following paragraphs present a broad perspective of the crisis.

Three Major Problems

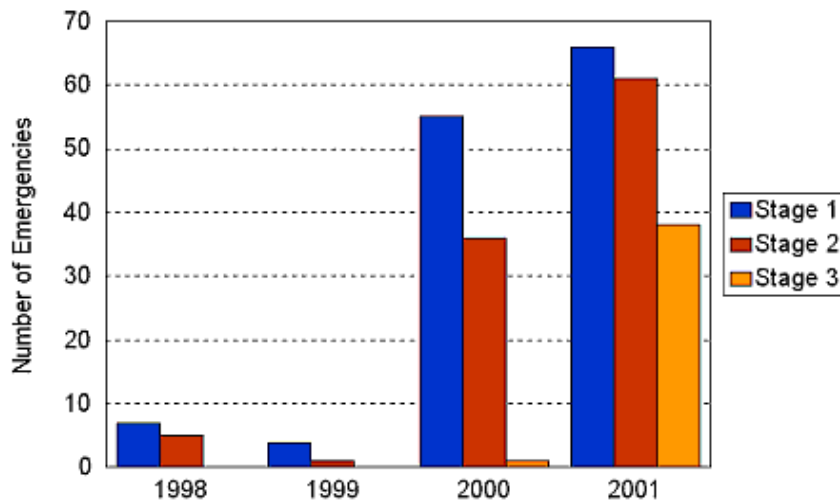
California's energy crisis can be grouped broadly into three interrelated problems including (1) precipitous increase in wholesale electricity prices, (2) intermittent power shortages during peak demand periods, and (3) the deterioration of the financial stability of California's three major investor-owned utilities (IOUs)—Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E).

1. **High Wholesale Electricity Prices:** The price of wholesale electricity sold on California's newly created California Power Exchange (CalPX) start[ed] escalating around June 2000, reaching unprecedented levels over the remainder of the year. From June 2000 through July 2000 wholesale electricity prices increased on average 270 percent over the same period in 1999.¹ By December 2000 wholesale prices on the CalPX cleared at \$376.99 per megawatthour (mwh), over 11 times higher than the average clearing price of \$29.71 per mwh in December 1999.²

High wholesale prices resulted in a steep, but temporary increase in retail electricity prices in southern California in the summer of 2000. This is what happened. In July 1999, SDG&E's retail price freeze was eliminated as called for in California's industry deregulation plan, and SDG&E customers were exposed to unregulated retail electricity prices (PG&E and SCE's retail customers were, at that time, still protected from high retail prices by rate freezes imposed by the restructuring plan). SDG&E could now pass through the high wholesale prices to retail customers, and by July 2000 residential electricity rates had increased to approximately 16 cents per kilowatthour, up from about 11 cents per kilowatthour in July 1999.³ To stop the increase in retail prices, the California legislature established a ceiling of 6.5 cents per kilowatthour on the energy component of electric bills for residential, small commercial, and lighting customers of SDG&E.

2. **Intermittent Power Shortages:** Since 1999, California has experienced a significant increase in emergency conditions that in some instances have necessitated rotating blackouts (a rotating blackout is an involuntary curtailment of electricity usage). Stage 3 emergency

notifications, which may necessitate rotating blackouts, have increased from 1 in 2000 to 38 through May 22, 2001 (see graph). Stages 1 and 2 notifications have increased from 91 in 2000 to 127 through May 22, 2001. In some instances Stage 2 requires voluntary curtailment of power usage.



Source: California Independent System Operator

Stage 1 emergency Notice is declared any time that an operating reserve shortfall (less than MORC minimum) is unavoidable or, when in real-time operations, the operating reserve is forecast to be less than minimum after utilizing available resources.

Stage 2 emergency notice is declared any time it is clear that an operating reserve shortfall (less than 5 percent) is unavoidable or, when in real-time operations, the operating reserve is forecast to be less than 5 percent after dispatching all resources available.

Stage 3 emergency notice is declared any time it is clear that an operating reserve shortfall (less than 1.5 percent) is unavoidable or when in real-time operations, the operating reserve is forecast to be less than 1.5 percent after dispatching all resources available.

3. **Three investor-owned utilities face severe financial problems:** Because of high wholesale power prices, and the imposition of retail price caps restricting recovery of these costs, California's three major IOUs are experiencing severe financial problems.

The worst case is PG&E, which on April 6, 2001 filed for protection under Chapter 11 of the U.S. Bankruptcy Code. PG&E estimated that since June 2000 they have spent \$9 billion for wholesale power with no reimbursement for those expenditures (referred to as unrecovered power costs).⁴ SCE is in a similar situation to PG&E with respect to power purchase costs. In November 2000, SCE estimated their unrecovered power purchase costs at \$2.6 billion.⁵ SDG&E estimated their unrecovered power costs at \$447 million by December 2000.⁶

Factors Contributing to the Energy Crisis

Although there is not universal agreement on the causes of California's problems, there is general agreement among industry leader[s] on a core set of factors contributing to the energy crisis.⁷

1. Investment in new power generation capacity has not kept pace with the increasing demand for electricity. California's generation capability decreased 2 percent from 1990 through 1999, while retail sales increased by 11 percent. Further, no new generation capacity has been constructed in California for over a decade.
2. To meet its demand for power, California relies on about 7 to 11 gigawatts of out-of-state generation capability, of which a significant portion is produced by hydroelectric power in the northwestern United States. Reduced hydroelectric power generation caused by unusually low water levels in the northwest resulted in a reduction of imports to northern California.
3. During 2000, approximately 10 gigawatts of generation capability was out of operation during some of the high demand times, which contributed to power shortages.
4. Path 15, the high voltage transmission line connecting southern California to northern California, became congested at times, reducing the flow of surplus electricity capacity in southern California to meet shortages in northern California.
5. Exacerbating the power shortages, many independent power generators were reluctant to sell power to PG&E, and SCE because of their financial troubles, and the uncertainty of receiving payment for the power sold.
6. Shortcomings of the wholesale electric market rules established under the State's restructuring plan contributed to the increase in wholesale prices. Specifically, under the market rules, PG&E, SCE, and SDG&E were required to buy all of their power through the CalPX. They could not enter into forward long-term contracts for energy. When spot market wholesale prices increased because of power shortages and increasing generation costs, the utilities had no option but to purchase the high-priced power.
7. An increase in natural gas prices, and the high costs of meeting California's power plant emissions requirements also contributed to the increase in wholesale electricity prices.
8. The three IOUs paid high wholesale prices for their power, but were unable to recover their costs because retail electricity prices were frozen. This situation, as noted above, resulted in the three IOUs accumulating enormous debts.

Actions Taken to Contain the Energy Crisis

The following actions have been taken by California and Federal Government authorities to help mitigate the energy crisis, and to put into place permanent solutions to the problems California has been experiencing since the summer of 2000:

June 28, 2000: The California Public Utility Commission (CPUC) reduced its buy-side price cap to \$500 per megawatt for the real-time, ancillary services, and congestion management markets. The CPUC further reduced its price cap to \$250 per megawatt on August 1, 2000.

August 3, 2000: The CPUC issued a rate stabilization plan for SDG&E. The plan was designed to provide electricity price relief for some residential and commercial customers served by SDG&E.

August 30, 2000: The California legislature passed a law (AB265) that established rate caps of 6.5 cents per kilowatt-hour for SDG&E customers. The rate cap was retroactive to June 2000, and it will be effective through 2002.

December 14, 2000: The Secretary of Energy initiated an order requiring certain generators and power marketers to supply electricity to California's power system operator in order to help avert power outages.

December 15, 2000: The Federal Energy Regulatory Commission (FERC) orders remedies for California's wholesale power markets. The order, among other things, eliminated the mandatory requirement that the three IOUs sell and buy all of their power through the CalPX. The FERC also terminated the CalPX's wholesale rate schedule that enabled it to continue to operate. CalPX discontinued operating in January 2001.

January 4, 2001: The CPUC granted PG&E and SCE an interim surcharge to raise rates. The temporary surcharge was in effect for 90 days.

February 1, 2001: Governor Gray Davis signed into law AB 1X authorizing California's Department of Water Resources to purchase power under long-term contracts for sale to PG&E and SCE. This law was passed because, in part, the two utilities were financially strapped and unable to obtain long-term power contracts with power generators. This law is significant in that the State now becomes an active participant in California's power industry.

March 27, 2001: The CPUC approved a 3-cents-per-kilowatt-hour average rate increase in an effort to support the financially strapped PG&E, and SCE.

April 5, 2001: Governor Gray Davis released a plan to resolve the State's energy problems and to protect residents from volatile energy markets. The plan contains numerous elements aimed at increasing power supply, improving energy conservation, and stabilizing the electricity industry in California.

April 9, 2001: Governor Gray Davis announced an agreement with SCE, and Edison International, SCE's parent company. In the agreement, SCE will sell their transmission system to the State of California for \$2.76 billion. The sale is designed to help SCE recover from its financial difficulties. It must be approved by the State Legislature to be completed.

April 25, 2001: The FERC announced a plan to bring more stability, better control, and price relief to California's energy market. Among other things the plan gives the California Independent System Operator (California ISO operates the State's transmission system) more control of power plant outages, establishes price mitigation measures based on market principals, and requires new reporting obligations that will allow the FERC to better monitor the energy market in California.

May 14, 2001: The FERC announced regulatory actions to increase reliable energy supplies in California and other Western States. The FERC streamlined regulatory procedures for wholesale power sales and for certification of natural gas projects. It also urged all hydroelectric licensees to assess the potential for increased generation capacity at their respective facilities.

May 15, 2001: In March the California Public Utility Commission (CPUC) agreed to raise retail electricity prices to customers of PG&E and SCE. Today, the CPUC released a rate structure indicating exactly which customer classes will have their rates increased and by how much. Overall retail rates will increase an average of 19 percent, but low-income customers, medical baseline customers, and residential customers using power below 130 percent of baseline usage amounts will not have a rate increase.

May 16, 2001: Governor Gray Davis has signed Senate Bill 6X creating the California Consumer Power and Conservation Financing Authority. The California Power Authority will have broad powers to construct, own, and operate electric power facilities, and finance energy conservation projects.

May 22, 2001: Governor Davis signed another emergency bill, Senate Bill 28X, designed to shorten the times for reviewing an application for a new power plant, and re-powering (i.e., upgrading) an existing power plant. The new law also allows new owners to pay emission mitigation fees in lieu of obtaining actual emission offsets when the new owner can show that emission offsets are not available.

May 28, 2001: U.S. Department of Energy Secretary Abraham ordered the Western Area Power Administration (WAPA), a 15 State power marketing arm of the U.S. DOE, to complete planning and to seek outside financing for increasing California's transmission capacity. This action aims at reducing power transmission bottlenecks on Path 15, a high-voltage power line connecting northern and southern California (see item 4 under Factors Contributing to the Energy Crisis).

As further actions develop, they will be added to this site.

Endnotes

1. California Public Utility Commission, "California's Electricity Options and Challenges Report To Governor Gray Davis," August 2, 2000.
2. California Power Exchange website <http://www.calpx.com>.
3. California Public Utility Commission and Electricity Oversight Board, California's Electricity Options and Challenges, Report to Governor Gray Davis, August 2, 2000.
4. Pacific Gas & Electric Company, Press Release April 6, 2001.
5. Southern California Edison Press Release, November 17, 2000
6. San Diego Gas and Electric Press Release, February 6, 2001.
7. Factors contributing to California's energy crisis have been documented in the following reports: Federal Energy Regulatory Commission, *Order Directing Remedies For California Wholesale Electric Markets*, December 15, 2000; California Public Utilities Commission and Electricity Oversight Board, *California's Electricity Options and Challenges, Report to Governor Gray Davis*, August 2, 2000; Anjali Sheffrin, Director of Market Analysis, California Independent System Operator, *What Went Wrong With California Electric Utility Deregulation?*, April 19, 2001.

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Appendix C

Governor Leavitt's Utah Energy Policy

GOVERNOR MICHAEL O. LEAVITT'S UTAH ENERGY POLICY

January 2001

Utah will have reliable, affordable, sustainable, clean energy.

ECONOMIC PRIORITIES

First, Availability of Adequate Energy Supplies – Utah residential consumers and businesses will have reliable, high quality power and energy resources.

Second, Reasonable Prices – Energy prices in Utah will reflect the development and use of the state's low-cost resources.

Third, Diversity and Flexibility of Supply – Energy supply will have system redundancy and a diversification of fuel mix and technologies.

PRINCIPLES

Regional Participation – Utah recognizes that it is part of an integrated energy system and partners with neighboring states in developing regional solutions to common problems. Utah's contribution to increasing power supply in the region is expected to take advantage of the abundant coal reserves within the state. Utah also supports open access to transmission lines and the creation of a properly formed Regional Transmission Organization and encourages the state's transmission-owning utilities to become members.

Quality Environment – Utah will maintain a clean and safe environment. The following *Enlibra* principles will guide policy positions:

- **National Standards, Neighborhood Solutions** – Responsibilities will be assigned at the right level.
- **Collaboration, Not Polarization** – Utah will use collaborative processes to break down barriers to meet our energy needs and find solutions to them.
- **Reward Results, Not Programs** – Utah will move to a performance-based system to achieve its energy policy.
- **Science for Facts, Process for Priorities** – Utah will separate subjective choices from objective data gathering in making its decisions.
- **Markets Before Mandates** – Utah will pursue economic incentives and markets as opposed to regulatory matters whenever appropriate.
- **Change a Heart, Change a Nation** – Environmental understanding is crucial to Utah's energy future.
- **Recognition of Costs and Benefits** – Utah will make sure all decisions affecting infrastructure, development and environment are fully informed as to their economic consequences to Utah.
- **Solutions Transcend Political Boundaries** – Utah will use appropriate geographic boundaries for environmental air problems, which will require the state to develop regional solutions with its neighbors.

Efficiency and Conservation – Public policies will support sustained investments in cost-effective demand-side management and increased use of energy efficient technologies and services in Utah’s economy.

Consumer Protection – Consumers will be protected against unfair business practices and have continued access to reasonably priced energy supplies. Low-income consumers will continue to have affordable energy.

- **Utah Resources** – Utah’s abundant supply of natural resources, such as coal, will be leveraged to meet Utah’s energy needs now and into the future.
- **Investment** – Private investment by utilities and non-utility providers is required to meet our energy needs. Investment occurs only when there is an opportunity for adequate financial returns.
- **Prosperity** – Economic prosperity is linked to the availability and affordability of energy. Utah will plan for our energy needs with economic optimism.

PROJECTIONS

Estimated Electrical Need – Utah’s current estimate of additional electrical requirements over the next ten years is 1,800 to 3,100 MW. This additional electrical demand will require new supply to be built in Utah and across the western power grid. Utah’s actual requirements could vary depending on a number of factors such as: economic growth, price elasticity, technological change, conservation, plant retirements, and the amount of planned reserves. Additional transmission will need to be built to accommodate the growing supply of electricity.

Estimated Natural Gas Need – Utah’s current estimate of additional natural gas annual firm usage over the next 10 years is 32 million decatherms. The firm design peak day is expected to increase by at least 200,000 decatherms. To meet the growing demand for natural gas, additional pipeline capacity will need to be built.

Estimated Transportation Fuel Need – Utah estimates that the demand for petroleum products in 2010 will increase by 287 million gallons from 2000. The additional increase is projected as follows: 160 million gallons of motor gasoline, 99 million gallons of diesel fuel, and 28 million gallons of jet fuel. Pipeline expansion will be necessary to meet these needs.

AGENDA

We will cultivate an ethic of conservation and energy efficiency. We will promote the development of new energy supplies sufficient to meet Utah’s growing demand over the next 10 to 15 years, while making a contribution to regional energy requirements. We will streamline state regulatory processes and encourage expedited federal action. We will establish a single point review process that coordinates reviews across state departments and with federal agencies. We will not short-change environmental requirements, but can and will fast-track regulatory response. We will promote a vibrant and open electrical transmission system through a regional transmission organization. The Regional Transmission Organization must guarantee open access to transmission and provide incentives for an expansion of the transmission grid.