2000 Annual Review and Forecast of

UTAH COAL

Production and Distribution

July 2001

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EXECUTIVE SUMMARY

While the U.S.'s 2000, coal production was the fourth highest ever, Utah fell short of its all-time high set four years earlier by just 151,000 tons. The U.S. produced 1.076 billion tons of coal, the seventh consecutive year that production exceeded the one-billion-ton mark. Utah produced 26.9 million tons of coal, which was the second highest production level ever. The U.S. exported 58.5 million tons of coal in 2000, which was lower than the previous fifteen years but at the same level of the previous year while Utah exports were higher than the previous two years' and came in at 3.0 million tons. The value of coal produced in Utah was $456 million in 2000.

Utah distributed 27.6 million tons of coal in 2000, the second highest ever. Electric utility consumption within Utah contributed to this increased distribution, by about one and a half million tons, while exports and industrial consumption outside of Utah contributed to this increased distribution by lesser amounts. During 2001, production should decrease to 25.3 million tons. This is the level at which Utah coal production should stay within the next 5 years.

Utah's coal mines remain the most productive underground mines in the U.S. Productivity at just under two tons per miner-hour (tpmh) in 1980 and 1981, has been on the rise ever since, reaching new highs almost every year. In 1996 Utah's mines failed to achieve a new record partly because of the start-up and development of the Willow Creek mine. In addition, production per miner hour in 1997 fell below that of 1996's due to other difficulties encountered in the Willow Creek mine and the shortage in the rail transportation system. During 1999 Utah achieved the third highest productivity with 6.09 tpmh, a figure only exceeded in 1995 and 1998. During 2000 Utah coal miners achieved the highest productivity ever by producing at the rate of 6.91 tpmh. Of note, the industry expects another productivity record in 2001.

Utah's high productivity is largely credited to excellent management, a capable engineering and geological staff, a high degree of mechanization, and a highly skilled workforce. These factors, in conjunction with high seam thickness and favorable geology, have led to more competitive coal prices for Utah coal which, in turn, have enhanced and guaranteed the success of the state's coal industry.

Electric utilities consumed the bulk of Utah's coal production. The Hunter, Huntington and Carbon plants of PacifiCorp's Utah Power and Light (UP&L) and Intermountain Power Agency's (IPA) Intermountain Power Plant (IPP) purchased 14.3 million tons and consumed 13.0 million tons in 2000. Together these four plants purchased more than half of all Utah production, making the electric utility sector the state's best coal customer. Bonanza plant consumed 1.53 million tons of Colorado coal for its generation. Also in 2000, electric utilities and cogeneration plants outside of Utah consumed 6.6 million tons of Utah coal. Altogether, electric utilities consumed 77.7 percent of the coal produced in Utah. Including those volumes exported to the Pacific Rim, electric utilities consumed 88.7 percent of all the coal produced in Utah.

In 2000, industrial coal consumption was Utah coal's second largest consuming sector (3.53 million tons). Kennecott consumed a little more than half of the 0.63 million tons of Utah's industrial coal consumed in Utah. Geneva Steel and various cement and lime plants in Utah consumed the remaining half. Out-of-state industrial consumption amounted to 2.90 million tons in 2000 and was used primarily by chemical and cement plants in California and cement plants in Nevada while about 0.63 million tons went to the other mountain states. The third consuming sector was exports to the Pacific Rim (2.96 million tons). Far behind the exports, residential and commercial customers consumed almost 0.22 million tons of Utah coal.

2000 Utah Coal Production

Production of coal in Utah surpassed 26.9 million tons, the second highest production level in 131 years, exceeded only by the 1996 level of 27.1 million tons. Gross production topped 26,944,000 tons and net production came in at 26,920,000 tons (See Appendix, Tables 1 and 2).

MINER PRODUCTIVITY

Production in 2000 increased from 1999 levels by 1.6 percent and employment decreased by more than 9.3 percent, which caused productivity per miner per year, per day, and per hour to rise. Miner productivity increased from 14,374 tons per year in 1999 to 16,100 tons per year in 2000. The number of days worked per year decreased from 259.7 to 252.7, and coal production per miner per day rose from 55.4 tons to 63.7 tons. Productivity per miner hour increased considerably from 6.09 tons per miner hour to 6.91. An increase of 13.5 percent is unprecedented in Utah's history of the coal industry.

During 2000, a total of 1,672 miners produced 26,920,000 tons of coal. Working an average of 252.7 days per year (422,514 miner days), miners produced an average of 6.91 tons per hour (See Appendix, Table 1).

MAJOR COAL FIELDS

Again, the Wasatch Plateau coal field was the major coal producer in 2000 (See Appendix, Maps 1 and 2). More than 85 percent of Utah's 2000 coal production (23.0 million tons) came from this field while the Book Cliffs accounted for the remaining 15 percent (4.0 million tons). The Emery coal field, the only other significant producer in recent years, produced no coal between 1992 and 2000. During 2001, the Wasatch Plateau coal field is expected to produce 21.0 million tons, representing 83 percent of total production. In contrast, about 4.3 million tons or 17 percent of Utah's coal production is expected to come from the Book Cliffs coal field. For the tenth year in a row, no production is likely from the Emery coal field. Even though this field has a very good potential for development. (See Appendix, Table 3).

Utah Coal Industry Production, Employment, Productivity and Prices

	Production Million Short Tons	Employment No. of Employees	Productivity Tons/Miner Hour	Prices $/Ton
1981	13.80	4,166	1.99	26.87
1982	16.91	4,296	2.05	29.42
1983	11.82	2,707	2.59	28.32
1984	12.25	2,525	2.94	29.20
1985	12.83	2,563	2.80	27.69
1986	14.26	2,881	3.08	27.64
1987	16.52	2,650	3.25	25.67
1988	18.16	2,559	3.69	22.85
1989	20.51	2,471	4.42	22.01
1990	22.01	2,791	4.10	21.78
1991	21.87	2,292	4.79	21.56
1992	21.02	2,106	5.13	21.83
1993	21.72	2,161	5.47	21.17
1994	24.44	2,024	6.01	20.07
1995	25.05	1,989	6.41	19.11
1996	27.07	2,077	5.91	18.50
1997	26.43	2,091	5.57	18.34
1998	26.60	1,950	6.19	17.83
1999	26.49	1,843	6.09	17.36
2000	26.92	1,672	6.91	16.93
2001	25.29	1,492	7.07	17.54

2001 values are forecast

COAL PRODUCTION BY COUNTY

On a county basis, during the 1960s and 1970s Carbon produced much more than Emery with Sevier producing small amounts. During the 1980s coal production from Emery at times surpassed that of Carbon with Sevier showing a significant gain. During the last decade Emery's production at times was two to three times as much as Carbon with Sevier gaining on Carbon.

Skyline mine, which is now owned by Canyon Fuel Corp., and Starpoint mine of Cyprus Plateau shifted production from leases in Carbon to those in Emery County. The balance of coal production by county shifted dramatically from Carbon to Emery since these two mines combined accounted, at the time, for about 27 percent of Utah's total coal production. The actual shift by both mines started in 1991, became more pronounced in 1992, and was nearly completed in 1993 (See Appendix, Table 4). Over time, however, Skyline mine production started shifting back to Carbon County, resulting in more production from Carbon County leases than those of Emery County. Compared to the Skyline mine, the Starpoint mine shift was more accelerated, becoming even more pronounced when Cyprus Plateau moved most of its coal operation from the Starpoint mine to the Willow Creek mine, located entirely in Carbon County. With Cyprus Plateau discontinuing coal production in Utah, production from Emery should continue to be about 3 times that of Carbon. Sevier county production is still increasing and for 2001 it should surpass the 6 million ton mark.

FEDERAL, STATE, AND COUNTY LANDS

Coal mined from federal leases during 2000 came in at 20.8 million tons. Its contribution as a percentage of total state production was about 5.6 percent below 1999 figures, representing a significant decrease in percent of production from federal lands. This reduction came about mainly as a result of Genwal shifting its coal production from federal leases to its state leases, Utah Fuel reducing production, and partly as a result of Plateau shifting production from Starpoint mine to Willow Creek mine, which has some fee land.

State lands production did not reach the one-million-ton mark from 1981 to 1991. In 1992, production easily surpassed this level with 1.384 million tons of coal produced and again in 1993 with a record of 1.682 million tons of production. In 1994, production from state lands decreased to 1.227 million tons, a figure still higher than at any time in the 1980s. During 1995, production from state lands was cut to less than half of the 1994 level. In 1996 it was lower by more than 125,000 tons than in 1995, in 1997 it decreased again by 107,000 tons to a new low of 339,000 tons and, finally in 1998, it decreased further by 42,000 tons to another new low of 297,000 tons.

But, during 1999 production from state had a significant increase and again in 2000 there was another notable increase. As a percentage of total production, state lands' production had historically only accounted for between 1 to 5 percent, which increased to above 6 and 7 percent in 1992 and 1993; in 1994, it fell back to 5 percent; in 1995 to 2.3 percent; in 1996 to 1.6 percent; in 1997 to 1.3 percent; and in 1998, to 1.1 percent which was the lowest percentage production level in more than two decades. This percentage production as well as tons of production increased ten fold in 1999 as Soldier Canyon shifted nearly all of its production from Soldier Canyon mine to Dugout Canyon mine and the Crandall Canyon mine of Genwal shifted 60 percent of its production from federal leases into the state leases. During 2000 the percentage of state land production to total production increased to almost 15 percent and the tonnage surpassed 4 million.

Production from county lands has always been minimal and erratic. During 2000, county-owned lands did not produce any coal.

FEE LANDS

For the first time in a decade, coal production from fee lands slipped below 2 million tons (1.735 million tons) in 1992. In 1993, production decreased again by 50 percent to 826,000 tons, dropping further

in 1994 to 415,000 tons or 1.7 percent of total production. In 1995 production moved up by 11 percent to 461,000 tons or 1.8 percent of total production, in 1996, fee lands came in at 614,000 tons or 2.3 percent of total production and again in 1997 there was a further increase to 928,000 tons or 3.5 percent of total production. In 1998, production from fee lands went up to 4.9 percent and during 1999 there was a further increase to 5.2 percent of the total production while, on a tonnage basis, production increased by more than 41 percent (from 928,000 to 1.312 million tons). During 2000 there was a further increase both in tonnage and in percentage of total. Production from fee lands surpassed 2 million tons resulting in a 7.8 percent of total. By contrast, coal produced from fee lands in 1983 represented almost 40 percent of total production (See Appendix, Table 5).

LONGWALL PANELS AND CONTINUOUS MINERS

During 2000, seven operating longwall panels accounted for 78.9 percent of production or 21.2 million tons. This amounted to an average of more than 3 million tons of coal production per panel per year. Eighteen continuous miners produced a total of 5.7 million tons of coal for an average of 316,560 tons per machine per year. In recent years, however, some machines have produced between 400,000 to nearly 600,000 tons per year.

UTAH COAL MARKETS: DISTRIBUTION OF UTAH COAL

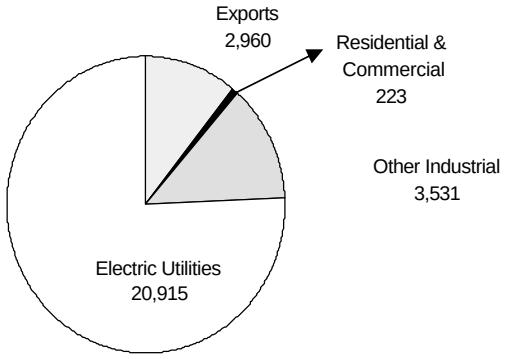
Distribution of Utah coal, which from 1990 to 1993 had been relatively unchanged and remained within 1 percent of 21.6 million tons, jumped by 6.9 percent in 1994 from 1993 levels. Between 1994 and 1995, distribution increased by 8.5 percent and increased another 9.3 percent by 1996. In 1997 however, distribution fell back to the 1995 level, but increased again to the second highest distribution in 1998. Distribution of coal hit an all-time high of 23.44 million tons in 1994 and set yet another record of 25.44 million tons in 1995, but 1996 distribution surpassed these levels with 27.82 million tons, an increase of more than two million tons, however, in 1997 it fell back to 25.41 million tons and stood at 26.97 million tons in 1998, falling slightly to 26.18 million tons in 1999.

During 2000 distribution passed all previous records, with the exception of 1996 and stood at 27.63 million tons. Distribution of Utah coal to consumers in Utah reached 15.0 million tons, surpassing all other Utah coal consumption in the 131 years of Utah's coal industry. Distribution to consumers in other states totaled 9.67 million tons, about 0.2 million tons more than in 1999, while overseas exports amounted to 3.0 million tons, about 0.14 million tons more than the 1999 export level.

ELECTRIC UTILITY MARKETS

Over two decades ago, electric utility consumption of coal surpassed the combined consumption levels of industrial coal and coke plant coal and became the top market for Utah coal operators. Today about 77.7 percent of Utah's coal production is consumed to generate electricity in Utah and other states. Including exports, about 88.7 percent of Utah's coal production is consumed to generate electricity. This amounts to 86.4 percent of Utah's total coal distribution.

2000 Distribution of Utah Coal by Consuming Sector



Thousand Short Tons

Out-of-State Markets

Distribution of Utah coal to out-of-state markets during 2000 decreased by about 4 percent from the 1999 level. Utah shipped a total of 6.6 million tons to out-of-state electric utility and cogeneration customers,[1] a decrease of 0.27 million tons from the previous year's level.

About 66.5 percent of this shipment went to coal-fired power plants and cogeneration facilities in Nevada and California. Tennessee received the lion's share of Utah's electric utility coal to the east. Genwal was the major shipper to Tennessee with smaller amounts from White Oak and Co-op. The total shipment to Tennessee increased by one-half million tons from 1999 levels (See Appendix, Table 6).

Distribution to Nevada

In Nevada, four electric power generation facilities burn

[1] *Editor's Note:* The Energy Information Administration, in adhering to a more restricted definition of "electric utility" and "other industrial" coal consumption, classifies cogeneration consumption under the definition of "other industrial" coal. For purposes of this report, coal shipped for consumption to cogeneration facilities is considered "electric utility" consumption, since its main purpose is to generate electricity for sale.

bituminous or subituminous coal. Three of these plants, Nevada Power Company's Reid Gardner plant, Sierra Pacific Power Company's North Valmy plant, and Pinon Pine Power plant, burn Utah coal.

Reid Gardner Plant

In 2000, the Reid Gardner plant, rated at 636 megawatts (MW), purchased a total of 1.9 million tons of coal from six Utah mines and burned 2.0 million tons for a net generation of 4,354 gigawatt hours (GWh) of electricity. Of note, all of the coal purchased by the Reid Gardner plant came from Utah.

Before 1993, Reid Gardner's four units relied almost entirely on Utah coal. One of Nevada Power's four major contracts with Utah coal producers was with ARCO, which originally supplied the coal from its Gordon Creek mines and, later, from its Trail Mountain mine. In September 1992, ARCO sold Trail Mountain to PacifiCorp, but continued to fulfill its contractual obligation to Nevada Power from its Utah stockpile and through local purchases. However, between 1993 and 1997, ARCO fulfilled the major portion of its obligation from its West Elk mine in Colorado. During 1998, Nevada Power started purchasing coal from Cyprus Plateau's Willow Creek Mine. These purchases continued throughout 1999 though on a smaller scale due to a mine fire in the Willow Creek mine. Prior to the Willow Creek mine closure in 2000 the Reid Gardner plant purchased about ten percent of its consumption from this mine.

North Valmy Plant

The two units of Sierra Pacific Power Company's North Valmy plant (jointly owned with Idaho Power Company) have a combined generation capacity of 521 MW and require about 1.45 million tons of coal per year. In 2000, Utah coal shipments to the North Valmy plant totaled 1.55 million tons, which matched the 1999 levels. Sierra Pacific did not purchase any coal from Black Butte Coal Company near Rock Springs, Wyoming as it did in previous years.

In 2000, North Valmy's two units burned 1.73 million tons of coal to generate 3,895 GWh of net electricity. During 2001, this plant is expected to consume 1.50 million tons and generate 3,370 GWh of net electricity.

Pinon Pine Power Plant

In September 1991, the Department of Energy's Clean Coal Technology Programs (CCTP) identified nine projects for future development. One such project is the Pinon Pine Power plant, a 107 MW electric generation plant located at Sierra Pacific Power Co.'s Tracy Station, located 17 miles east of Reno, Nevada.

The project's main objective is to demonstrate commercial feasibility of a low-Btu gas combustion turbine fed by an air-blown, pressurized, fluidized-bed Integrated Gasification Combined Cycle (IGCC). During August 1992 the DOE and Sierra Pacific Power Co. (SPPC) signed a cooperative agreement to carry out the project. The DOE and SPPC provided the required funding of $308 million on an equal basis.

The core of the project is a fully conventional combined-cycle power plant capable of operation on natural gas. The M.W. Kellogg Co. provided the technology for this advanced IGCC. The company used a Kellogg Rust Westinghouse (KRW) version of the World War II vintage coal gasification technology.

The project's Environmental Impact Statement (EIS) was completed on November 8, 1994, and construction began in February 1995. In 1996, the power plant was completed and the unit went into commercial operation in December of that year.

The coal gasifier, completed in early 1997, converts coal into clean burning gas to be consumed in a General Electric combustion turbine. This unit will operate for the next four years as a demonstration unit and the cost of fuel and operation will be shared equally by the DOE and SPPC.

The unit's net design efficiency is about 40.7 percent, equivalent to a heat rate of 8,390 Btu/kWh, and is the most efficient coal-based unit in the country. Because the fuel produced by the gasifier is cleaned, the amount of NO_X and SO_2 is reduced by over 90 percent.

After this fuel is burned in the gas turbine to generate electricity, the excess heat is used to produce steam which is then used in a steam turbine generator to produce more electricity.

The unit's advanced design boosts efficiency by 20 percent over that of conventional power generators, a process which results in 25 percent less CO_2 emission for the generation of the same amount of electricity. This unit also uses 20 percent less water to generate the same amount of electricity as conventional generators, which makes it a very desirable unit in the arid region of the American West.

The IGCC is designed to consume different grades of coal. On a regular basis, central Utah operators will supply the required coal, which could amount to 320,000 tons per year. At times other coal, specifically high-sulfur coal from the Midwest, may be consumed to evaluate the technology's potential application elsewhere in the U.S. or abroad. This unit's fuel flexibility allows it to use natural gas, coal or any combination of the two for maximum fuel cost savings. The unit's other advantage is its ability to generate electricity by consuming only natural gas when the gasifier is down for repair or maintenance.

During 1996 the coal purchased for this unit was minimal and for 1997 it was just over 10,000 tons; however, the plant operated only on natural gas during the entire year. This plant used very little coal in 1998 and the final streamlining of the gasifier was complete by the end of 1999 however, this unit did not use any coal during 2000.

California

About 0.99 million tons of Utah coal went to cogeneration facilities in California. The electric utility market for Utah coal in California presently includes six coal-fired cogeneration units.

Stockton California Plant

Stockton, California is the site of the first coal-fired cogeneration facility ever to burn Utah coal. This unit is operated by Air Products & Chemicals, Inc. and began commercial operation in March 1988. This 49.9 MW unit is capable of consuming 220,000 tons of coal per year to generate about 425 GWh of net electricity.

In 2000, this plant purchased 126,000 tons of coal, all of which came from Utah. The plant consumed 121,000 tons of coal to generate a total of 496 GWh of gross or 449 GWh of net electricity. Just under 33 GWh of the electricity and all of the steam by-product were used by an adjacent corn wet milling plant owned by Corn Product Co. International. Pacific Gas and Electric Co. (PG&E) purchased the remaining 411 GWh. During 2001, this plant will purchase 120,000 tons of coal and is planning to generate 450 GWh of net electricity, most of which will be sold to PG&E.

Mt. Poso

In May 1989, a second coal-fired cogeneration facility was commissioned. It is owned by Mt. Poso Cogeneration Co., a consortium of Ahlstrom Development Corp., Pacific Generation Co. and Bechtel Enterprises, Inc. This 49.9 MW plant is located in the San Joaquin Valley and is operated by Pyropacific Operating Company and Pacific Generation Company. During 2000, Mt. Poso purchased 138,000 tons of Utah coal as well as 47,000 tons of pet coke and burned the same amount to generate 414 GWh of gross or 373 GWh of net electricity that was sold to the Pacific Gas & Electric (PG&E).

This was a marked improvement over last year's purchase of 110,000 tons of coal. The operations in the Mt. Poso Field-West used the steam by-product for enhanced oil recovery. During 2001, this unit will consume 145,000 tons of coal along with 47,000 tons of pet coke to generate 428 GWh of net electricity.

ACE Plant

The largest coal-fired cogeneration facility in California, with 96 MW of installed electric generation capacity, is owned by ACE Cogeneration Co., which is in turn owned by Ahlstrom Development Corp., Constellation Holding, Inc. and the Kerr McGee Chemical Company. This unit is located in Trona, California and started operation in September 1990. North American Chemical

Company's two soda ash plants adjacent to the ACE plant use the steam by-product. This unit has the capacity to burn 300,000 to 400,000 tons of coal per year to generate between 650 to 850 GWh of electricity. During 2000, the firm purchased 422,000 tons of Utah coal and burned 391,000 tons to generate 880 GWh of gross electric generation. Southern California Edison Co. purchased the net 804 GWh of electricity. This unit is expected to burn about 303,000 tons of coal as well as 72,000 tons of pet coke to generate 743 Gwh of net electricity during 2001.

Rio Bravo Plants

Ultra Power, Constellation and Hadson are the owners of a twin cogeneration plant, comprised of two 38.5 MW units located in Bakersfield (Rio Bravo Poso and Rio Bravo Jasmin). Construction of this twin plant started in December 1987 and was completed in March 1990. The plant started commercial operation in September 1989 and came on-line early in 1990.

During 2000, Rio Bravo Poso purchased 68,000 tons of Utah coal and burned 72,000 tons to generate 327 GWh of gross or 293 GWh of net electricity, which was ultimately sold to PG&E. The Rio Bravo organization used the steam by-product in its oil field for enhanced oil recovery (EOR) operations. During 2001, this plant will consume 75,000 tons of coal and will generate 312 GWh of gross electricity or 278 Gwh of net electricity.

Rio Bravo Jasmin purchased 60,000 tons of Utah coal and burned 70,000 tons to generate 317 GWh of gross or 285 GWh of net electricity which was sold to Southern California Edison. Rio Bravo oil field also used the steam by-product of this unit for EOR operations. During 2001, this plant is expected to purchase and burn about 64,000 tons of Utah coal, and generate close to 246 GWh of net electricity.

Energy Factor Plant (POSDEF)

The Energy Factor plant is a cogeneration facility located in Stockton, California. This 45 MW cogeneration plant was first bought by Sithe Energy in 1990 and then sold to a partnership of National Power Company and ESI in 1993. ESI, a wholly owned subsidiary of Florida Power Company, originally backed only this transaction, but later decided to take a more active role in the plant's daily operation. This plant is now operating under the name of Port of Stockton District Energy Facility (POSDEF) Power Company L.P. The steam by-product from this plant goes to three processing facilities within the same industrial complex: California Cedar Products Company, which manufactures cedar wood products including Dura Flame logs and Cargill and Liquid Sugar, both of which import raw sugar from Hawaii and manufacture various food products for human and animal consumption. This cogeneration unit requires up to 200,000 tons of coal per year. The coal supply contract for this company is with Oxbow Carbon and Minerals, Inc. of Colorado (previously known as Pacific Basin Resources). During 2000, this company purchased 176,000 tons of coal, all of which came from Utah. This unit consumed 146,000 tons of coal to generate 312 GWh of net electricity. For the foreseeable future, it is likely that all of the requirement of this unit will be supplied solely by Utah.

Shipments of coal for consumption by electric power plants in Nevada are expected to increase by 8.5 percent from the 2000 level to 3.74 million tons in 2001.

During 1993, the amount of coal sold to electric utilities within the U.S. excluding Utah, Nevada and California - the main users of Utah coal - nearly doubled from 556,000 to 1.09 million tons. During 1994, this consumption reached 1.71 million tons, more than 200 percent over 1992 and about 60 percent over 1993 levels. In 1995, this consumption shot up to 3.4 million tons, which was almost twice that of 1994. In 1996 this consuming sector surpassed 3.90 million tons, an increase of nearly 15 percent over 1995, but in 1997 this consumption decreased to 2.44 million tons. During 1998 Utah had an increase of more than 40 percent to 3.44 million tons, but in 1999 it went down to 2.47 million tons. During 2000 this consuming sector went down slightly to 2.2 million tons. States receiving electric utility coal from Utah includes: Ten-

nessee (1.66 million tons), Oregon (179,000 tons), Virginia (118,000 tons), Illinois (109,000 tons), Pennsylvania (50,000 tons), Wisconsin (34,000 tons), Missouri (34,000 tons), and Nebraska (21,000 tons). During 2001, this consumption should increase by 29 percent from 2.2 million tons to 2.90 million tons, mostly due to increased shipments of coal to Illinois. Because of this increase, Utah coal distributed to all other states for electricity generation is expected to increase from 6.6 million tons in 2000 to 7.7 million tons in 2001.

Utah Markets

Utah coal consumed in Utah to generate electricity amounted to nearly 13.1 million tons in 2000. Utah coal shipped to electric utility plants was 14.3 million tons, which exceeded expectations.

Hunter Plants

PacifiCorp's Hunter units (I, II, and III), with availability of 84.56 percent and utilized availability of 97.17 percent, consumed 4.227 million tons of coal mostly from PacifiCorp's Cottonwood/Trail Mountain mine and some from its Deer Creek mine to generate 9,527 GWh of net electricity. During 2001, this plant should be working at about 78.06 percent capacity factor consuming 4.0 million tons of coal to generate 9,026 Gwh of net electricity which would be about 5.3 percent below 2000 levels.

Huntington Plants

Huntington's Units (I and II), with plant availability of about 91.29 percent and utilized availability of 98.28 percent, consumed 3.03 million tons of coal produced from PacifiCorp's Deer Creek mine to generate 7,053 GWh of net electricity. During 2001, this plant should be working at 87.67 percent availability and 98.21 percent utilized availability consuming 2.90 million tons of coal to generate 6,750 GWh of net electricity. This will be just 4.3 percent below the 2000 generation level.

Distribution of Coal to Utah Electric Utilities

2001 value is forecast

Carbon Plant

The Carbon plant, with availability of 90.86 percent and utilized availability of 98.25 percent, consumed more than 630,000 tons of coal to generate 1,372 GWh of electricity. Nearly two-thirds of the coal consumed in this plant was purchased from the Genwal Coal Company. During 2001, this plant should be working at 92.03 percent availability and 96.33 percent utilized availability consuming 639,000 tons of coal to generate 1,359 GWh of net electricity. It is very likely that the simple arithmetic average capacity factor for PacifiCorp's three plants could be as much as 2.78 percent lower in 2001 than in 2000, and coal consumption could decrease from 7.89 to 7.55 million tons. In 2001, coal production for distribution to Utah electric utilities is likely to be much less than the decrease in consumption, which means that stockpiles would decrease to some extent.

IPP Plants

In 2000, the Intermountain Power plant (IPP), of the Intermountain Power Agency (IPA), operated with an availability of 93.3 percent. The plant's two units, with a total nameplate capacity of 1,640 MW, burned 5.22 million tons of coal to generate 13,123 GWh of net electricity for the state of California. During 2001, this plant will burn approximately 4.66 million tons

of coal to generate 12,794 GWh of electricity, nearly all of which will be sold outside of Utah. All of this coal may not come from Utah as there are indications that negotiations on coal purchase contracts with producers in Colorado had occurred previously. The higher availability of hydropower in the Northwest at times causes a decrease in coal burned during the spring and summer runoff. There are some indications that the runoff in 2001 would be greater than that of 2000.

Bonanza Plant

During 2000, Deseret Generation and Transmission's (DG&T) Bonanza plant with a rated peak capacity of 420 MW, achieved an availability of 78.16 percent and a load factor of 74.44 percent. This plant consumed about 1.53 million tons of coal to generate 2,921 GWh of net electricity. DG&T purchased 1.53 million tons of coal from the Deserado mine, located just 36 miles east of the Bonanza plant in Colorado. During 2001 the availability will increase to 91.13 percent, and the capacity factor to 92.00 percent coal consumed will equal 1.78 million tons, resulting in 3,592 GWh of electricity generation.

UTAH COKING COAL MARKETS

The market for coking coal in Utah is limited to Geneva Steel Company's operations in Vineyard, Utah, which is the only integrated steel mill operating west of the Mississippi River. Located 45 miles south of Salt Lake City, the firm manufactures hot-rolled steel plate, sheet, and pipe for markets primarily in the western and central U.S. Geneva's customers include service centers, distributors, steel processors and various end users which include: manufacturers of welded tubing; highway guardrail; storage tanks; railcars; ships; and agricultural and industrial equipment. In recent years, Geneva has undergone an extensive modernization program intended to enhance its competitive position by reducing operating costs, expanding product lines, improving quality and significantly increasing throughput capacity. With these improvements, Geneva Steel strengthened its position as a low-cost steel producer while becoming one of the of the industry's more environmentally advanced steel mills. The company acquired the steel mill and related facilities in a leveraged buy-out from USX Corporation in August 1987.

Coal purchased by Geneva Steel to make coke totaled 0.941 million tons during 2000. The plant consumed about the same amount of coal to make coke for steel production.

As Geneva Steel improved its blast furnace productivity, coke making at the plant fell short of iron production demand. During 2000, Geneva overcame this constraint by directly purchasing 195,000 tons of coke from China, in addition to its own manufactured supply, to produce about 2.0 million tons of raw steel. To meet its requirement of low- to mid-volatile hard coking coal, Geneva Steel negotiated long term contracts with eastern producers and a multi-year transportation contract with the Union Pacific railroad.

During 2000, Geneva bought 20,000 tons of low-volatile Pennsylvania coking coal from Cooney Brothers Coal Company of Cresson, Pennsylvania. In addition, Geneva bought 317,000 tons of high-volatile Colorado coking coal from the Sanborn Creek mine of Oxbow Carbon and Mineral, Inc. (previously known as Pacific Basin Resources) of Littleton, Colorado. This coal is from the same seam as the coal Geneva purchased from Bear Coal Company, Inc. of Somerset, Colorado during the early 1990s.

Geneva also bought and consumed 118,000 tons of mid-volatile Virginia coking coal from Pittston mine and 70,000 tons from Green Valley mine. This company is part of Massy Coal Company.

Furthermore, Geneva purchased 118,000 tons of high quality West Virginia coking coal from True Energy's Fire Creek mine and 105,000 tons from Commonwealth Coal Company's War Eagle mine situated just west of Balt which is on county road 99 about 15 miles due west from Beckley in the south western part of West Virginia and 36,000 tons from Rocklick mine. In addition, Geneva obtained 18,000 tons

of high quality West Virginia coking coal from AMCI.

Geneva also purchased 197,000 tons of mid volatile coal from Fording Coal Company's Fording Eagle mine located in the southeast corner of British Colombia just 70 miles across the border.

Geneva bought 5,000 tons of high volatile coking coal from West Ridge mine of West Ridge Resources Inc. of Carbon County, Utah. This is the first time that Geneva has bought coking coal from a Utah mine after its coal purchase contract with Sunnyside Coal Company ran out in February 1994. This coal is from the lower Sunnyside seam which has coking quality.

During 2001, Geneva will purchase about 986,000 tons of coal and 116,000 tons of coke from China to produce 2.5 million tons of raw steel.

OTHER INDUSTRIAL COAL MARKETS

Out-of-state Markets

Since 1989, when shipments of coal to other states for industrial consumption peaked at 2.4 million tons, consumption for this market sector has been declining, reaching only 2 million tons in 1992. During 1993, shipments increased for the first time in four years and in 1994 this trend continued as six operators shipped 2.32 million tons of industrial coal to ten states outside Utah. In 1995, there was a slight increase to 2.4 million tons but in 1996 this consumption decreased slightly to 2.34 million tons and in 1997 there was a further decrease to 2.16 million tons. During 1998 this consumption hit an all time high of 2.75 million tons, but in 1999 it pulled back to 2.53 million tons. During 2000 another all time high was established at 2.89 million tons. The largest recipient of industrial coal was California's chemical and cement manufacturing plants with more than 67.7 percent of all industrial coal shipped from Utah. Nevada received 301,000 tons for use mainly in cement plants. This level was slightly lower than the 336,000 tons consumed in the previous year. Shipments to Idaho amounted to 273,000 tons. Illinois' shipments ranked fourth with 196,000 tons followed by Washington which purchased 83,000 tons. There was also a shipment of 80,000 tons to Arizona. In total, out-of-state industrial consumption should increase by a quarter of a million tons to 3.15 million tons in 2001.

Utah Markets

In 2000, industrial consumption of coal in Utah decreased by 23 percent to 639,000 tons from 830,000 tons the previous year. Kennecott Copper consumed more than 56.7 percent of the total to generate electricity.

Kennecott Copper

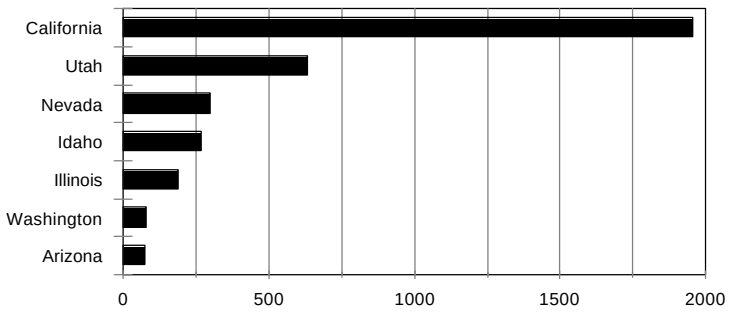
During 2000, Kennecott purchased 355,000 tons of Utah coal and consumed 362,000 tons, along with 2.9 billion cubic feet of natural gas, to generate 783 GWh of gross electricity or 717 GWh of net electricity. The coal purchase in 2000 decreased by more than 20 percent in comparison with the previous year's figure.

In 2001, Kennecott's coal-fired electric generation will jump 13.5 percent. Total coal consumption will amount to 411,000 tons.

Cement Manufacturers

Prior to 1995, Utah's cement manufacturers suspected increasing demand, due to the growth of the housing industry, and began to expand their production capacity. Production

2000 Utah Distribution of Utah Industrial Coal by State
Thousand Short Tons



capacity also increased due to the I-15 reconstruction project and various other state and county road expansions. Both Holnam and Ashgrove started to increase production prior to and during 1996 and by 1997 were producing considerably more cement. During 1998 both had reached the highest level of production and by 1999 they were producing at full capacity. During 2000 they continued full capacity production and consumed 186,000 tons of coal.

Holnam

The Devil's Slide plant of Ideal Basic Industries, Inc., a leading cement producer based in Denver, Colorado, has been a part of Holnam since 1986. A series of mergers and acquisitions established Holnam, Inc., as one of the largest cement companies in North America. Dundee Cement Co., Santee Cement Co., Northwestern States Portland Cement Co., Ideal Basic Industries and United Cement Co. have all been brought together under the Holnam banner. Holderbank controls 89.3 percent of Holnam's common stock and, in the consolidation process, Holderbank's share in St. Lawrence cement was brought into Holnam, which now holds a 60 percent interest in St. Lawrence.

In 1986 Holderbank acquired a 66 percent interest in Ideal Basic Industries, Inc., which had encountered some financial difficulties and required financial restructuring. The nine-plant Ideal Basic system fit in well with the Dundee Cement Co. system, offering new markets to the West, Southwest, and Mid-Central regions of the U.S. The whole establishment, comprised of 19 cement plants and 113 distribution terminals in most U.S. states and three provinces of Canada, is now referred to as Holnam.

The Devil's Slide plant switched from Wyoming coal to natural gas in 1991 and continued to burn natural gas until August 1992. In that year, the price of natural gas increased and coal consumption became more economical. During the remainder of 1992, the Devil's Slide plant used 27,000 tons of coal. A significant event occurred when this plant converted from natural gas to coal; it did not automatically switch to Wyoming coal as it had in the past but, instead, started using Utah coal.

During 1993, the Devil's Slide plant purchased 60,000 tons of coal, 40,000 tons of which came from Utah and the remainder from Wyoming. In 1994 the plant's purchase of Utah coal increased to 59,000 tons; while purchasing only 4,000 tons of additional coal from Wyoming. By 1995 the plant purchased only Utah coal (25,000 tons) and used 30,600 tons of coal in total. Some of this coal came from the stockpile and was used with natural gas for summer use and treaded tires and diaper plastics (materials obtained from the Kimberly Clarke plant in Ogden) to produce 351,000 tons of cement. In 1996 this plant purchased and consumed 29,000 tons of Utah coal plus some natural gas, tires from Salt Lake Treading Co., and more diaper plastics to produce 350,000 tons of cement. During most of 1997, Devil's Slide plant purchased 26,000 tons of Utah Coal which was consumed in the old plant along with 0.623 billion cubic feet of natural gas as well as 6,100 tons of tires and 4,200 tons of diaper plastics to produce 243,000 tons of clinkers. On November 11, 1997, the new plant commenced operations and did not consume any coal but consumed 0.2 billion cubic feet of natural gas along with 700 tons of tires and 900 tons of plastic to produce 46,000 tons of clinkers to the end of the year. In 1998 the plant purchased 57,000 tons of coal and burned 56,000 tons along with 292 million cubic feet of natural gas, more than 4,000 tons of tires and 6,000 tons of plastic material to produce 544,000 tons of clinkers. During 1999 Devil's Slide plant purchased 66,000 tons of coal and consumed the same amount along with 127 million cubic feet of natural gas, more than 10,000 tons of tires and 5,800 tons of plastic material to produce 641,000 tons of clinkers. During 2000 this plant purchased 64,000 tons of coal and burned slightly more than that along with 120 million cubic feet of natural gas 11,500 tons of tires in addition to 6,000 tons of plastic material to produce 660,000 tons of clinkers.

For 2001 this plant will purchase and burn more than 62,000 tons of Utah coal to produce well over 619,000 tons of clinker. Some natural gas (183 million cubic feet) will also be consumed along with similar amount of treaded tires and diaper plastics.

Ashgrove Cement

During 1996 Ashgrove Cement expanded operations to increase clinker production by 20-25 percent. The project actually started in 1995 and was completed in the early fourth quarter of 1996. Incorporation of the project into the operation took place in May and June of 1996 when the total clinker producing operation was shut down. During the remainder of 1996 and early 1997 Ashgrove solved the expansion problems but the production did not reach the intended target until June 1997 when Ashgrove decided to increase the capacity of the main fan. Ashgrove also added a 30,000 ton cement silo for more storage capacity. Throughout 1997 additional changes were made improving the clinker production capacity.

With completion of a new waste oil refining unit north of Salt Lake City, the economics of burning waste oil are now unfavorable. Further changes in the configuration of the clinker production system has also made using tires more difficult. During 2000 Ashgrove purchased 120,000 tons of coal, and burned 122,000 tons in addition to 9,000 gallons of diesel fuel and 32,000 mcf of natural gas to produce 878,000 tons of clinkers which went into making 867,000 tons of cement. Usually the amount of cement produced is about four percent greater than the amount of clinkers because of the added gypsum. But, during 2000 not all the clinkers produced were used to make cement. This cement plant is now at peak of production and should remain at this level of production and coal consumption for the foreseeable future.

Several industrial firms, ranging from Geneva Steel to lime plant operations, purchased nearly 98,000 tons of coal. Industrial coal consumption in Utah should remain around 700,000 tons per year for at least the next two years.

RESIDENTIAL AND COMMERCIAL COAL MARKETS

Out-Of-State Markets

Since the mid-1980s, when consumption stabilized at about 300,000 tons per year, demand for residential and commercial coal has been on the decline. By 1990, it stood at only 59,000 tons. In 1991, sales to the residential and commercial sector increased to 76,000 tons and in 1992, to 81,000 tons. During 1993, out-of-state consumption jumped by 63 percent to 134,000 tons; by 1994, this sector consumed 308,000 tons. This unusual increase was due mainly to consumption of 193,000 tons by Illinois, which did not buy any Utah coal in 1995. This consumption decreased to 51,000 tons in 1996, its lowest ever, though increasing to 60,000 tons in 1997. By 1998 this sector increased to 82,000 tons and stood at 75,000 tons in 1999. During 2000 demand went up by almost 100 percent to 141,000 tons. Washington bought the largest quantities. In contrast, Nevada and Idaho purchased smaller amounts and Colorado had a minimal amount (See Appendix, Table 6). Consumption by the residential and commercial sectors in these states will probably remain stable in the short term, though with some fluctuations. For 2001, a 38 percent decrease is very likely.

Utah Markets

During 2000, residential and commercial coal consumption in Utah decreased by 23.3 percent to 82,000 tons. This level of consumption was by far the lowest in the past 20 years.

In some counties such as Emery, Wayne, Millard, Juab, Sanpete, Sevier, and Carbon approximately 15 to 20 percent of homes are heated with coal. In comparison, the Wasatch Front counties of Salt Lake, Utah, Weber and Davis consume very little coal for home heating. Commercial consumption of coal for space heating in Davis, Weber and Salt Lake counties is also low.

There are two elements that affect residential and commercial consumption: environmental standards set by various air quality control agencies and the cost of fuel. When the price of natural gas is low there is a strong tendency on

the part of the residential and commercial sectors to consume more natural gas but, as the price of natural gas increases, the less expensive coal becomes more attractive in spite of environmental considerations. Utah coal producers might not see an increase in consumption of Utah coal by residential and commercial markets unless the price of natural gas increases again. For 2001, coal consumption will increase by 12 percent within the state of Utah as the price of natural gas goes up, but will decrease in states outside of Utah, resulting in lower total consumption than in 2000.

Coal Imports

Utah imports coal for coking applications and coal-fired power generation in Uintah County. There are no imports bound for the industrial, residential, or commercial sectors. In 2000, companies operating in Utah imported 2.47 million tons of coal.

Utah previously imported low to mid-volatile hard coking coal to mix with its own high volatile coking coal for the Geneva Steel Mill. Since February of 1994, when the coal supply contract between Geneva and Sunnyside Reclamation and Salvage Company expired, Utah has relied entirely on out-of-state coking coal and coke for steel production, thus accounting for the major increase in the amount of imported coal to Utah. Only in 2000 Geneva purchased a small amount of coal from West Ridge mine which had started operation in Carbon County. Imports of industrial coal to Utah were used primarily at Holnam's Devil's Slide plant located in Morgan near the Wyoming border. However, this plant's consumption is now being met by Utah coal, and further imports were ceased in favor of Utah coal. The only other coal imports to Utah are about 1.53 million tons of electric utility coal used in DG&T's Bonanza plant.

The Bonanza plant purchased 1.53 million tons of coal from the Deserado mine in Colorado for its 2000 electric generation. In 2001, imports will increase to 2.72 million tons as Bonanza continues its higher level of electric generation. Geneva Steel's coal imports however should stay at the same level.

The Devil's Slide plant purchased a little more than 9,000 tons of Wyoming coal when it switched from natural gas during the second half of 1992. During 1994, this plant purchased 4,000 tons of industrial coal from Wyoming. During the 1995-99 period it did not purchase any out-of-state at all. Furthermore, Holnam is not expected to purchase any Wyoming coal in 2001.

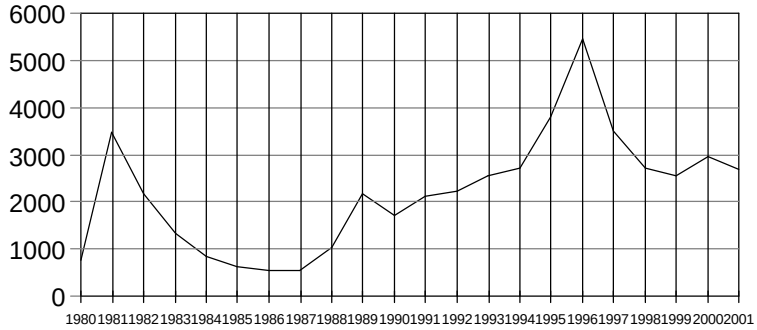
There is no indication that coal will be imported into Utah for use by the residential and commercial sector in 2001. Altogether, the imports of coal into Utah are expected to increase to 2.72 million tons in 2001 from 2.47 million tons in 2000.

OVERSEAS EXPORTS

During 2000 exports increased to 2.96 million tons, to slightly more than one half of the 1996 export level.

Utah is uniquely situated in the coal export market. Its low cost, low sulfur and high Btu coal is closer to West Coast ports for shipment to Pacific Rim countries than any other U.S. coal source. In the past

Utah Coal Exports to Pacific Rim Countries
Thousand Short Tons



U.S. coal exceeded the cost of other coals in the Pacific Rim region, despite offering several quality advantages such as high Btu and low sulfur content. In addition to the coal quality, U.S. coal producers are considered the most reliable, an attribute of Utah's coal that Pacific Rim countries value very highly.

The cost of production and price of Utah coal steadily decreased over the past decade, largely due to increased productivity. As a result, Utah coal became nearly as competitive on a price-per-million Btu basis as coal produced in other countries. By 1995, Utah coal became quite competitive with Australian and other coals in the Pacific Rim. In 1996 the price of coal stayed relatively flat in the Pacific Rim market; indeed, a $0.10 drop per ton of coal did not have a significant effect. During 1997 Pacific Rim consumers managed to extract a $2.50 per ton concession from the Australian producers. Utah coal producers were hoping to keep their concession below the $1.00 level but were not totally successful in that endeavor. The level of concession ultimately matched the average of what the Australian coal producers agreed to and what Utah coal producers were hoping to give.

While the Pacific Rim market was one of the fastest growing markets in the world prior to 1997, the financial problems which surfaced during 1997 signaled a downturn in consumption and therefore the generation of electricity. This trend continued during 1998 and Utah's exports to the Pacific Rim was also down 22 percent from the previous year.

During 1999, the Australian dollar was devalued further with respect to the American dollar and since all the coal contracts are written in American dollars the Australian miners start receiving much higher numbers of now devalued Australian dollars than before. This allowed them to give much greater discounts and still get more Australian dollars for their coal than before, which put the Utah coal operators in a greater competitive disadvantage and the coal exports slipped further.

During 2000 energy prices began to rise for most of the year. In the crude oil market the West Texas Intermediate (WTI) was above $30 per barrel. On October 12, WTI was above $36 and through most of October and November the WTI was around $35. The spot price of natural gas had gone from $2 per thousand cubic feet (mcf) to $6 and later to $9. It was in this environment that the spot price of coal started to increase and the export prices of coal went up with it. For 2001 this market should stay strong and any fluctuation should not be more than a quarter of a million tons from the 2000 export level.

Activities Of Utah Coal Operators

PacificCorp Energy West

Energy West Mining Co. experienced a successful year in 2000 achieving a total production of 8,430,784 tons of coal from the Deer Creek and Trail Mountain mines. Each mine utilized one longwall production section and two continuous miner development sections. The Deer Creek Mine produced 4,257,790 tons from the northern portion of the East Mountain Property known as the North Rilde Canyon area. The production from the Trail Mountain mine was from the last remaining federal leases within that property to contain reserves. The production from the Trail Mountain Mine totaled 4,172,994 tons in 2000.

Each of the mines produced coal with relatively low ash throughout the year. As a result, the preparation plant at the Hunter Power plant was not used other than as a coal blending facility. All of the coal produced was consumed in the PacifiCorp owned Huntington, Hunter and Carbon stream fired power plants.

PacifiCorp continues to operate as a subsidiary of Scottish Power. Energy West Mining Company continues to operate as a subsidiary of PacifiCorp.

On April 12, 2000, PacifiCorp announced the closure of the Trail Mountain mine scheduled for the fall of 2001 but by October it was announced that the closure would take place in early 2001 because of some safety issues. After skipping the penultimate panel the mining of the last panel was completed in March 2001. The labor force was mostly laid off, some retired, and a few were transferred to the Deer Creek mine. Machinery and equipment were taken out. The mine was sealed and is now abandoned.

Canyon Fuel Company, LLC

Overall, the coal industry saw the demand for coal start to increase late in 2000. The increasing demand for Utah coal late in the year, while initially quite subtle, has become more pronounced in the early months of 2001. That market change finally translated into rising prices for Utah coal. To some coal users and producers, the current higher prices and tighter market are not sustainable. However, Arch Coal, Inc., a majority owner of Canyon Fuel Company (CFC), listed in its 2000 Annual Report several underlying conditions, which exist and which it believes will sustain the current market strength. They are:

- Coal producers throughout the United States are essentially sold out for 2001 and 2002 availability is dwindling.
- Utility stockpiles are at 25-year low levels.
- Most of the low-cost, incremental tons are already being mined.
- Because many coal companies now have their shares listed on the NYSE, producers have become less production-driven while becoming more attuned to market forces.
- It could take a year or longer for any substantial new capacity to come on line.
- Rail congestion in the West, especially in the PRB, and regulatory challenges in the East will -deter expansion efforts.
- Reserve degradation, especially for small producers, is putting upward pressure on prices.

Electric utilities continue to view Utah coal as an important and economical fuel source. In fact, in 2001, CFC's shipments to electric utilities are expected to increase by more than fifty percent (50%) over 2000's sales into that market, including shipments to several Midwestern utilities (many for the first time). CFC has also found that many of the cogeneration plants in California, with their new found popularity and the increasing demand for their production resulting from the state's power shortage, have delayed or decreased their use of pet coke and, increasingly, have looked to coal to provide the majority of their solid fuel requirements. The demand for Utah coal as a kiln feedstock in both cement and lime production, plus its use for power generation in private applica-

tions by mining companies in various activities, continues to be constant.

In last year's report, it was noted that the Dugout Canyon Mine's longwall installation originally planned for 2000 would be postponed for at least one year, until mid-2001. With the increased electric utility demand of Utah coal mentioned above, CFC began to refurbish an older longwall, previously used at its Skyline Mine, for installation at the Dugout Mine by early April 2001. This longwall installation is intended for short-term use only and will only provide production through about the end of 2002. Most of the production will be used for power generation in Utah and Nevada. The refurbished longwall unit will eventually be followed by a new longwall at Dugout; however, decisions on a newer, permanent and more efficient longwall at Dugout will depend on the status of the supply and demand situation in the West.

As reported in 1999, CFC's Sufco mine was the successful bidder in May of that year for the BLM's lease sale for the 60 million-ton Pines Lease Tract. Mining of the first longwall panel in that lease continues to be scheduled to begin in the second half of 2001, with completion of that first panel expected late in 2002. For the next several years, the Pines Lease will provide most of the Sufco production.

And, finally, PacifiCorp's closure of the Trail Mountain mine in early 2001 will contribute to the increased utility demand for CFC coal in general and Sufco coal in particular. As was reported last year, Arch Coal, Inc. and PacifiCorp announced a new long-term coal supply agreement for CFC to supply substantial quantities of coal to PacifiCorp's Utah Power Plants. The initial test coal was shipped in late 2000 and was blended with other coals at the plant, which provided satisfactory results. Volumes will increase significantly in 2001 as the Trail Mountain Mine closes and will be used to replace that coal for the most part in the plant's fuel blends. In 2002, the use of Sufco coal will increase further at the PacifiCorp Plants, as Sufco becomes a more important component in their coal blending plans.

Lodestar Energy Inc.

Lodestar's White Oak mine started the retreat of the mine in September of 2000 due to high ash problems and ground control conditions. The underground portion of the mine is expected to be retreated by September of 2001. Lodestar has plans to recover the barrier coal at the portals by surface mining methods during the reclamation of the portal area of the mine. The permitting process is currently ongoing.

Lodestar's Horizon mine has been in the idle state during 2000. A small rehabilitation crew has been preparing the underground portion of the mine for operation. The mine is currently awaiting permit approval of its Federal coal lease. The Federal Mine Plan approval from OSM and the Department of the Interior is expected in July of 2001. The anticipated startup of the mine is late in 2001 or early 2002 depending on the mine getting a coal contract.

Andalex Resources, Inc.

Andalex moved its long wall from Aberdeen mine in March 2001 to the West Ridge mine that is co-owned by Andalex and IPA. Aberdeen mine was idled but work continues in the centennial seam of the Pinnacle mine. Andalex is at this time working with one continuous miner which could produce close to 0.4 million tons per year. Next year they may add another continuous miner which could increase production to as much as 0.75 million tons.

All the coal which is left in the Pinnacle mine and the Aberdeen mine is what is considered as Fringe Area Coal which could best be produced by continuous miner. This should keep Andalex producing between 0.5 to 0.75 million tons per year for the next several years.

Andalex continues to use the Wildcat loadout for its own coal as well as those of Genwal and West Ridge. Presently Wildcat loadout is handling 4 million tons per year.

With the recent increase in the domestic as well as export prices that we have seen to date Andalex should enjoy a healthy coal operation in Utah and continue to be an important

player in the Utah Coal industry.

Genwal Resources, Inc.

The Crandall Canyon Mine, operated by Genwal Resources, Inc., experienced another banner year in 2000 by producing 3.87 million tons of coal. Production comes from a longwall unit and two continuous miner units. One miner unit develops the gate entries for the longwall, and the other develops the main entries and mines non-longwall reserves. In 2000, a roster of hard working and dedicated employees, helped Genwal again to be one of the safest and highest productivity mines in the nation.

Genwal has made application to the BLM for reserves in the South Crandall LBA. This area could add 10 million recoverable tons of high quality coal to the mine.

For 2001, Genwal has set goals to continue its success in the coal industry. Genwal's existing production capability will guarantee safety, high productivity, and maximum recovery of reserves. Their coal quality will help their customers meet environmental concerns and energy demands.

West Ridge Resources Inc.

West Ridge mine which is co-owned by Andalex and IPA started its longwall operation in May 2001 and could produce a total of 2 million tons of coal for the year with about 100 employees. During the year 2002 West Ridge could produce upward of 3 million tons.

Up until May, West Ridge was producing coal with continuous miners, which is now used for development work only.

West Ridge is also completing its surface facilities. The bathhouse and the administration office is now complete. The warehouse and shop are under construction and should soon be completed. West Ridge is mining low ash high Btu coal that should prove to be profitable in the presently rising coal prices. Utah coal in the past year has enjoyed a healthy rise, in some cases as much as 25 percent, however compared to Powder River Basin and the Appalachian coal, which at least doubled their value, it was not a very impressive price rise.

Co-op Mining Company

Co-op Mining Company was started in 1940 and has operated continuously for the past 60 years. Co-op is an independent coal producer of lower sulfur, high Btu coal and operates in the Bear Canyon near Huntington, Utah. Annual production in the last several years has been 400,000 to 500,000 tons per year but increased to 880,000 in 1999 and more than one million tons in 2000. It is expected to do the same in 2001. Co-op's marketing has been directed at industrial consumers, households and Utah & Nevada utilities, with additional tonnage sold to the Midwestern market east of the Mississippi.

Co-op controls in excess of 30 million tons of coal reserves consisting of private, fee and federal coal, of which approximately 75 percent of the reserves are private and fee coal. The reserves are located east and west of Bear Canyon though current mining operations are west of Bear Canyon.

There are three minable seams on the property. These include the Tank, Blind Canyon, and Hiawatha Seams. The Tank Seam is the top seam, the Blind Canyon Seam the middle, and the Hiawatha Seam the bottom. Co-op is presently mining in the Tank Seam. Seam thickness varies between 12' - 20' in the Blind Canyon, 5' - 9' in the Hiawatha and 8' - 10' in the Tank Seam. Bear Canyon mine operates continuous miners and shuttle cars, and has the capability to run three sections. Currently two sections are in operation. Present mining equipment would allow production of more than 1 million tons per year.

Cyprus Mining Corporation

During 2000 Plateau Mining continued to produce coal from its two Utah operations. Both the Star Point No. 2 mine and the Willow Creek mine produced a high quality steam coal product for the western United States and Pacific Rim export markets. Plateau Mining was purchased from Cyprus Amax Minerals Company by RAG American Coal Holding Inc.

The Star Point operation, located in the Wasatch Plateau Coal Field, produced only 89,000 tons from the Wattis

seam before it was closed down.

At Willow Creek mine, approximately 1.37 million tons of coal were produced in 2000 before the July 31 mine fire that also killed 2 miners. By November the mine was closed and all the miners and staff associated with mining activity were laid off.

Coal Leasing Activity in Utah

There was no federal coal lease sale during 2000 and there has not been one through the end of June 2001. But, in September 2000 there was a coal lease sale by SITLA (Dugout Canyon).

Genwal Coal Co.

Genwal Coal Company filed for an LBA on June 6, 2000 for 880 acres of federal coal lease property in all or parts of sections 4, 5, 8 and 9 of Township 16S and Range 7E containing some 8 million tons of recoverable coal. This tract is called Little Bear Canyon which is located to the south of Crandall Canyon. This tract was originally being considered as part of the Mill Fork Canyon tract, but, due to lack of availability of adequate information about the tract at the time it was decided to leave it out of the Mill Fork Canyon tract. The Environmental Assessment is now in the scoping stage by the Forest Service. Geological and Engineering work was completed as part of Mill Fork Canyon tract. This tract should go on sale by the second quarter of next year.

PacifiCorp Electric Operations

PacifiCorp Electric Operations (Utah Power) of Salt Lake City submitted an LBA on February 26, 1991, for 7,864 acres in the North Trail Mountain/Cottonwood Creek area of Wasatch Plateau coal field in Emery County covering all or parts of sections 2, 3, 4, 9, 10, 11, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32 and 33 of Township 17S and Range 6E. This application is in full conformity with responsible and prudent coal operation.

In reviewing this LBA the Tract Delineation Team noted some areas where adjustments could be made in the tract configuration. The western edge of the tract in some areas was identified by the Forest Service in their forest plan as being unsuitable for coal leasing because of the need to protect the escarpment along Joe's Valley. However, they recommended the inclusion of additional land to fill the gap left between the LBA and their existing leases. As a result the recommended tract by the Tract Delineation Team the Cottonwood Canyon Tract shall include all or parts of sections 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 32 and 33 in Township 17S Range 6E, in total 9,243.87 acres containing 75 million tons of recoverable coal. The two areas of concern prior to going out to bid would be the determination of the area of surface disturbance which has to be resolved with the Forest Service and the inherent problem of being near a reservoir (in this case Joe's Valley) which has to be resolved with the Bureau of Reclamation. It is likely that it will take four years for these technical problems to be resolved. The School and Institutional Trust Lands Administration (SITLA) has arranged for the University of Utah Geology Department to study the seismicity of the area and its possible effect on Joe's Valley Reservoir. The environmental analysis would also take two more years to be completed. It would be several years before this tract could be offered for sale. PacifiCorp which originally submitted the LBA has no interest on this tract as they have already closed their Trail Mountain mine.

Canyon Fuel Company, LLC

In 1998, Canyon Fuel Company LLC submitted an LBA for 2,692 acres of federal land containing about 36 million tons of recoverable coal known as the Flat Canyon Tract. The lease covers all or parts of Sections 21, 28 and 33 of Township 13S, Range 6E and all of Sections 4 and 5 of Township 14S Range 6E. Delineation for this tract was completed by end of June 1999 and work on National Environmental Policy Act (NEPA) compliance was started. The technical study for this tract was conducted by NorWest. The draft EIS which was prepared by the BLM and Forest Service is out and the closing day for comment was July 2, 2001. The final EIS should be ready before the end of the calendar

year and the lease may go on sale prior to 2002.

In December, 1999, SITLA made a public declaration of its readiness to offer its portion of the Dugout Canyon tract for lease. This tract consists of 2,360 acres of land covering all or parts of sections 17, 19, 20, 21, 28, 29 and 30 of Township 13S and Range 13E containing 12.2 million tons of recoverable coal. Canyon Fuel Coal Company in December of 1999 made an offer of $800,000 for this tract which was turned down. Consequently, through negotiation, it was agreed for Canyon Fuel to pay $1,000,000 over nine years for a 20 year lease of the tract, with the starting date of September 1, 2000 for up to 6 million tons of production. It was further agreed that Canyon Fuel should pay a deferred bonus bid of one and one-half percent of the gross value of all coal mined above 6 million tons.

Andalex Resources, Inc.

During March of 1997 Andalex Resources purchased B Canyon coal reserve from BP America, a British Petroleum subsidiary, and started the process of permitting the mine. Andalex plans to have the mine producing coal later this year from a longwall operation which should be producing at a minimum rate of 3 million tons per year. B Canyon reserve (renamed West Ridge) should increase Andalex's reserve of recoverable coal by at least 40 million tons.

AMCA Coal Company, the leasing agent for Andalex Resources, filed for an LBA in July 1997 for 1,603 acres of federal coal lease property existing in all or parts of sections 1, 3 and 12 of Township 14S and Range 13E, and sections 6, 7 and 18 of Township 14S and Range 14E, and section 35 of Township 13S and Range 13 E, containing some 10 million tons of recoverable coal. This LBA which was called Whitmore Canyon and later was renamed West Ridge, is adjacent to the above mentioned lease. The BLM is in the process of completing the environmental assessment. There is an issue of adequacy of documentation which should be resolved soon. There is a good chance that this lease be offered for sale prior to the end of the year.

North Horn Tract

The North Horn Tract that has considerable tonnage of reserve has not been delineated and is not ready to be offered for lease. However, there have been some inquiries about the tract and a few coal operators have shown some interest in this tract. SITLA is in the process of accruing the base line information which was obtained many years ago through private drilling in the area.

Outlook for Utah's Coal Industry

FORECAST FOR 2001

Prices

Over the past 16 years, coal prices in Utah have generally declined. In 1984 Utah coal, on average, sold for $29.20 per ton. During 2000, the same coal sold for $16.93 per ton. This represents a decrease of 42 percent in current dollars, but a decrease of almost 62.2 percent on a constant dollar basis. Again, on a constant dollar basis, the comparison is even greater with 1976 prices when coal sold for more than 300 percent of the 2000 price. In other words, the decrease was more than 71.7 percent.

From 1990 to 1993, average prices have fluctuated around $21 per ton and hit a new low of $20.07 in 1994. In 1995, another new low was established at $19.11 then another one in 1996 at $18.50 followed by yet another one at $18.34 in 1997 further still by another one at $17.83 in 1998, and another low in 1999 at $17.36. The last decline occurred in 2000 when the average price of Utah coal came in at $16.93.

Even though this appears to be a decline in coal prices, in reality, it is not. The increase in sales occurred mostly in markets which were at the lower end of the price scale while some reduction of delivery occurred in markets which were at the upper end of the price scale. This, was actually the "bottoming out" of the prices. In the near term, the average price will begin to rise. For 2001, the average price of coal will probably be about $17.54 per ton.

The average spot price of coal stood at $14.33 during 1996, having fluctuated between $13.50 and $15.07, then started to rise during the first quarter of 1997, and ended the year at $16.63 for an average value of $16.51. During 1998, spot prices stayed around $16.63 and finished the second quarter of 1999 at the same level. During the third quarter of 1999 the spot price dropped down to $16.00 and it was further reduced to $15.25 in the fourth quarter of 1999. During the first two quarters of 2000 it stayed at $15.12 but started to rise during the third and fourth quarter and stood at $19.50 in the first quarter of 2001. It has since increased to around $22.00 a ton.

During 2001 Utah coal production will likely decrease by 1.6 million tons, from 26.9 to 25.3 million tons. The decrease in production has already led to some firming of the spot prices. For the remainder of the year the spot prices could moderate to around $20.00 per ton.

The current dollar prices would experience a healthy upward trend, and the price of coal as measured in constant dollars will expect a slight increase. In other words, while the average dollar price per ton will start to accelerate the rate of increase should exceed that of inflation slightly.

Utah's spot coal price changes are not only a function of demand changes or Utah's coal supply but also a function of the availability of coal in the

Utah Coal Prices

2001 value is forecast

neighboring states, more importantly Colorado. Just as much as Cyprus' Twenty Mile mine production problems contributed to the tightening of Utah's spot prices in 1996, an existence of over supply in Colorado could play a part in softening the spot price of Utah coal.

It is important to bear in mind that Utah's coal prices are also influenced by the world price of coal. The correlation may not be high, but the existence of a strong influence cannot be denied. During 1996 world coal prices remained relatively flat but started to fall off in 1997. Coal operators in Utah agreed to a concession of one-dollar-plus per ton. In 1998 there was another concession of about one dollar per ton of coal exported to the Pacific Rim countries of Japan and Korea. However, the contract with Taipower may be such that the concession made to Japanese coal importers would not affect it materially. Other countries such as Australia and South Africa gave concessions ranging up to $3.00 per tonne (metric ton).

During 1999, there was a further concession given by Australian operators while Utah's concession was small. During 2000 Utah coal export prices started to rise and this trend should continue for the near term.

Though export prices for Utah producers were not a determining factor in overall coal prices, and the sale takes place on marginal production, it should be realized that as the amount and the percentage of the exported coal relative to total production increases, the effect of the export price on the average price of coal becomes more relevant. However, over the next few years the level of exports as well as the percentage of the production should go up, which means the export prices will have more influence on the actual price of coal.

Other factors also tend to soften prices. Technological developments in coal production and handling continue to lower the break-even point for production and to reduce prices overall. Large volume production allows operators to reduce profit margin per ton by lowering prices and still keep overall profits high. The abundance of coal supply on the international market will continue to exert pressure on Utah producers to keep prices competitive.

World recoverable coal reserves stand at 1.112 trillion tons. World production and consumption is around 5 billion tons per year implying that, at the present rate of consumption, the world has an adequate supply for the next 223 years. This, of course, is based on the recoverable reserves that are known and reported at this time. There are many coal reserves that remain undiscovered and some that are discovered but not reported or are under reported.

There is also some question about the "recoverable" fraction of the recoverable reserves. By " recoverable" we refer to resources that we can mine efficiently with today's technology and at today's prices. However, future technology may allow a greater percent of the resource to be recovered, hence a much greater recoverable reserve. Coal prices also play an important part in determining the amount of reserves. Those reserves that are now marginal or are not considered as mineable because of the low price of coal could become mineable at higher coal prices.

The rate of consumption also directly affects the remaining number of years of supply. As the world's population increases the demand for energy, including coal, will increase. As developing countries with high growth rates expand and add energy-intensive industries, the demand for energy and coal will increase in tandem. Presumably, at the same time, new technologies will help us achieve much greater efficiency in our energy conversion. Today, on average, we burn 10,080 Btu (0.84 lb. of 12,000 Btu per pound of coal) to generate 1 kWh of electricity which has 3,413 Btu. In other words, in the process of conversion we lose 6,667 Btu or 66.1 percent and end up with 33.9 percent of the energy used. Sierra Pacific's Pinon Pine Power Project is now operating at about 40 percent efficiency. By the end of this decade, many of our energy conversion units will

have a heat rate of 6,800 Btu/kWh or slightly more than 50 percent efficiency. This, in reality, means that by the end of this decade we should be able to use the same amount of coal to generate 50 percent more electricity than we do today, implying that our reserve-to-production ratio will increase, thus extending the life of our reserves. This leads to the conclusion that the world has a vast coal reserve and this supply overhang will ultimately keep the supply up and the price down.

On the other hand, there are also other forces acting to raise coal prices, specifically western coal. From January of last year the second phase of the Clean Air Act Amendments of 1990 went into effect. We could experience a renewed wave of interest in low sulfur coal throughout the country. The Utah coal market should see some tightening during the summer and as we move into fall. Utah's coal production, now at the upper percentage of capacity, should respond to the greater demand by showing some firming up in the price of coal.

Production

Utah coal production for 2001 will be about 25.3 million tons, still at above the 25 million tons per year level and among the highest levels of production in the industry's 132-year of recorded history. Three factors will account for sustaining this high level of production: 1) strong demand for steam coal consumption by the electric utilities in Utah; 2) greater level of exports; and 3) increased industrial consumption of the coal in the west.

Electric utilities in the west will continue using greater amounts of Utah coal in the future. In 2001, shipments of coal to electric utilities in the west will increase moderately while shipments to the east will accelerate more while shipments to electric utilities in Utah will decrease considerably and shipments to Pacific Rim countries will decrease.

Skyline production could decrease by more than one million tons. White Oak's production could experience considerable decrease while Horizon mine could increase production the same amount.

Soldier Canyon mine would continue its standby status while production from the Dugout Canyon mine could triple. Andalex also should experience a considerable decrease in production, while West Ridge Coal Company production could quadruple. Co-op's production should increase by ten percent while Sufco will increase production by .2 million tons. Genwal's production will level off and may even decrease to some extent. Plateau is now closed and there is no expectation of production from that mine. Trail Mountain mine is now closed but production from Deer Creek mine will rise.

Distribution

During 2001, production and distribution of Utah coal will probably stay around 25.3 million tons. Distribution of electric utility coal to out-of-state customers will increase by as much as 1.1 million tons from 6.6 to 7.7 million tons.

On January 1, 1995, TVA and White Oak Mining and Construction Company, Inc. signed a ten year contract for annual delivery of 1.5 million tons. Another 10-year coal contract for delivery of 0.5 million tons per year was signed on the same date between TVA and Genwal Coal Company. This was the first time in a decade that Utah coal started to flow to electric utilities in the east on a long term basis even though numerous spot sales had been made to that sector of the country.

This 2 million tons of additional coal through 2005 was a boost to Utah's coal production. It will lead to more jobs in Utah's coal industry as well as many indirect jobs in local communities. In addition to TVA, Utah now has two companies sending coal to two electric utilities in Illinois. Our forecast for this decade shows that electric utility coal going east should be above 4 million tons per year.

Distribution of Utah coal to electric utilities within the state should show very little year-to-year change, unless new facilities are built or some of the older units are retired. Currently, there is no indication that either will happen. The present discussion on expansion of IPP or Utah Power's units would not probably mate-

rialize until 2007. Older units experience more down-time due to maintenance and repair, so on the basis of this reasoning a slight decrease in distribution may be expected; on the other hand, companies could increase their electric generation marginally by ramping up their operation. As a combined result, of these two factors a slight increase in consumption is expected. The only unit that could materially affect electric utility coal consumption within the state is Intermountain Power Agency's IPP plant. During years with higher precipitation in the Pacific Northwest, more hydropower becomes available at costs below those of coal. This will, to some extent, curtail the operation of IPP units resulting in less consumption of Utah coal. For 2001, this unit will purchase and burn 600,000 tons less than it did in 2000. PacifiCorp distribution will decrease by just under 0.7 million tons while the consumption of coal and generation of electricity at the plants decreases less. DG&T's Bonanza plant is not forecasted to use any Utah coal in 2001 but it is not totally ruled out. Barring any new development during the next five years, the electric utility sector's consumption of Utah coal within the state should decrease from 14.3 in 2000 to close to 13.1 million tons per year.

Distribution of Utah industrial coal outside the state during 2001 will increase from 2.89 to 3.15 million tons with consumption within the state increasing from 0.64 to 0.73 million tons, however, in the future consumption of industrial coal outside of the state should increase. This trend should continue throughout this decade.

Distribution to the residential and commercial sector will decrease during 2001. However, any future movement in this consuming sector is ultimately tied to the price of natural gas. Some commercial operations may begin switching from natural gas to coal which should result in increased consumption. With the price of natural gas coming down from $8 to $10 per million Btu a few months ago to $3.20 now this consuming sector may experience some decrease.

Finally, in the export market during 2001, distribution will decrease by about 10 percent, or 0.28 million tons to 2.68 million tons. The forecast for this consuming sector for this decade is above 3.5 million tons per year.

The general outlook for Utah's coal industry is bright despite some coal operators having moved their operations to other states, sold, or otherwise disposed of their Utah coal properties. Still we have seen a number of companies expand operation and double in size within a span of three or four years. Many companies have applied for new federal coal leases, indicating continuing interest in Utah's coal reserves. During 1996 two mines opened up while three mines closed. In 1997 four mines opened up and one mine closed. During 1998, one mine opened and one mine closed. During 1999, Dugout Canyon mine replaced Soldier Canyon mine and West Ridge mine opened up. During 2000 both mines of Cyprus Plateau closed, Star Point's reserves had run out and Willow Creek had a mine fire on July 31 which caused the mine to close in September.

Coal production in Utah has enjoyed steady growth since the mid-1980s and has more than doubled in size within the past decade. Despite coal prices that have declined steadily for a decade and a half, coal production in Utah has increased. This is indicative of a strong and healthy coal industry.

In 2001, all consuming coal sectors within and outside of Utah are expected to have a strong showing. The coal contracts with eastern utilities should add permanence to electric utility consumption outside of Utah. The forecast of total production for the latter part of this decade is about 29 million tons.

Devaluation of Currency

During the decade of 1970 and into the 1980s (until 1983), the Australian dollar had a higher value than the American dollar. For the following four years the Australian dollar fell precipitously in value and hit a new low of 1.49 Australian dollars to American dollars. The next two years (1987-88) witnessed some strengthening in the value of the Australian currency and for the following eight years (1988-1996) the value of the Australian dollar fluctuated moderately from year to year but stayed virtually unchanged at 1.28 Australian dollars to American dollars (see accompanying table and graph).

During this period (1990 - 1996), Utah coal exports grew from 1.7 million ton per year to 5.5 million ton per year (see Appendix Table 1).

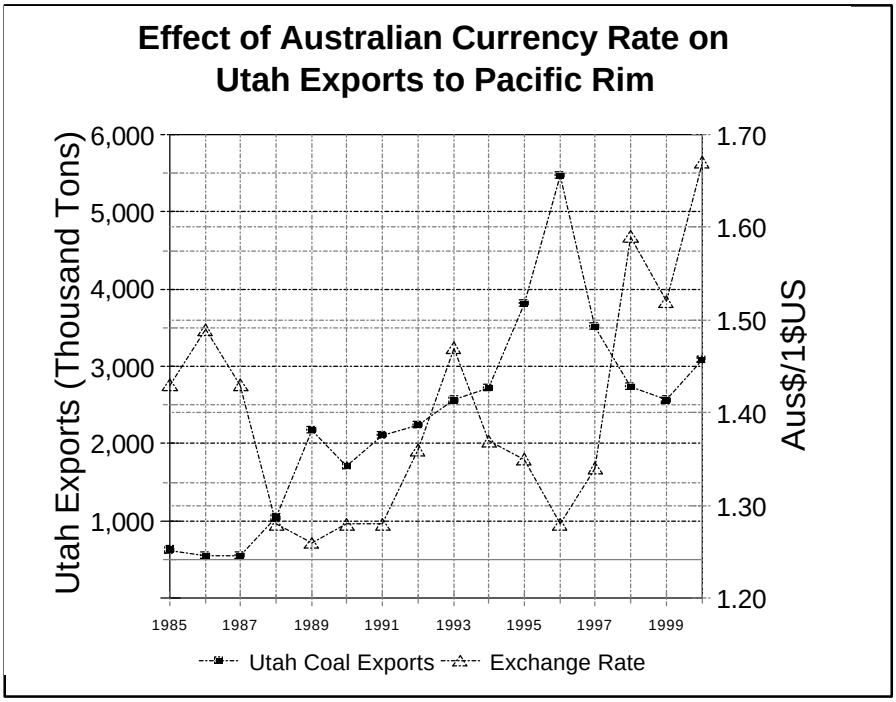
From 1996 to 1998 the value of the Australian dollar fell more than 20 percent with respect to American dollars. Realizing the fact that all the currency used in coal contracts in the Pacific Rim and for that matter in the most of the rest of the world is in American dollars, in 1998 the Australian coal operators could take home 25 percent more in their devalued dollars than they did two years earlier. This increase in take home pay allowed the Australian coal operators much more room to discount their prices and compete more vigorously with the Utah coal operators. Utah coal exports to the Pacific Rim fell from 5.5 million tons in 1996 to 3.5 million tons in 1997 then again to 2.7 million tons in 1998 and finally to 2.5 million tons in 1999. Comparing the decrease in the value of the Australian dollar with that of Utah coal exports to Pacific Rim countries a high degree of interaction can be observed.

Mercury Content of Coal

The second phase of the 1990 Clean Air Act Amendment went into effect on January 1, 2000. Some electric utility companies have already contracted for lower sulfur coal and some are counting on the purchase of emission allowances. But, as more companies try to overcome their emission violations by purchasing emission allowances the price of an allowance could go up and could make it less expensive to buy

Utah Coal Exports and the Exchange Rate of Australian Currency

	Utah Exports Thousand Tons	Exchange $AUS / 1$US
1985	625	1.43
1986	551	1.49
1987	555	1.43
1988	1044	1.28
1989	2175	1.26
1990	1708	1.28
1991	2112	1.28
1992	2245	1.36
1993	2567	1.47
1994	2717	1.37
1995	3811	1.35
1996	5468	1.28
1997	3513	1.34
1998	2735	1.59
1999	2567	1.52
2000	2960	



low sulfur coal as is found in Utah.

Utah coal has other advantages than just low sulfur. The high Btu coal of Utah emits as much as 12 percent less carbon dioxide per generated useful Btu (kilowatt-hour of electricity) than other low Btu coals.

There are also smaller amounts of harmful chemicals emitted from Utah coal per kilowatt-hour of electricity generated — one of these chemicals is methyl mercury. So far, emission of mercury has not been regulated but there is a good indication of its being regulated within the next few years. This is where Utah coal could prove to be valuable.

The US Geological Survey is now initiating a study concerning the determination of the level of emissions of mercury when coal is burned. One of the scientists of the Utah Geological Survey has already been approached to head the study for the western states.

There are good indications that the study would confirm the existence of lower levels of mercury emissions from Utah coal when burned to generate electricity. This should bode well for Utah coal if the new mercury emission control caps the emissions per unit of electricity generated rather than a generic percentage reduction on all emissions.

Utah Schools and Land Exchange Act of 1998

Public Law 105-335

The land exchange agreement which was unveiled on May 8, 1998 by then Secretary of the Interior Bruce Babbitt and Utah Governor Michael Leavitt was indeed a long awaited one. It was, no doubt, the designation of the Grand Staircase - Escalante National Monument by President Clinton on September 18, 1996 that gave the additional impetus to culminate this long-awaited federal government/ state land exchange.

This agreement encompasses the exchange of state land, tribal land, federal land, mineral rights on state land, tribal land, federal land as well as royalties on minerals and lump sum payment in cash. As part of the exchange the federal government will receive:

- 177,956.72 acres of surface and mineral state holdings and an additional 24,001.03 acres of mineral-only properties captured within the Grand Staircase - Escalante National Monument;
- 69,688.93 acres of surface and mineral property captured in Arches National Park, Capitol Reef National Park, Dinosaur National Monument, Glen Canyon National Recreation Area, and Flaming Gorge National Recreation Area;
- 45,241 acres of surface and mineral properties captured in the Navajo and Goshute Indian Reservation;
- 70,106.71 acres of surface and mineral property captured within Wasatch - Cache National Forest, Sawtooth National Forest, Ashley National Forest, Uintah National Forest, Manti-La Sal National Forest, Fishlake National Forest, Dixie National Forest, and Desert Range Experimental Station; and,
- Four tracts in the Alton Coal Field tracts previously designated unsuitable for mining (these lands are already accounted for in the Grand Staircase - Escalante National Monument acreage totals) for a total of 366,095 acres of land plus an additional mineral rights covering 66,479.27 acres.

The state of Utah on behalf of trust lands administration will receive:

- • $50 million in cash;
- $13 million (1998 dollars) payable out of the federal share of royalties from future coal sales at the Cottonwood Coal tract;
- 597.76 acres (surface and minerals) at the Blue Mountain telecommunications site in Uintah County
- 2,998.63 acres (surface and minerals) in and around the Beaver Mountain Ski Resort;
- 1,920.00 acres (surface and minerals) at the Warner Valley tract, acquired primarily for surface development;
- 34,248.30 acres (surface and minerals) at the Big Water tract, acquired primarily for surface development;
- 12,797.50 acres (surface and minerals) at the Hatch tract, acquired primarily for surface development;
- 58,608.65 acres (surface and minerals) at the Ferron tract,

containing an estimated 2 billion tons of in-place coal resource and 185 billion cubic of recoverable coal bed methane gas;

- 881.01 acres (surface and minerals) at the West Ridge tract, containing an estimated 4 million tons of recoverable coal;
- 2,228.96 acres (surface and minerals) at the Millar County tract, containing valuable limestone resources;
- 4,004.30 acres (surface and minerals) at the Duchesne County tract, containing speculative oil and gas potential;
- 2,600.76 acres (surface and minerals) at the Uintah County No. 1 and No. 2 tracts, containing speculative tar sands deposits;
- 5,562.82 acres (mineral only) at the Mill Fork tract, this property will revert to federal control after 22.3 million tons of coal are produced and sold from the tract;
- 9,597.02 acres (mineral only) at the North Horn tract, this property will revert to federal control after 100 million tons of coal are produced and sold from the tract; and,
- 5,113.84 acres (mineral only) at the Muddy and Dugout Canyon tract which will revert to federal control after 34 million tons of coal are produced and sold from the tracts.

Grand Total: $63 million, 120,885.87 acres of developable surface and mineral lands in addition to 20,273.68 acres of known mineral-only properties.

In addition to the surface real estate development potential of the acquired lands, the properties are estimated to contain in excess of 185 billion cubic feet of recoverable coalbed methane, 160 million tons of recoverable coal, in-place coal resources in excess of 2 billion tons, valuable limestone resources and other speculative mineral assets.

This bill was sponsored by Utah Rep. James Hanson and introduced into the House on May 12, 1998. Two of the five cosponsors were also Utah Reps. Merrill Cook and Christopher Cannon. The bill passed the house by voice vote on June 24, 1998 and was sent to the Senate. This bill was referred to the Committee on Energy and Natural Resources on June 25, 1998 and to the Subcommittee on Forests and Public Lands on June 26, 1998. After going to the senate in September the bill was finally passed and was signed into law on Oct. 31, 1998.

Sunnyside Power Plant

Kaiser Steel Corp. as early as 1986 had plans to build a qualifying facility to utilize its coal refuse pile as was detailed in 1980 Federal Energy Regulatory Commission (FERC) order pursuant to Section 201 of the 1978 Public Utility Regulatory Policies Act (PURPA) which actively encourages small power production in the country. When in 1988 Kaiser Steel Corp. and its subsidiary Kaiser Coal Company filed for bankruptcy, Sunnyside Salvage and Reclamation Company of Boulder, Colorado was formed to acquire the Sunnyside property of Kaiser Coal Company, which it did in 1989.

Sunnyside Coal Company operated successfully until February 1994 when its coal supply contract with Geneva Steel ran out and was not renewed.

Among the assets that Sunnyside Coal acquired from Kaiser was a 10 million ton plus coal refuse pile that had been accumulated over more than half a century. This refuse pile was both an asset and a liability. If nothing was going to be done with the pile, Sunnyside Coal Company had to remove it to meet federal reclamation regulation when the firm was going to stop operation. This dilemma was to some extent alleviated when the Environmental Power Corp. (EPC) of Delaware formed a Utah subsidiary by the name of Sunnyside Power Corp. to take over Kaiser's plans for qualifying facilities and Sunnyside Coal Company's refuse pile to build a facility that would generate electricity. The land that the coal refuse pile was sitting on was purchased for $1.2 million.

After four years of planning, preparation, negotiation, capitalization and construction, Sunnyside Power Company started generation of electricity in 1993. This plant now utilizes between 300,000 to 350,000 tons of material from the refuse pile which was accumulated on the fee land and was subsequently conveyed by Kaiser

Coal Company to Sunnyside Reclamation and Salvage Company. Later the land that it sits on was sold to Sunnyside Power Co.

The consumption of the refuse pile to generate electricity by an independent company as part of PURPA, which created a regulatory framework for encouraging electricity generation by renewable energy producers and cogenerators, was not considered by this office at the time as a coal operation for the following reasons:

1) It was difficult to determine when the original coal was mined and from what leases. The majority of leases which were used in mining were privately held, some were federal leases and part of these leases bordered state leases. Therefore, it was very difficult, if not impossible to determine with any degree of accuracy from which lease the coal that was being used had come from.

2) The coal was stored on private land and not federal land.

3) The refuse pile was not directly sold as fuel to be used for a specific purpose.

4) The refuse pile was owned by Sunnyside Power Company and was consumed without changing hands to determine the price per ton of the fuel which was consumed.

5) When the land which the refuse pile sits on was purchased by Sunnyside Power Company it was not clear how much of the actual money that changed hands was for the land, how much for the refuse pile which was to be used as a fuel, or how much was for the rent of the land which was used to store the refuse pile upon thus, it became extremely difficult to put a price on the present value of the refuse pile as a fuel source.

6) The ownership of the refuse pile had changed hands. If there were any royalty to be collected it should have taken place when the land and the pile were sold by the original owner. Now that the power plant is burning the refuse pile, which it has already obtained and owns, it is difficult to collect the royalties.

7) Finally, the amount of money that changed hands for the price of the land ($1.2 million), if it were for the value of the refuse pile, would make it about $0.11 per ton which makes the royalty value for the refuse pile less than $0.01 per ton, something that may not be economical to assert, assess, monitor and collect a royalty on.

Coal-Based Jet Fuel

According to the result of a research conducted by the Energy Institute of Pennsylvania State University a coal-based fuel can be superior to petroleum based fuel because it can burn hotter, cleaner, safer and faster. Jet planes burning coal based fuel can go as fast as nine times the speed of sound.

Petroleum based fuel with its straight-line hydrocarbon structure can burn well in temperatures 600 degrees Fahrenheit or less. As the speed of a jet plane increases the engine operating temperature also increases. At higher temperatures the fluid fuel becomes unstable and could cause fouling of the engine and the fuel line.

The Penn State research study that has been funded by the U.S. Air Force to the tune of $18.4 million to date shows that the ring-like hydrocarbon makeup of the coal-based fuel can operate well in temperatures as high as 900 degrees Fahrenheit without fouling the engine. Tests at temperatures higher than 1400 degrees Fahrenheit have also been conducted with good results.

There is a good chance that a prototype engine within the next two years may be available if the findings of this research proves favorable. Should the use of a coal based fuel in newly developed jet engines become a reality it would bode well for the coal industry.

Other Energy Prices and Their Influence on Coal Prices

Utah coal prices that stood at $29.20 in 1984 have since continuously declined until the year 2000. The average price of Utah coal had sunk to the lowest level in more than two decades to $16.93 per ton. In the first two quarters of 2000 the spot price of Utah coal was at $15.25. This has since been

on the rise and it stands today at $22 per ton.

The reason for this rise is a complex one and cannot easily be explained. The price of coal that for many years had been independent of other energy resources is now becoming, to some extent, dependant on them. Crude oil prices have always fluctuated in the past and went through cycles of peak and trough but did not effect the price of coal in general nor Utah coal in particular. Natural gas prices usually stayed low. They fluctuated to a limited extent with the crude oil prices and did compete with coal in certain consuming sectors but their effect on the price of coal was minimal.

Today the energy market has gone through an overhaul. The price of crude oil is not going to fluctuate as it did in the past and should stay within a range which also has a floor and to a lesser extent a ceiling.

The Organization of Petroleum Exporting Countries (OPEC) that was considered dead by many experts in the field has made a comeback. For the past two decades the relationship between Saudi Arabia and Iran (the two biggest producers of oil among OPEC nations) was strained.

There was considerable political friction between the two governments and even through all OPEC decisions which were adopted were unanimous, neither nation adhered very strongly to those resolutions. As a result we saw crude oil dropping to $10 per barrel range in December 1998 and staying around $11 into February 1999. At the ministerial meeting of March 23, 1999 OPEC countries agreed to cut production from 24.4 million barrels per day to 23 million barrels per day effective April 1, 1999.

This action boosted the crude oil prices to the $15 range and by July it was into the $20 range. A year later it was in the $30 range. OPEC has made many increases and decreases in the production quota to keep the crude oil prices between $22 and $28. This policy was set to keep the price of the basket of crude around $25 per barrel which is usually $3 to $4 less than the price of West Texas Intermediate (WTI).

The price of WTI crude oil will fluctuate to some extent in the near term but it should be around $26 to $32 per barrel.

This should keep the price of natural gas high. During summer months the spot price of natural gas should hover around $3.10 to $3.80 per thousand cubic feet (mcf) and should rise to $5 to $7 in the winter. Since the price of fuel oil in certain parts of the world and the price of natural gas in certain consuming sectors in the U.S. compete with the price of coal, as these prices rise, the spot price of coal would also follow.

In the near term we are going to have stable but relatively high prices for petroleum products and natural gas. This is going to keep the spot price of coal up and eventually will effect contract coal as well.

Over the past few years some of the coal producers have realized that the amount of good coal available to them is a finite quantity and have individually decided that overproduction of these valuable reserves is not to their best financial interest. In congruency with prudent business practices some coal has been kept out of the market, which also has helped to boost spot prices to some extent.

It seems as though the price of coal is finally on the rise and for the next few years most coal operators should show a healthy financial gain.

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Appendix

Table 1 **Historical Production, Distribution, and Consumption of Coal in Utah**
Thousand Short Tons

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
PRODUCTION	20,517	22,012	21,875	21,015	21,723	24,422	25,051	27,071	26,428	26,600	26,491	**26,920**	25,286
DISTRIBUTION	20,289	21,680	21,673	21,339	21,935	23,441	25,443	27,816	25,407	26,974	26,180	**27,629**	25,270
E U OUTSID UTAH	2,623	3,373	3,608	4,000	3,914	4,841	6,570	7,258	5,638	7,704	6,910	**6,639**	7,717
E U IN UTAH	12,963	14,053	13,472	13,136	13,343	13,839	12,550	12,728	14,780	14,545	14,593	**15,807**	12,596
C P OUTSID UTAH	0	0	0	0	0	0	0	0	0	0	0	**0**	0
C P IN UTAH	1,277	1,296	1,310	1,182	1,089	1,198	1,062	1,120	1,106	1,110	728	**941**	986
IND OUTSIDE UTAH	2,401	2,327	2,158	2,006	2,146	2,322	2,399	2,339	2,164	2,749	2,529	**2,892**	3,147
IND IN UTAH	810	619	624	497	614	647	642	517	665	680	830	**634**	732
R/C OUTSIDE UTAH	84	59	76	81	134	308	68	51	60	82	75	**141**	87
R/C IN UTAH	323	**82**	320	347	228	157	182	260	96	212	107	**82**	92
OVERSEAS EXPORTS	2,175	1,708	2,112	2,245	2,567	2,717	3,811	5,468	3,513	2,735	2,567	**2,960**	2,679
TOTAL IMPORTS	2,367	2,137	2,007	2,155	2,100	2,588	1,841	1,925	2,615	2,715	2,159	**2,467**	2,716
IMPORTS E U	1,400	1,449	1,310	1,517	1,501	1,495	779	805	1,509	1,733	1,431	**1,531**	1,780
IMPORTS C P	922	679	695	629	579	1,089	1,062	1,120	1,106	982	728	**936**	936
IMPORTS IND	45	7	2	9	20	4	0	0	0	0	0	**0**	0
IMPORTS R/C	0	2	0	0	0	0	0	0	0	0	0	**0**	0
COAL OPERATORS	14	13	12	12	11	10	9	9	10	0	10	**10**	10
ACTIVE MINES	20	18	16	16	15	14	13	12	15	15	14	**14**	14
EMPLOYEES	2,471	2,791	2,292	2,106	2,161	2,024	1,989	2,077	2,091	1,950	1,843	**1,672**	1,492
PRODUCTIVITY,T/M	4.42	4.22	4.79	5.13	5.47	6.01	6.41	5.91	5.57	6.12	6.09	**6.91**	7.07
AVERAGE PRICE $/T	22.01	21.78	21.56	21.83	21.17	20.07	19.11	18.50	18.34	17.83	17.36	**16.93**	17.54
TOTAL VALUE $MM	451.6	479.4	471.6	458.8	459.9	490.2	478.7	500.8	484.7	474.2	459.8	**455.8**	**443.5**

Values for 2001 are forecast. All distributions include imports.
EU = Electric Utilities, CP = Coke plants, IND = Industrial, R/C = Residential and Commercial

Table 2 **Utah Coal Production(Net) by Coal mine, 2000**
Thousand Short Tons

Company	Mines	County	Coal field	Production
Energy West	Deer Creek,	Emery	Wasatch Plateau	4,258
	Trail Mt.	Emery	Wasatch Plateau	4,173
Canyon Fuel	Skyline #1&3	Emery/Carbon	Wasatch Plateau	3,023
	Soldier Canyon	Carbon	Book Cliffs	498
	Sufco	Sevier	Wasatch Plateau	5,906
White Oak	White Oak #2	Carbon	Wasatch Plateau	573
	Horizon	Carbon	Wasatch Plateau	0
Andalex	Aberdeen	Carbon	Book Cliffs	1,581
West Ridge	West Ridge	Carbon	Book Cliffs	528
Genwal	Crandall Canyon	Emery	Wasatch Plateau	3,881
Co-op	Bear Canyon	Emery	Wasatch Plateau	1,064
Cyprus Plateau	Star Point #2	Emery/Carbon	Wasatch Plateau	89
	Willow Creek	Carbon	Book Cliffs	1,346
Coval	Coval	Carbon	Book Cliffs	0
Total				**26,920**

Table 3 **Utah Coal Production by Coal Field**
Thousand Short Tons

Year	Wasatch Plateau	Book Cliffs	Emery	Sego	Coalville	Others	Total
1870-1981	166,404	234,547	5,723	2,654	4,262	2,332	**415,922**
1982	12,342	3,718	852	0	0	0	**16,912**
1983	10,173	1,568	88	0	0	0	**11,829**
1984	10,266	1,993	0	0	0	0	**12,259**
1985	9,386	2,805	640	0	0	0	**12,831**
1986	10,906	2,860	503	0	0	0	**14,269**
1987	13,871	2,348	269	0	33	0	**16,521**
1988	15,218	2,363	548	0	35	0	**18,164**
1989	17,146	2,785	586	0	0	0	**20,517**
1990	18,591	3,085	336	0	0	0	**22,012**
1991	18,934	2,941	0	0	0	0	**21,875**
1992	18,631	2,384	0	0	0	0	**21,015**
1993	19,399	2,324	0	0	0	0	**21,723**
1994	22,079	2,343	0	0	0	0	**24,422**
1995	22,631	2,420	0	0	0	0	**25,051**
1996	23,616	3,455	0	0	0	0	**27,071**
1997	22,916	3,512	0	0	0	0	**26,428**
1998	22,708	3,892	0	0	0	0	**26,600**
1999	23,572	2,919	0	0	0	0	**26,491**
2000	22,729	3,123	0	0	0	0	**26,920**
2001	21,004	4,282	0	0	0	0	**25,286**
Cumulative Production	**501,756**	**288,215**	**9,545**	**2,654**	**4,330**	**2,332**	**808,832**

Values for 2001 are forecast and are not included in the total.

Table 4 **Utah Coal Production by County**
Thousand Short Tons

Year	Carbon	Emery	Sevier	Summit	Iron	Kane	Others	Total
1870-1959	211,028	49,166	4,046	4,012	521	45	2,846	**271,664**
1960	3,698	1,137	49	20	50	0	1	**4,955**
1961	3,916	1,124	47	20	52	0	0	**5,159**
1962	3,105	1,077	49	20	46	0	0	**4,297**
1963	3,493	752	47	18	48	1	0	**4,359**
1964	3,752	848	47	17	54	2	0	**4,720**
1965	3,779	1,101	61	13	36	2	0	**4,992**
1966	3,380	1,170	65	15	4	2	0	**4,636**
1967	2,971	1,113	72	13	3	2	0	**4,174**
1968	3,062	1,167	70	13	3	2	0	**4,317**
1969	3,367	1,200	72	12	4	2	0	**4,657**
1970	3,349	1,292	79	13	0	0	0	**4,733**
1971	3,347	1,097	158	12	0	12	0	**4,626**
1972	2,956	1,656	184	6	0	0	0	**4,802**
1973	2,866	2,445	339	0	0	0	0	**5,650**
1974	2,754	2,901	391	0	0	0	0	**6,046**
1975	2,984	3,126	827	0	0	0	0	**6,937**
1976	3,868	3,057	1,043	0	0	0	0	**7,968**
1977	4,390	3,107	1,337	0	0	0	4	**8,838**
1978	4,005	3,640	1,558	0	0	0	50	**9,253**
1979	5,292	5,147	1,657	0	0	0	0	**12,096**
1980	5,096	6,319	1,821	0	0	0	0	**13,236**
1981	6,123	5,609	2,076	0	0	0	0	**13,808**
1982	8,335	6,329	2,248	0	0	0	0	**16,912**
1983	4,194	5,404	2,231	0	0	0	0	**11,829**
1984	5,293	4,825	2,141	0	0	0	0	**12,259**
1985	6,518	4,516	1,797	0	0	0	0	**12,831**
1986	6,505	5,404	2,360	0	0	0	0	**14,269**
1987	7,495	6,765	2,228	33	0	0	0	**16,521**
1988	7,703	7,801	2,625	35	0	0	0	**18,164**
1989	8,927	8,531	3,059	0	0	0	0	**20,517**
1990	8,810	10,315	2,887	0	0	0	0	**22,012**
1991	5,816	12,980	3,079	0	0	0	0	**21,875**
1992	3,386	15,049	2,580	0	0	0	0	**21,015**
1993	2,642	15,528	3,553	0	0	0	0	**21,723**
1994	4,523	16,330	3,569	0	0	0	0	**24,422**
1995	3,801	17,344	3,906	0	0	0	0	**25,051**
1996	5,985	16,872	4,214	0	0	0	0	**27,071**
1997	6,956	14,533	4,939	0	0	0	0	**26,428**
1998	7,206	13,675	5,719	0	0	0	0	**26,600**
1999	4,514	16,214	5,763	0	0	0	0	**26,491**
2000	4,615	16,399	5,906	0	0	0	0	**26,920**
2001	4,629	14,546	6,111	0	0	0	0	**25,286**
Cumulative								

Values for 2001 are forecast and are not included in the total.

Table 5 **Utah Coal Production by Landownership**
Thousand Short Tons

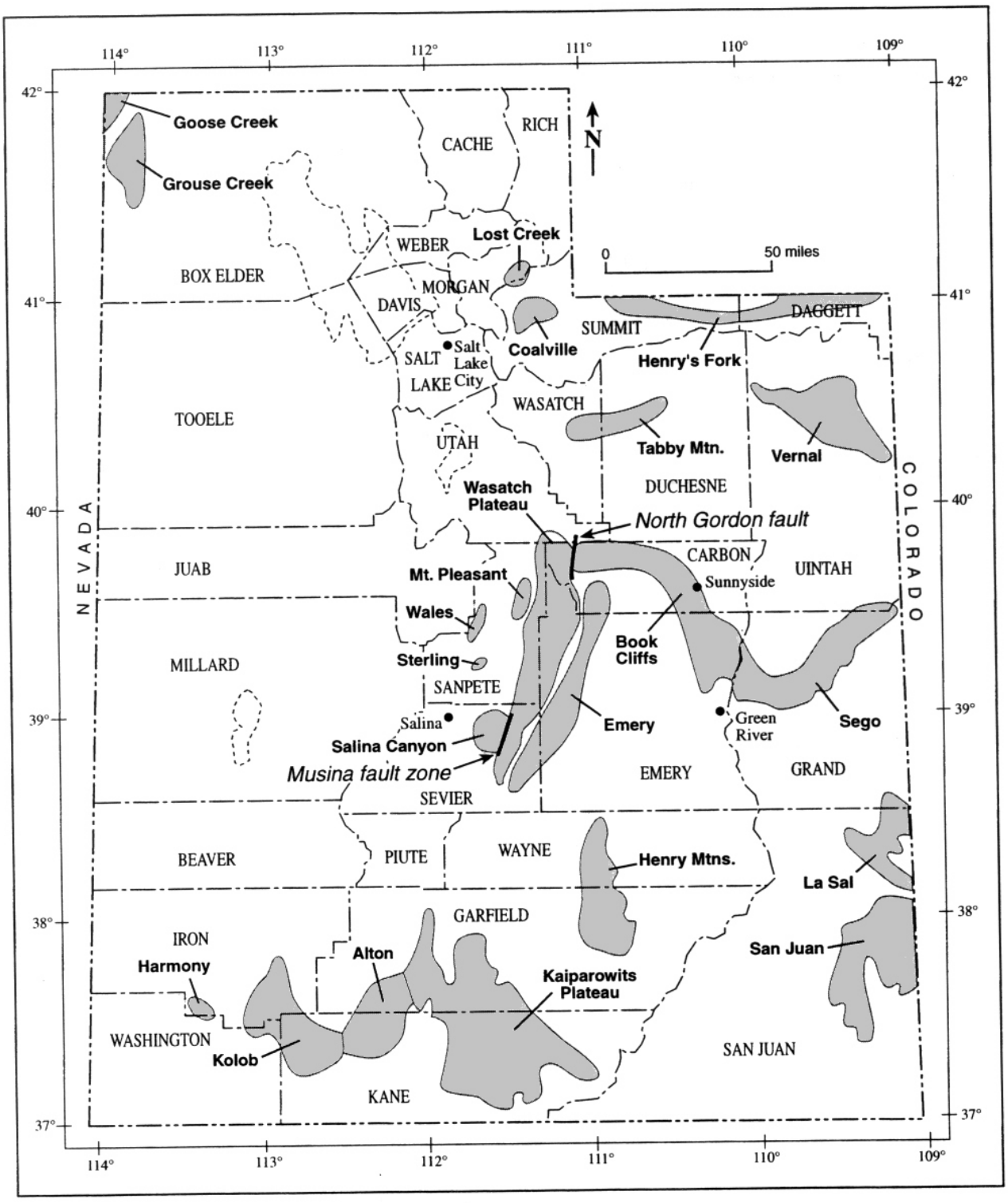
Year	Federal Land		State Land		County Land		Fee Land		Total
	Production	Percentage	Production	Percentage	Production	Percentage	Production	Percentage	
1980	8,663	65.5%	1,105	8.3%	0	0.0%	3,468	26.2%	**13,236**
1981	8,719	63.1%	929	6.7%	0	0.0%	4,160	30.1%	**13,808**
1982	10,925	64.6%	998	5.9%	0	0.0%	4,989	29.5%	**16,912**
1983	6,725	56.9%	419	3.5%	0	0.0%	4,685	39.6%	**11,829**
1984	8,096	66.0%	285	2.3%	0	0.0%	3,878	31.6%	**12,259**
1985	9,178	71.5%	510	4.0%	0	0.0%	3,143	24.5%	**12,831**
1986	11,075	77.6%	502	3.5%	0	0.0%	2,692	18.9%	**14,269**
1987	13,343	80.8%	488	3.0%	0	0.0%	2,690	16.3%	**16,521**
1988	15,887	87.5%	263	1.4%	0	0.0%	2,014	11.1%	**18,164**
1989	16,931	82.5%	375	1.8%	153	0.7%	3,058	14.9%	**20,517**
1990	17,136	77.8%	794	3.6%	606	2.8%	3,476	15.8%	**22,012**
1991	18,425	84.2%	942	4.3%	144	0.7%	2,364	10.8%	**21,875**
1992	17,760	84.5%	1,384	6.6%	136	0.6%	1,735	8.3%	**21,015**
1993	19,099	87.9%	1,682	7.7%	116	0.5%	826	3.8%	**21,723**
1994	22,537	92.3%	1,227	5.0%	243	1.0%	415	1.7%	**24,422**
1995	23,730	94.7%	571	2.3%	289	1.2%	461	1.8%	**25,051**
1996	25,996	96.0%	446	1.6%	15	0.1%	614	2.3%	**27,071**
1997	25,161	95.2%	339	1.3%	0	0.0%	928	3.5%	**26,428**
1998	24,954	93.8%	297	1.1%	37	0.1%	1,312	4.9%	**26,600**
1999	21,982	83.0%	3,071	11.6%	65	0.2%	1,373	5.2%	**26,491**
2000	20,812	77.3%	4,021	14.9%	0	0.0%	2,087	7.8%	**26,920**
2001	18,462	73.0%	4,473	17.7%	0	0.0%	2,351	9.3%	**25,286**

Values for 2001 are forecast.

Table 6 **Distribution of Utah Coal 2000**
By Destination and End-Use, Thousand Short Tons

Destination	Electric Utilities	Other Industrial	Residential & Commercial	Total
Arizona	0	80	0	80
California	990	1959	0	2,949
Colorado	20	0	1	21
Idaho	0	273	18	291
Illinois	109	196	0	305
Missouri	34	0	0	34
Montana	0	0	0	0
Nebraska	21	0	0	21
Nevada	3428	301	20	3,749
Oregon	179	0	0	179
Pennsylvania	50	0	0	50
Tennessee	1656	0	0	1,656
Utah	**14276**	**639**	**82**	**14,997**
Virginia	118	0	0	118
Washington	0	83	102	185
Wisconsin	34	0	0	34
Pacific Rim	**260**	0	0	2,960
Total	**23,875**	**3,531**	**223**	**27,629**

Map 1 **Coal Fields of Utah**



Map 2 **Coal Mines and Load Outs of Wasatch Plateau and Book Cliffs Coal Fields**