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AND  
THE COLORADO GENERAL ASSEMBLY:**

**COLORADO  
ENERGY COORDINATING COUNCIL**



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**LEGISLATIVE COUNCIL RESEARCH PUBLICATION NO. 267**

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COLORADO  
" "  
ENERGY COORDINATING COUNCIL

Report to the  
" "  
Governor and the ~~Colorado~~  
Colorado General Assembly

Research Publication No. 267  
December, 1981

# COLORADO GENERAL ASSEMBLY

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## LEGISLATIVE COUNCIL

ROOM 46 STATE CAPITOL  
DENVER, COLORADO 80203  
866-3521  
AREA CODE 303

## Letter of Transmittal

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Honorable Richard D. Lamm, Governor  
Members of the Fifty-third Colorado General Assembly

Pursuant to the provisions of Senate Bill 23, 1981 Session of the Colorado General Assembly, the Colorado Energy Coordinating Council herewith submits its findings and recommendations.

Respectfully,

/s/ Senator Ted Strickland,  
Chairman  
Colorado Energy  
Coordinating Council

TS/pn

## FOREWORD

The fourteen member Colorado Energy Coordinating Council is comprised of individuals representing the General Assembly, the executive branch of the state government, businesses and industries directly engaged in energy fields, consumers of energy, and local governments directly impacted by energy development. The members of the council are: Senators Strickland, Bishop and MacManus, appointed by the President of the Senate; Representatives Armstrong, Hudson and Reeves, appointed by the Speaker of the House; Ms. Paula Herzmark, Mr. Monte Pascoe, and Mr. Wellington Webb, appointed by the Governor; Mr. Robert Diederich, Ms. Betty Ann Dittmore, Mr. Charles B. Henning, Ms. June Quimby, and Mr. A. B. (Pete) Slaybaugh, appointed jointly by the Speaker of the House, the President of the Senate, and the Governor. Messrs. Diederich and Slaybaugh were selected as representatives of business and industry engaged in energy fields; Ms. Dittmore and Quimby as representatives of local governments, and Mr. Henning as a representative of consumers of energy.

The committee expresses its appreciation to those persons who testified and provided research materials and other forms of assistance to the committee during this interim.

Mr. Gary Davis, Legislative Drafting Office, was responsible for preparing draft legislation for the committee's consideration.

Wallace Pulliam, Larry Thompson and Richard Mauro of the Legislative Council staff prepared this report and provided research and other staff assistance during the interim.

December, 1981

Lyle C. Kyle  
Director

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COLORADO  
ENERGY COORDINATING COUNCIL

Members of the Committee

Sen. Ted Strickland, Chairman	Mr. Robert Diederich
Rep. Vickie Armstrong, Vice Chairman	Ms. Betty Ann Dittmore
Sen. Tilman Bishop	Ms. Paula Herzmark
Sen. Don MacManus	Mr. Charles P. Henning
Rep. Miller Hudson	Mr. Monte Pascoe
Rep. Jim Reeves	Ms. Jane Quimby
	Mr. A. B. "Pete" Slaybaugh
	Mr. Wellington Webb

Council Staff

Wallace Pulliam  
Principal Analyst

Larry Thompson  
Senior Analyst

Richard Mauro  
Research Assistant

## Introduction

The Colorado Energy Coordinating Council was established by Senate Bill 23, 1981 Session, for a period of two years. The principal statutory directive to the council was that:

The council shall give advice and information and make recommendation to the governor and general assembly concerning the coordination of state government energy activities and the cooperation of state and local governments with businesses, industries, and consumers to achieve orderly energy development and substantial energy conservation.

Pursuant to this charge, the council elected to review and compile updated information on current energy production in the state and projections for future production. In addition, with increased energy development a continuing possibility in the state, the council reviewed different approaches to the regulating and funding of energy development impact. The Joint Review Process, the Rio Blanco-Western Fuels Impact Mitigation Agreement, the distribution of Federal Mineral Leasing Act funds to counties and municipalities, and Colorado's severance taxes on the production of nonrenewable mineral and energy resources were all reviewed by the council. The council also examined on-going state activities to promote the development and use of alternative energy sources and energy conservation programs. Finally the council reviewed the activities of, and the statutory authorization for, the Colorado Energy Research Institute and the Office of Energy Conservation.

This report summarizes the information presented to the council during the course of its six interim meetings. Included are the three bills recommended by the council for consideration by the General Assembly during the 1982 Session. Bill 1 would increase the maximum amount of distribution to counties of Federal Mineral Leasing Act Funds to \$800,000. Bill 2 would establish the Office of Energy Conservation as a type 2 agency in the Department of Regulatory Agencies until 1988. Bill 3 would continue statutory authorization, with amendments, for the Colorado Energy Research Institute until 1988.

## Council Findings and Recommendations

### Distribution of Federal Mineral Leasing Act Funds -- Bill 1

Background. During the 1981 session, the Colorado General Assembly considered and enacted several changes in state law concerning energy and mineral development impact assistance to local governments. However, the current law on distribution of Federal Mineral Leasing Act funds was not changed. Senate Bill 55, which would have increased the maximum county fifty percent share from



\$200,000 to \$800,000 was not passed by the General Assembly. During this interim, Colorado Counties, Inc. presented the council with a proposal for the reconsideration of Senate Bill 55.

Consideration of Proposed Legislation. Representatives of Colorado Counties, Inc. testified that the purpose of Senate Bill 55 was to "provide additional funds for the 'up front' financing of local government facilities and services impacted by rapid energy and mineral development in Colorado." The \$200,000 limit has been in effect since 1957. Testimony suggested that inflation alone would seem to justify raising the limit.

Another area of concern to Colorado Counties which Senate Bill 55 would affect is accomplishment of the intent of federal and state law for distribution of Mineral Leasing Act funds. Both laws provide that distribution priority is to be given to those political subdivisions of the state socially or economically impacted by energy and mineral development.

Testimony by Colorado Counties suggested that these priorities are not currently being satisfied. The following quote from a prepared statement to the council illustrates this situation:

... in 1980 approximately \$13.6 million, or 64 percent of the M.L.A. funds were used to balance the State Public School Fund, rather than used for mineral energy impact purposes. A CCI analysis of 1980 expenditures from the Public School Fund indicates that more than 66 percent is spent in school districts containing less than one percent of the federal public lands involved in mineral leasing programs. Clearly, there is no priority for energy or mineral impacts in the Public School Fund.

A further imbalance is indicated by the direct allocation to counties, who in 1980 received only \$2.4 million, or approximately eleven percent. In addition, approximately \$1.9 million of this amount is deducted from county PILT payments, for a "net" realization to counties of only \$500,000 from the \$21.3 million in M.L.A. funds. 1/

The council was informed that Colorado Counties will request that the governor place this proposed legislation on his call for 1982.

Council Recommendation. Members of the council voiced support for certain aspects of the proposal, however, it was also suggested

1/ Colorado Counties, Inc., "Statement on the Distribution of Federal Mineral Leasing Act Funds," p. 2. Delivered in testimony on October 26, 1981.

that the distribution formula be reconsidered, if the county share was raised. The proposal to increase the county share to a maximum of \$800,000 was adopted by the committee and is contained in Bill 1.

### Office of Energy Conservation -- Bill 2

Background. The Colorado Office of Energy Conservation (OEC) was created in 1977 by an executive order of Governor Lamm. This office is charged with most of the energy efficiency responsibilities in state government. However, most of its funding comes from the federal government.

The major functions of OEC are the following:

1. Develop and administer a Colorado energy conservation plan and its supplements.
2. Generate and disseminate information relating to energy conservation and renewable energy resources.
3. Administer the federal requirement for a fuel allocation (for gasoline and diesel fuel) program for Colorado.
4. Coordinate the development of an emergency energy contingency plan to provide an adequate state response to energy curtailments and energy emergencies.
5. Administer and coordinate the sponsorship of federal grants to Colorado for energy conservation.
6. Act as the lead agency in developing Colorado's Residential Conservation Service Plan.
7. Work in cooperation with the Colorado Energy Research Institute and the Office of State Planning and Budgeting on an energy conservation program for state buildings.

During the 1979 interim, alternative placements of the agency were discussed. Some of the possibilities considered were the Department of Natural Resources, the Department of Local Affairs, and the Office of State Planning and Budgeting. Senate Bill 131, 1980 session, provided statutory authority for the OEC but a drafting error resulted in the law not going into effect. The bill would have placed the office in the Department of Regulatory Agencies. Subsequently, the Governor, by executive order, reinstated the office within the Department of Regulatory Agencies.

Consideration of Proposed Legislation. With the prospect that federal funding will cease as of December 1, 1981, the council considered proposed legislation for the continuation of the Office of Energy Conservation. Testimony reviewed the various programs coordinated by the office and noted that the OEC often works with the

Colorado Energy Research Institute (CERI). A detailed explanation of each of the energy programs administered by the OEC is provided in Appendix A.

There was also some discussion of whether the OEC duplicates some of the activities of the Colorado Energy Research Institute. Testimony indicated that this was not the case. The OEC is primarily a service and "program delivery" agency while CERI is primarily a research agency.

Council Recommendation. Council members voiced the opinion that energy conservation is an important area of state policy. It was suggested that the General Assembly express this policy clearly by providing statutory authority for state support of the Office of Energy Conservation. To accomplish this purpose, the council adopted a proposed bill (included as Bill 2) which would establish the Office of Energy Conservation as a Type 2 agency within the Department of Regulatory Agencies. It was previously a Type 1 agency. The proposed legislation would provide statutory authorization for the OEC until July 1, 1988.

### Colorado Energy Research Institute -- Bill 3

Background. The Colorado Energy Research Institute (CERI) was created in 1974 as part of the Colorado School of Mines to provide independent information to the executive and legislative branches of Colorado government on energy-related matters. CERI's basic function is to help state policymakers anticipate and plan for the development and management of Colorado's energy resources. The agency performs energy policy analysis and provides forecasts on energy demand and consumption in the state.

The following are the major areas of research being conducted by CERI in 1981:

1. Residential energy consumption;
2. Transportation;
3. Emergency preparedness (energy suppliers);
4. Oil shale technologies;
5. State building energy conservation standards; and
6. Water demands for energy development.

Consideration of proposed legislation. Under current law, the statute which created the Colorado Energy Research Institute is repealed as of July 1, 1982. The committee considered proposed legislation for the continuation of CERI until 1988. Testimony reviewed the various programs conducted by CERI and summarized some of the recent research reports.

It was noted that CERI also participates in research activities in cooperation with a number of the state's universities and colleges. In addition, CERI often cooperates with the Office of Energy Conservation on the dissemination of information on residential energy conservation.

Council Recommendation. Committee members agreed that there is a continued need for independent research on energy in Colorado. The proposed legislation, Bill 3, continues statutory authorization for CERI until July 1, 1988. This bill includes the following major changes from the current legislation:

1. The advisory committee is replaced with an oversight committee, comprised of six members of the General Assembly and two members appointed by the Governor. The committee is to establish general policy guidelines for the agency.
2. The provisions for inventory and coordination of all state supported, energy related activities is eliminated because experience has shown it to be virtually impossible to comply with this charge.
3. The bill clarifies the authority of CERI to work with local governments.

#### Colorado Energy and Mineral Production and Projections

As the United State's supply of energy resources from foreign producers has become increasingly expensive and unreliable, national interest in domestic production of energy resources has increased. Similarly, passage of Senate Bill 23, 1981 Session, was an indication of the General Assembly's desire for updated information concerning the status of Colorado's energy resources. Thus, the council considered testimony from representatives of the Department of Natural Resources, the Colorado Geological Survey and the energy industry on current energy resources and production in the state and projected future production.

Just as concern for energy independence has led to increased interest in the production of domestic sources of oil, natural gas, coal, uranium and oil shale, interest in non-depletable sources of energy such as the sun, wind, water and geothermal has also increased. The most significant contributions from renewable energies are currently being realized from the smaller scale, largely decentralized applications. In an attempt to stay abreast of current developments, problems and needs, the council heard testimony from government officials and industry representatives on the current uses of renewable sources of energy, potential capacity, and incentives and barriers to development.

## Non-Renewable Sources

Oil and Natural Gas. With almost thirty million barrels of oil produced in 1980, Colorado currently ranks 13th in the nation in oil production. Also, 1981 figures provided by the Colorado Geological Survey indicate current proven oil reserves of approximately 260 million barrels. A 1977 Colorado School of Mines study estimates undiscovered oil reserves of two billion barrels. The following table shows actual and estimated production figures for selected years from 1977 to 1990, assuming no major new discoveries are made.

TABLE 1 2/

### Oil Production

<u>Year</u>	<u>Production (Barrels)</u>	<u>Barrels Per Day</u>	<u>Percent Change</u>
1977	38,458,812	108,106	-
1978	36,783,111	100,776	- 6.78
1979	32,321,723	88,553	-12.13
1980	29,740,483	81,258	- 8.24

### Projections

1981	28,300,000	77,000	- 5.00
1985	23,000,000	63,000	- 5.00/yr.
1990	17,800,000	49,000	- 5.00/yr.

While oil production is projected to decrease gradually, natural gas production is projected to increase over the next ten years. The reason for this projected increase is an assumption of production from "tight gas sands" in the Piceance and the Denver Basins. Table 2 shows actual production in the state for the years 1977-1980 and projections for 1985 and 1990. The data from the Colorado Energy Research Institute (CERI) projections assume "major" additional production from the tight gas sands while the Department of Natural Resources (DNR) projections assume "reasonable" production.

2/ This table was presented in testimony given on August 17, 1981, by the Department of Natural Resources.

TABLE 2 3/Natural Gas Production

<u>Year</u>	<u>Total Production (MCF=thousand cubic feet)</u>	<u>MCF/day</u>	<u>Percent Change</u>
1977	195,656,368	536,045	-
1978	189,049,658	517,944	- 3.38
1979	192,931,994	528,581	+ 2.05
1980	191,572,057	523,421	- 0.98

Projections

	<u>DNR</u>	<u>CERI</u>
1985	196,000,000	347,200,000
1990	201,000,000	373,000,000

Industry representatives also informed the council that most crude oil and natural gas produced within the state is exported for refinement and sale. This is due to the nature of the pipeline systems, refinery locations, and market conditions at the time of field development. As a result, most oil and natural gas consumed in Colorado is imported from other states.

Coal. According to the Colorado Mining Association, coal is at present Colorado's most abundant energy resource with total estimated reserves of 3.8 trillion tons. In order to gather current information on the coal industry in Colorado, the council reviewed testimony on coal production and projections. The Colorado Geological Survey offered the following introduction:

The area underlain by coal resources covers nearly 30,000 square miles or nearly one-third of the state. Over 434 billion tons of in-place coal resources are believed to remain in Colorado at less than 6,000 feet

3/ This table was presented in testimony on August 17, 1981 by the Department of Natural Resources. Production 1977-1980 data is from the Colorado Oil and Gas Commission. CERI projections are from the Colorado Energy Research Institute, "Colorado Energy Production for the '80s", 1980.

of depth (Averitt, 1975, p. 14). Although Colorado's coal resources range from anthracite to lignite, most of the resource and all of the current production is bituminous and sub-bituminous. Sulfur content ranges from 0.2 to 1.2 percent. More important, 99 percent of the coals contain less than 1 percent and more than 50 percent contain less than .7 percent sulfur. Coals range in age from Late Cretaceous to Eocene. Although surface mining contributes approximately 70 percent of current production, only 5 to 10 percent of total resources could be mined by surface methods. Approximately one-fourth of the coal production is used for coking coal and most of the remaining is used for electrical generation.

Colorado's coal production which began in 1864 exhibits a varied history. An early record production of 12.5 million tons a year in 1918 erratically decreased to less than 3 million tons in 1954. Wars, depressions, labor problems, governmental regulations, and changing patterns of societal and industrial usage each /have had/ a dramatic impact on production .... Since 1964 the increasing demand and the advent of surface mining provided marked production increases to a total of 18 million tons in 1979. 4/

Table 3 indicates Colorado coal production for the years 1977-1980. Note that after significant increases in 1978 and 1979, production in 1980 increased only slightly. Table 4 indicates the estimated production capacity for the six major coal producing regions in Colorado. Note that actual production in 1980 (18.7 million tons) fell some three million tons short of the estimated capacity (21.9 million tons).

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4/ John Rold, "Colorado's Energy Resources"; presented in testimony on August 17, 1981.

TABLE 3 5/

## Colorado Coal Production -- 1977-1980

<u>Colorado Coal Production -- 1980</u>		<u>Colorado Production -- 1977-80</u>		
				<u>% Change</u>
Production	18.77 Million Tons	1977	11.97 MT	
Bituminous	9.02 MT			
Sub-Bituminous	9.74 MT	1978	14.36 MT	+20.00
Underground	5.72 MT			
Strip	13.04 MT	1979	18.10 MT	+26.00
Use		1980	18.77 MT	+ 3.70
Instate	7.99 MT			
Out of state	8.86 MT			

TABLE 4 6/Colorado Coal Mining Production -- Capacity  
1980-1985\*

	<u>1980</u>	<u>1985</u>	<u>Increase</u>
Total Colorado	21,900,000	37,148,000	15,248,000
<u>Coal Region</u>			
Denver Basin	--	840,000	840,000
Raton Mesa**	1,600,000	3,431,000	1,831,000
San Juan	300,000	425,000	125,000
Uinta***	9,815,000	21,237,000	11,422,000
Green River	9,700,000	10,365,000	665,000
North Park	455,000	850,000	395,000

\* Source: MLRB Coal Mine Permit Applications.

\*\* Mainly Coking Quality Coal.

\*\*\* Coking Quality Coal in SE Portion of Basin.

5/ This table was presented in testimony by the Department of Natural Resources on August 17, 1981.6/ This table was presented in testimony by the Department of Natural Resources on August 17, 1981. Source: Colorado Geological Survey, August 10, 1981.



The coal industry in Colorado. The council heard testimony from industry representatives concerning the market for Colorado coal and the status of the coal industry in Colorado. According to the industry, Colorado coal companies are at an economic disadvantage relative to other states, because the geologic characteristics of many of the mines and the state's mountainous terrain make the mining and transportation of coal in Colorado more expensive. For example, representatives of the Denver and Rio Grande Railroad testified that at least seven million tons of Colorado coal sales were lost in 1980 due to higher transportation costs in the state. They noted that Denver and Rio Grande Railroad charges can range from three to six mills per ton mile more than charges by railroad companies in other states. This is primarily because the steep grades and many curvatures of the Colorado mountains make it very expensive to build and maintain tracks. Another indicator of the harsh economic realities, especially for smaller coal companies, are the statistics which show a decline in the number of companies from 124 in 1960 to 44 in 1980.

Having considered testimony on the production of Colorado coal, the council also reviewed information concerning the future demand for Colorado coal. Table 5 presents projections of the market for Colorado coal in 1985 and 1990, indicating low, medium and high production scenarios. While such figures may be useful in considering state energy policies, they can vary considerably relative to unpredictable governmental policies, changing economic conditions, and changing energy use patterns.

TABLE 5 7/

Market for Colorado Coal  
(million tons)

Year	LOW			MEDIUM			HIGH		
	CERI	DOE	ICF	CERI	DOE	ICF	CERI	DOE	ICF
1985	19.5	33.8	25.6	27.0	33.9	34.9	30.5	38.2	50.6
1990	24.0	28.3	35.0	28.6	33.1	52.3	36.5	43.3	95.1

CERI = Colorado Energy Research Institute, Colorado Energy Consumption in 1990: A Preliminary Demand Forecast and Analysis, July 1981.

DOE = U.S. Department of Energy, Leasing Policy Development Office, The 1980 Biennial Update of National and Regional Coal Production Goals for 1985, 1990 and 1995, March 1981.

ICF = ICF, Inc., Analysis and Critique of the Department of Energy's August 7, 1980 Report Entitled "Preliminary National and Regional Coal Production Goals for 1985, 1990 and 1995", prepared for the Rocky Mountain Energy Company, October 1980.

7/ This table was presented in testimony on August 17, 1981 by the Department of Natural Resources.

Electricity. An issue related to the production of energy resources in the state is the generation of electricity. Representatives of electric utilities and the Public Utilities Commission provided the council with information concerning electricity consumption and generation capacity in the state. While electricity consumption in both rural and urban areas continued to grow during the last decade, the rate of growth has decreased since 1973. However, these growth rates continue to exceed those of other forms of energy. Electricity, usually generated from coal, is being increasingly substituted by many utilities for the direct use of oil and natural gas, largely for reasons of convenience, price, and independence from foreign producers. Table 6 shows the existing generating capacity available for use at any given time during 1979.

TABLE 6 8/

Existing Generating Capacity in Colorado, 1979

(Net Generation in Megawatts,  
Adjusted for Summer Operating Conditions)

	<u>Power Generated in Colorado</u>	<u>Power for Use in Colorado</u>
Steam	3,629	3,303
Internal Combustion (Diesel)	72	72
Combustion Turbines	485	485
Conventional Hydroelectric	502	502
Pump Storage Hydroelectric	<u>162</u>	<u>162</u>
Total	4,850	4,524

Representatives of the Public Service Company testified that, under existing conditions, it may be difficult for utilities to meet the increasing demands for electricity which they project over the next decade. The Public Service Company is considering alternative approaches for meeting these demands including using more coal for electricity generation and seeking regulatory changes to improve financial stability. Table 7 indicates ten year projections of demand for electricity in Colorado for the years 1979-1989.

8/ This table is derived from information presented on behalf of the Public Utilities Commission at the July 20, 1981 meeting.

TABLE 7 9/

Electric Energy Requirements for Colorado

(Gigawatt hours)

1979	23,662.53	1985	35,034.13
1980	25,774.93	1986	36,929.03
1981	27,398.03	1987	38,820.23
1982	29,284.83	1988	40,536.73
1983	31,323.03	1989	42,418.73
1984	33,012.83		

Solar Energy

The direct use of the sun is a very old and tested approach to space heating. In addition to heat, the current popularity in both passive and active solar systems has been accompanied by an interest in providing electricity through the use of photovoltaic cells. Testimony before the committee provided the following information on solar energy.

Potential capacity. A December, 1980 survey conducted by the Office of Energy Conservation indicated that there were 2,500 solar applications in the state. The survey projects that 2,500 more applications will occur in 1981. Also, a recent Office of Energy Conservation study estimated that the state could save around one billion dollars in reduced natural gas imports over the next ten years by incorporating passive solar into ten percent of the new housing units constructed during that period.

Incentives and Barriers. Testimony to the committee noted that tax credits have been effective in encouraging both individuals and businesses to invest in solar energy and especially conservation. Estimates based on Internal Revenue Service data indicate that \$5.2 million in energy credits were claimed by 27,000 Colorado homeowners in 1980. Of this, \$4 million was for energy conservation improvements. However, a barrier to solar utilization is that solar access laws (the legal right to access to the sun) are still lacking in many communities in Colorado.

Wind Power

Using the wind to generate electricity is also an old and time tested technology. Testimony to the council provided information on

9/ This table is derived from information presented on behalf of the Public Utilities Commission at the July 20, 1981 meeting.

the current status of the wind industry and the continuing research being carried on by Rockwell International at Rocky Flats under the federal Wind Energy Program. It was noted that since 1975, the number of wind machine manufacturers nationwide has increased 300 percent and the number of retailers has risen from 10 to over 150.

Incentives and Barriers. As with other forms of renewable energy, wind is subject to a variety of institutional barriers and incentives. Some of these were presented to the council.

Incentives:

- a) Federal and state tax credits encourage use of wind machines.
- b) Developments in wind technology are improving the cost effectiveness of wind energy.

Barriers:

- a) Height variances are still required in most communities.
- b) Some utilities refuse to buy or store the excess generation.

Hydroelectric Power

Hydroelectric generation is another old source of electricity currently enjoying a resurgence in popularity. The council heard testimony from representatives of the Department of Natural Resources on the status of this energy source in the state. The following summarizes that testimony.

Potential capacity. According to Ms. Barbara Chambliss of the Office of Energy Conservation, the current total Colorado electricity generation capacity is 4,850 megawatts and the current total hydroelectric generating capacity is approximately 750-900 megawatts. Thus, hydroelectric power currently provides about fifteen percent of the state's electricity generation capacity. There is also a total hydroelectric generating potential of 4,524 megawatts, which represents ninety-four percent of the current total state capacity.

Incentives and Barriers. Ms. Chambliss informed the council that the state should be aware of access and water right issues that may result from the fact that federal law allows someone other than the owner to develop a hydroelectric site, if the owner is unwilling to do so. She also discussed a number of other barriers and incentives to hydroelectric development.

Incentives:

- a) Federal law provides for a total of twenty-one percent in investment tax credits for small scale hydroelectric development.

- b) The Federal Public Utilities Regulatory Policy Act of 1978 (PURPA) exempts small scale hydroelectric projects of less than thirty megawatts from state laws and regulations governing electric utilities, and certain parts of the Federal Power Act.
- c) Public Utilities Commission rate setting can affect the profitability of hydroelectric and thus the incentive to develop that source of power.

Barriers:

- a) There are no state tax incentives for such development, but incentives could be added to existing statute.
- b) There is no state program to determine the best sites for hydroelectric development and the best development methods.
- c) The current permitting process is rather cumbersome; development could be encouraged by the passage of a "one stop" permit law which would provide for a pre-permit meeting of all involved parties and for the permitting process to be overseen by one agency.

For further information regarding the feasibility of small scale hydroelectric projects, their financing, and laws governing their development the reader is referred to the handbook "Water Over the Dam" published by the Colorado Water Conservation Board.

Geothermal Energy

Heat generated by natural processes beneath the earth's surface was another source of energy reviewed by the council. Geothermal is again an old energy resource currently experiencing renewed interest. Testimony before the Council provided the following information on geothermal energy.

Potential capacity. There is a potential 5.9 quads (quadrillion BTU) of available geothermal energy resources in Colorado. <sup>10/</sup> Currently, there is no significant commercial activity in the state. However, there are five electric power generation and eight nonelectric sites either under development or under lease to develop. Potential uses for geothermal, include electric power generation, space heating and cooling, and water heating. A recent study for the Colorado Geological Survey concluded that six of eleven state-owned buildings studied are good candidates for geothermal development. The study concluded that the Colorado State Reformatory has the best economic feasibility for geothermal use for hot water heating.

10/ This information was presented in testimony by the Colorado Geological Survey on October 5, 1981.

Incentives and Barriers. Several Colorado areas have been using this alternate energy resource for many years. Although there are many advantages to its use, there are also a number of roadblocks.

Incentives:

- a) The technology is "off the shelf" -- not research oriented.
- b) Geothermal can be applied to many industrial processes as well as to district heating systems.
- c) Geothermal is site specific; however, it is usually very cost effective for proven sites.
- d) In Colorado, geographical areas with geothermal potentials often overlay economically depressed regions. As such, it can represent an extra incentive for attracting new business activity.
- e) A continuing educational effort will probably be necessary.
- f) There is a fifteen percent federal "intangible drilling" credit and a Colorado ten percent depletion allowance.

Barriers:

- a) Resource confirmation and development financing is difficult to acquire.
- b) There is low awareness of the cost effectiveness of geothermal energy.
- c) The permitting process and the determination of water rights are complicated and time consuming.

The Pagosa Springs Project. Representatives of Coury and Associates, energy consultants, gave a presentation on the Pagosa Springs District Heating System project. This project was designed to provide commercial and residential heating to ten public buildings, sixty-three residences, and fifty-four businesses. The wells required for the project were completed in the summer of 1979; the system design was completed in December, 1980; construction began June 2, 1981; and the system became operational on October 15, 1981. The total estimated cost of the project is \$1,364,280 with eighty-one percent of the funding from the Department of Energy.

Testimony noted that the geothermal system is compatible for use with the conventional heating equipment already in homes. Also, while the system does not heat the whole town, a recent additional Department of Energy grant will allow for expansion of the system.

Representatives of the Colorado Geological Survey and Coury and Associates offered a number of suggestions to the council regarding legislation the General Assembly might wish to consider for encouraging the development of geothermal energy:

- a) Establish by statute a specific temperature above which water would be considered a geothermal resource and below which would be considered a water resource.
- b) Eliminate the requirement of a \$10,000 bond for the use of a geothermal heat pump.
- c) Simplify the permitting process, possibly by instituting a "one-stop" permit procedure.
- d) Create a state funded "user coupled drilling program" similar to the federal program in which ninety percent of the drilling costs are paid by federal funds for unsuccessful wells and ten percent for successful wells.

The council makes no recommendation on any of these suggestions, preferring to see if many of them can be addressed administratively.

### Gasohol

Alcohol has been used as a fuel in the United States since 1935. As with other renewable fuels, interest in its use is increasing and, in fact, its use has grown during the past decade. Testimony before the council provided the following information on gasohol.

Potential capacity. The Gasohol Promotion Committee estimates that if ten percent of the unleaded gasoline consumed annually in Colorado were replaced with gasohol, approximately sixty million gallons of gasoline would be conserved per year. Fourteen alcohol plants are in operation in the state producing 6.9 million gallons/year, ranging in size from units producing less than 10,000 gallons/year to plants producing 3 million gallons/year. Eleven plants, ranging from 100,000 gallons/year capacity to 15 million gallons/year capacity, are under construction. Eight additional plants capable of producing 88 million gallons/year are in planning stages. 11/

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11/ This information was presented in testimony on October 26, 1981 by the Department of Agriculture.

Incentives and barriers. Gasohol is gradually gaining acceptance as a legitimate fuel. However, testimony suggested that public awareness of the benefits of gasohol use is still low. Although 1981 sales are projected at 4.5 million gallons as compared with 3.5 million gallons in 1980, a number of retail stations have recently discontinued sale of gasohol. Some of the barriers and incentives to gasohol production and use in Colorado follow.

Incentives:

- a) The federal four cent fuel tax exemption and the state five cent fuel tax reduction (the 1979 "Nickel Bill") encourage alcohol production. The Nickel Bill applies to Colorado produced alcohol only, thus encouraging the growth of a state gasohol industry.
- b) House Bill 1463, 1979 session, requires the use of gasohol in all states vehicles when available.

Barriers:

- a) Colorado produced alcohol is still relatively unavailable.
- b) Unleaded gasoline is still less expensive than gasohol.
- c) No clear guidelines exist to encourage local, private financing of alcohol production.
- d) Gasohol still has a poor image with the public.

Energy Permitting -- The Joint Review Process

One way the state attempts to facilitate cooperation among the state, local governments and the energy industry is the Joint Review Process. The Joint Review Process is a coordinated administrative procedure which by agreement between the state, local governments and industry is designed to organize the necessary administrative and regulatory review of major energy and mineral resource development projects.

The Joint Review Process was made possible by a 1978 federal Department of Energy grant and has received its funding for this year from the General Assembly. Interested in the effectiveness of the process, its non-formalized ad hoc status, and the non-statutory funding provisions, the council decided that a review thereof was appropriate. The council decided that the process should not be formalized by statute at this time, but it intends to continue monitoring the process.



During its 1981 review, the council was provided with information on projects currently participating in the process. A background report describing these projects is included as Appendix B. Furthermore, testimony was solicited from participants as to the effectiveness of the Joint Review Process, the benefits that may be derived therefrom, and what some see as problems with the process. Those testifying before the committee represented Rio Blanco County, the town of Rangely, Multi-Mineral Corporation, Rocky Mountain Energy Company, and a private consultant. Some of the benefits and problems noted to the council were:

Benefits of the Joint Review Process:

- a) facilitates cooperation among industry and governmental units;
- b) encourages sharing of information on energy development and potential impacts;
- c) aids preparation of environmental impact statements;
- d) encourages public participation; and
- e) expedites the development process.

Problems with the Joint Review Process:

- a) does not address the situation of mining in a high population, "no growth" area;
- b) there is a possibility that state and federal governments could impose their will on local and county governments;
- c) companies are required to hire additional staff to participate and the extra cost can be a substantial burden on small companies;
- d) intercounty relations are not always dealt with adequately;
- e) special districts and municipalities are not a formal part of the process; and
- f) no substantive authority exists within the Joint Review Process.

Some suggestions for future consideration by the council for improving the effectiveness of the Joint Review Process were also offered:

- a) make participation by local, state and federal governments mandatory;
- b) give local governments clear cut authority with parameters relating to the zone of impact;

- c) develop some method for assuring consideration of multi-jurisdictional issues; and
- d) develop a continuous monitoring process.

### Energy Impact Assistance

As Colorado experiences increasing energy development activity, the mitigation of the social-economic impacts on communities of such development was a major concern of the council. Thus, the council solicited testimony from local government and industry representatives concerning alternative approaches to impact mitigation.

### Western Fuels Agreement

One method of funding the social and economic impacts of energy development is exemplified by the Socio-Economic Impact Mitigation Agreement between the Western Fuels Association, Rio Blanco County, the town of Rangely, and other local governmental entities within the county. This social-economic impact mitigation agreement covers the impacts resulting from a coal mine being built by Western Fuels near Rangely, Colorado, to supply the new Deseret powerplant in the State of Utah. The agreement covers housing, schools, water, sewers, roads and a variety of other community services which will be necessary to provide for the estimated 400 workers from the mine who will live in Rangely. Committee members and participants in the agreement noted that this agreement is one example of how business and government can cooperate for mutual benefit in the development of the state's resources, but it may not necessarily be a model for other communities.

Rio Blanco county officials indicated that the philosophy behind the agreement is that industry and communities should share the costs of development and, specifically, that current residents should not have the entire responsibility for paying for the social and economic costs of new development. In addition, an important part of the agreement provides for a monitoring process which will allow the county and Western Fuels to adjust the payments in the contract relative to any increases or decreases in governmental costs directly attributable to the mine which may be incurred over a specified period of time.

An outline of the agreement is included as Appendix C.

### Battlement Mesa

Another approach is to construct a completely new community. Exxon is building the Battlement Mesa community which is projected to house 1,000 energy workers by May, 1981 and build 7,000 housing units

to accommodate as many as 20,000 people in the next twelve years. A company representative testified that financial arrangements for housing include a seven year commercial loan to apartment developers and a bond issue for single family units.

It was explained that Exxon decided to build a new town because they determined that there would not be enough space in the existing, nearby town of Parachute, Colorado, for the projected population. Building a new town also meant they could develop housing and attendant services faster, by bypassing the zoning and other permit requirements of an existing town.

### Tax Base Sharing

In Colorado, most energy development and attendant tax revenues occur in the unincorporated areas of a county, but most of the impacts occur within neighboring municipalities which may be within that county or located within a neighboring county. Furthermore, in the long-term, significant tax benefits may occur, but in the short-term, local governments often must face substantial fiscal outlays to meet the demands of the increased population for governmental services. The aforementioned Western Fuels-Rio Blanco County agreement and Battlement Mesa township represent two approaches to resolving parts of this problem. A third approach, tax base sharing, similar to the plan provided by the Minnesota Metropolitan Revenue Distribution Act was also reviewed by the committee.

In brief, the Minnesota Act provides a way for local governments to share in the resources generated by the growth in commercial-industrial property valuation, without removing any resources which the local governments already have. Each government in the Twin Cities metropolitan region contributes forty percent of the increase in its commercial-industrial assessed valuation for the year to the creation of an areawide tax base. Each government is then allocated a share of the areawide tax base based on its population and assessed valuation, adjusted so that a government will receive a larger share if its population is higher than the average or its valuation is lower than the average.

Although this law operates in a metropolitan area, the council was interested in its provisions because it represents a method of impact mitigation that may be applicable in situations where energy development occurs in one jurisdiction and the social-economic impact occurs in another. Through tax base sharing, the disparity in financial ability often occasioned by such development may be balanced.

During the discussion of tax base sharing, Mr. Monte Pascoe, executive director of the Department of Natural Resources, noted that his office had outlined a proposal, somewhat similar in intent to the Minnesota approach, to the 1980 Energy Coordinating Advisory Committee. The proposal suggested legislation to create a governing

entity for northwestern Colorado which could, where necessary, receive, disburse and arrange for payment of impact aid funds for oil shale. This governing entity would have multi-county membership, would work with the state, and could borrow funds from the federal government and industry.

The council agreed that the concepts of cooperation among local governments and the redistribution of energy related revenues for impact assistance should be subjects for further consideration and study, both by the council and by the General Assembly.

### Severance Taxes

As increased production of Colorado's mineral and energy resources over the next several decades is becoming more likely, the council was of the opinion that severance taxes will become an important issue related to the mitigation of the social, economic, and environmental impacts of energy development. In an effort to gather current information on Colorado's severance taxes in relation to other states, the effect of severance taxes on the energy industry, and the need to provide local governments some financial assistance to mitigate the impact of energy and mineral production and compensate them for the loss of nonreplenishable natural resources, the council solicited testimony from representatives of the energy and mineral industries and the Department of Natural Resources.

### History of the Colorado Severance Tax

In 1977 the General Assembly enacted the first severance tax in the state by adopting House Bill 1076. Previously, the state imposed a special production tax only on oil and gas, and a \$0.007 per ton tax on coal to support coal mine inspection costs.

According to the legislative declaration of House Bill 1076, the General Assembly found it necessary to enact the severance tax because "when nonrenewable natural resources are removed from the earth, the value of such resources to the state of Colorado is irretrievably lost".

Therefore, "to recapture a portion of this lost wealth", the severance tax was imposed. The General Assembly also intended that a portion of the revenue generated by the severance tax "be made available to local governments to offset the impact created by nonrenewable resource development".

### Industry Perspectives on Severance Taxes

Testimony was solicited from the energy industry for views and recommendations concerning severance taxes in Colorado. Those giving

testimony were representatives of the Rocky Mountain Oil and Gas Association, the Climax Molybdenum Company, and the Colorado Mining Association.

Oil and gas. The Colorado severance tax on oil and gas is levied on production from wells producing more than ten barrels a day of crude oil at rates graduated from two percent of gross income under \$25,000 up to five percent of gross income over \$300,000, with ad valorem (property) taxes applicable as credit. Table 8 shows the severance and other taxes and the production figures for the oil and gas industry in Colorado for 1980. Total severance tax collections for the industry amounted to just over two percent of the total assessed value of oil and gas production. The total tax burden was approximately 8.9 percent of assessed production value.

TABLE 8 12/

Colorado Oil and Gas Industry

Approximate Taxes to be Paid  
On 1980-1981 Production

Severance Tax Collections*.....	\$18,010,500
Severed Mineral Interest .....	176,540
Ad Valorem Oil & Gas Production (1980 assessment) .....	44,483,100
Conservation Levy .....	949,777
Surface Equipment .....	1,342,609
Pipelines (crude, refined, natural gas)...	6,333,366
Total	\$71,295,892

1980 PRODUCTION

Oil Production .....	29,801,524	bbls
Gas Production .....	191,805,615,000	cubic feet
Assessed value O/G production.....	\$803,510,360.00	

\* This figure represents severance tax collections by the Department of Revenue. According to the department, actual tax liability for calendar year 1980 is \$7,746,000. Estimated quarterly severance tax payments made by the industry may result in collections that exceed the actual tax liability. Such collections will be forwarded as a credit to offset severance tax liability in the following fiscal year.

12/ This table was presented in testimony on November 9, 1981. The source of the information is the Colorado Petroleum Association.

In comparison with other western states, Colorado is in the mid-range between the highest and lowest tax rates with regard to severance and ad valorem taxes. Table 9, on the following page, compares Colorado with six other Rocky Mountain states for severance taxes, ad valorem taxes, and federal and state lease royalty income for 1980. Colorado ranks second in gas production, third in oil production, fourth in severance taxes, third in ad valorem taxes, and fourth in lease-royalty income.

Metallic Minerals. Colorado law provides for a severance tax of fifteen cents per ton of molybdenum ore produced. For other metallic minerals it provides for a tax of 2.25 percent of gross income on production in excess of \$11 million, with a credit for ad valorem (property) taxes on gross proceeds not to exceed 50 percent of the severance tax. Table 10 indicates the 1980 taxes paid by Climax Molybdenum Company. The severance tax amount represents approximately 1.1 percent of assessed production value, while the total of all taxes is about 6.7 percent of production value.

TABLE 10 13/

Climax Molybdenum Company, 1980 Taxes

Property Taxes (1980 payable 1981)	\$12.8 million
Sales, Use and Income Taxes	6.7
Severance Taxes	4.0
Total Taxes	\$23.5 million
Assessed Valuation (1980 Production)	\$349,527,100

13/ This table is derived from testimony given on behalf of Climax Molybdenum Company on October 26, 1981.

TABLE 9

ROCKY MOUNTAIN STATES  
1980 \*

	PRODUCTION OIL AND GAS	PRODUCTION TAXES ASSESSED OIL AND GAS	LEASE-ROYALTY INCOME TO STATE
Colorado	Oil 29,801,524	Severance \$ 18,010,500.00	State Lands \$ 10,997,559.00
	Gas <u>191,805,615 MCF</u>	Ad Valorem \$ <u>44,483,100.00</u>	Federal Lands \$ <u>25,055,492.00</u>
Montana	Oil 29,583,804	Severance \$ 22,906,597.00	State Lands \$ 48,220,537.00
	Gas <u>53,802,088 MCF</u>	Ad Valorem \$ <u>65,219,201.00</u>	Federal Lands \$ <u>11,808,646.00</u>
Nebraska	Oil 6,239,652 bbls	Severance \$ 3,401,072.00	State Lands \$ 1,533,196.00
	Gas <u>2,500,276 MCF</u>	Ad Valorem \$ <u>7,525,000.00</u>	Federal Lands \$ (negligible)
North Dakota	Oil 41,000,000 bbls	Severance \$ 118,200,000.00	State Lands \$ 55,400,000.00
	Gas <u>50,000,000 MCF</u>	Ad Valorem \$ (not levied)	Federal Lands \$ <u>9,700,000.00</u>
South Dakota	Oil 910,000 bbls	Severance \$ 764,000.00	State Lands \$ 6,000,000.00
	Gas (negligible)	Ad Valorem \$ (not levied)	Federal Lands \$ (negligible)
Utah	Oil 24,977,683 bbls	Severance \$ 6,853,169.00	State Lands \$ 17,007,761.00
	Gas <u>87,765,597 MCF</u>	Ad Valorem \$ <u>14,123,683.00</u>	Federal Lands \$ <u>17,026,954.00</u>
Wyoming	Oil 125,683,216 bbls	Severance \$ 67,088,040.00	State Lands \$ 35,211,628.00
	Gas <u>381,825,017 MCF</u>	Ad Valorem \$ <u>110,414,000.00</u>	Federal Lands \$ <u>109,736,756.00</u>

\*Most recent year, some numbers are Calendar year 1980, while some numbers are fiscal year July 1, 1980-June 30, 1981.

Source: Rocky Mountain Oil and Gas Association, presented in testimony on November 9, 1981.

Again, compared with other western states which impose a severance tax, Colorado is in the middle. Table 11 presents a hypothetical tax for Climax Molybdenum Company when the severance tax rate in six other western states is applied to its 1978 production. It should also be noted that four states, California, Oregon, Washington and Nevada, do not impose a severance tax on minerals.

TABLE 11 14/

Hypothetical Climax Molybdenum Tax (1978)

New Mexico	\$0.9 million
Idaho	1.7
Utah	2.3
Wyoming	4.6
Montana	7.8
Arizona	8.4
Colorado (1978 Actual)	\$3,512,618

Oil shale. Each commercial oil shale facility in Colorado is subject to a four percent severance tax on gross proceeds ninety days after the facility reaches fifty percent of its designated capacity. The four percent rate is phased in over a four year period at one percent each year. This rate is also subject to various exemptions and credits. No oil shale severance tax has been paid because commercial production has not yet begun. Industry representatives estimate that commercial production will begin in 1988.

Coal. The statutory severance tax rate on coal is sixty cents per ton. The rate is modified up or down one percent for every three point change in the index of producers prices for all commodities, prepared by the Bureau of Labor Statistics, United States Department of Labor. Therefore, for every three point change in the index, the tax rate increases or decreases 6/10 of one cent. Currently the tax rate on coal is 78.6 cents per ton.

The severance tax is not imposed upon the first 8,000 tons of coal produced in each quarter of the taxable year. There are also two allowable credits against the severance tax: 1) fifty percent of the severance tax on coal produced from underground mines; and 2) an additional credit of fifty percent of the severance tax on the production of lignite coal.

14/ This table was compiled from testimony given on behalf of Climax Molybdenum Company on October 26, 1981.



Table 12 shows the 1980-1981 severance tax collections, estimated property tax, and total state production value for the Colorado coal industry. The severance tax burden is approximately 2.8 percent of production value, while the property tax is about two percent of production value.

TABLE 12

Coal Industry Severance and Property Taxes (1980-1981)

Severance Tax Collections*	\$ 10,641,794
Estimated Property Tax**	7,649,579
Total	\$ 18,291,373
Total Production Value***	\$379,703,304

- \* Source: Department of Revenue, Annual Report, 1981.  
 \*\* Estimate based on "Tenth Annual Report", Division of Property Taxation, Department of Local Affairs, 1980. Assumes average statewide mill levy of seventy-three mills.  
 \*\*\* Estimate, source: Colorado Division of Mines, "Summary of Mineral Activity in 1980".

Table 13 displays a comparison of Colorado revenues from coal severance taxes with revenues from three other western states for 1980. The table also illustrates the percentage of the total severance taxes collected in each state represented by coal severance taxes. The table indicates significantly higher revenues and percentages for Wyoming and especially Montana. Also, even though Colorado shows higher production and a higher percentage than North Dakota, severance tax revenues for 1980 were still lower.

TABLE 13

Rocky Mountain States  
 Coal Severance Taxes and Production 1980

State	Production* (Tons)	Severance Tax**	Percentage of Total Severance Taxes
Wyoming	88,928,000	\$43,337,000	41
Montana	32,920,000	\$74,762,440	79
Colorado	18,938,738	\$11,203,560	36
North Dakota	17,231,000	\$14,056,640	32

- \* Production figures are from "Colorado Coal"; Colorado Mining Association, 1981.  
 \*\* Severance Tax figures are estimates determined by taking U.S. Census Bureau severance tax revenue statistics multiplied by Congressional Research Service statistics for coal severance tax revenues as a percentage of total severance tax revenues.

Industry representatives pointed out that other taxes, such as income taxes, sales and use taxes, lease payments, and royalty payments, must be added to severance and property taxes in order to understand the overall tax burden on coal. However, total amounts for most such taxes are extremely difficult to determine. The council was provided with a comparison of selected western states regarding royalty payments on federal lands (Table 14) and state lease receipts (Table 15). Colorado is third in production value, but second in royalty payments and lease receipts.

TABLE 14 15/

Federal Coal Production Value and Royalty Payments,  
By State: Fiscal Year 1980

<u>State</u>	<u>Coal Production (tons)</u>	<u>Production Value(s)</u>	<u>Royalty Value(s)</u>
Colorado	8,562,682	\$161,499,595	\$7,115,564
Montana	10,345,255	93,572,897	2,065,885
New Mexico	6,546,224	82,228,476	1,472,900
North Dakota	1,418,129	6,507,412	272,272
Utah	8,618,415	200,641,560	3,968,073
Wyoming	36,130,862	304,746,633	8,804,557

NOTE: These royalty data represent the amount billed in FY 1980, not the actual amount collected.

SOURCE: U.S. Department of the Interior, Geological Survey, unpublished data.

TABLE 15 16/

Payments to States -- Coal Leasing Receipts  
Fiscal Year 1980

<u>State</u>	<u>Coal</u>
Colorado	\$2,898,768.00
Montana	777,619.50
New Mexico	762,047.50
North Dakota	147,751.50
Utah	1,987,242.00
Wyoming	4,363,265.00

15/ This table was presented in testimony on October 26, 1981 on behalf of the Colorado Mining Association.

16/ This table was presented to the committee in testimony on October 26, 1981 on behalf of the Colorado Mining Association.

## Executive Branch Proposal for Severance Tax Legislation

The council reviewed suggestions by Mr. Monte Pascoe, Department of Natural Resources, for changes in Colorado's severance tax law. He testified that a primary justification for severance taxes is to provide funds for communities for "front end" financing of additional services required by energy development. With severance taxes, these funds are raised directly from the persons and organizations causing the impact.

The Governor may propose to change the rate of taxation on coal, oil shale, and molybdenum and provide that such taxes be based on the value of the mineral at the point of first sale, less other taxes and royalties. This proposal would set severance tax rates as follows:

- a) Coal -- five percent of the value of the coal produced;
- b) Molybdenum -- one percent of the value of the molybdenum concentrates produced; and
- c) Oil shale -- two percent of the value of the shale oil produced, with the first 5,000 barrels per day exempt and twenty-five percent of underground production as a credit.

BILL 1

A BILL FOR AN ACT

1 CONCERNING THE LIMITATION ON THE DISTRIBUTION OF FEDERAL  
2 MINERAL LEASING MONEY TO COUNTIES.

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Bill Summary

(Note: This summary applies to this bill as introduced and does not necessarily reflect any amendments which may be subsequently adopted.)

Increases the limit on the amount of money which can be distributed to any one county from federal mineral leasing money received by the state treasurer.

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3 Be it enacted by the General Assembly of the State of Colorado:

4 SECTION 1. 34-63-102 (3) (a), Colorado Revised Statutes  
5 1973, as amended, is amended to read:

6 34-63-102. Creation of mineral leasing fund -  
7 distribution. (3) (a) Fifty percent of all moneys described  
8 in paragraph (a) of subsection (1) of this section shall, upon  
9 receipt, be paid to each of those respective counties of this  
10 state from which the federal leasing money is derived in  
11 proportion to the amount of said federal leasing money derived  
12 from each of the respective counties for use by said counties

1 for the purposes described in subsection (1) of this section;  
2 except that no single county shall be paid an amount in excess  
3 of ~~two~~ EIGHT hundred thousand dollars in any calendar year  
4 under the provisions of this paragraph (a).

5 SECTION 2. Safety clause. The general assembly hereby  
6 finds, determines, and declares that this act is necessary  
7 for the immediate preservation of the public peace, health,  
8 and safety.

BILL 2

A BILL FOR AN ACT

1 CONCERNING THE OFFICE OF ENERGY CONSERVATION, AND MAKING AN  
2 APPROPRIATION THEREFOR.

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Bill Summary

(Note: This summary applies to this bill as introduced and does not necessarily reflect any amendments which may be subsequently adopted.)

Provides for the reestablishment of the office of energy conservation after July 1, 1982, as a division within the department of regulatory agencies. Makes the office subject to termination under the sunset law provisions for regulatory agencies.

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3 Be it enacted by the General Assembly of the State of Colorado:

4 SECTION 1. Article 34 of title 24, Colorado Revised  
5 Statutes 1973, as amended, is amended BY THE ADDITION OF A NEW  
6 PART to read:

7 PART 10

8 OFFICE OF ENERGY CONSERVATION

9 24-34-1001. Short title. This part 10 shall be known  
10 and may be cited as the "Colorado Energy Conservation Act".

11 24-34-1002. Legislative declaration. (1) It is hereby

1 declared by the general assembly of the state of Colorado:

2 (a) That energy conservation and the use of renewable  
3 energy shall be a cornerstone of state energy policy;

4 (b) That the demand for and the availability and cost of  
5 energy are of critical concern to the state's economic  
6 development and the well-being of its citizens;

7 (c) That a focus is necessary for the coordination of  
8 state energy conservation policies among state agencies, local  
9 governments, other states, and the federal government;

10 (d) That a single agency shall be responsible for the  
11 informational, policy, planning, and management aspects of  
12 energy demand and energy conservation;

13 (e) That the encouragement of the most cost-effective  
14 and efficient use of energy is in the public interest;

15 (f) That the development of and transition to the use of  
16 environmentally sound renewable energy resources is in the  
17 public interest; and

18 (g) That protecting citizens of the state of Colorado  
19 from the effects of interruptions of energy supplies and  
20 dislocations arising from patterns of use is in the public  
21 interest.

22 24-34-1003. Definitions. As used in this part 10,  
23 unless the context otherwise requires:

24 (1) "Director" means the director of the office of  
25 energy conservation.

26 (2) "Office" means the office of energy conservation

1 established by this part 10.

2 24-34-1004. Office of energy conservation -  
3 establishment - termination. (1) There is hereby established  
4 as a division in the department of regulatory agencies the  
5 office of energy conservation, the head of which shall be the  
6 director of the office of energy conservation. The office of  
7 energy conservation and the director thereof shall exercise  
8 their powers and perform their duties and functions as if the  
9 same were transferred by a type 2 transfer to the department  
10 of regulatory agencies.

11 (2) The provisions of section 24-34-104, concerning the  
12 termination schedule for regulatory bodies of the state unless  
13 extended as provided in that section, are applicable to the  
14 office of energy conservation created by this section.

15 24-34-1005. Powers and duties of the office. (1) The  
16 office shall have the following powers and duties:

17 (a) To develop and present for legislative consideration  
18 comprehensive state and federal energy conservation and  
19 renewable energy programs;

20 (b) To develop, administer, coordinate, and monitor in  
21 this state energy conservation emergency and contingency plans  
22 of federal and state nature, as required;

23 (c) To monitor and evaluate existing and proposed  
24 actions, policies, and legislation of all levels of government  
25 in energy conservation matters relevant to the state;

26 (d) To assess trends and publish information concerning



1 energy conservation;

2 (e) To undertake informational programs aimed at  
3 encouraging the utilization of energy conservation and  
4 renewable resources;

5 (f) To coordinate state energy conservation policies and  
6 programs among agencies of state government;

7 (g) To undertake other programs and activities necessary  
8 to carry out its responsibilities under this part 10.

9 24-34-1006. Powers and duties of the director. (1) The  
10 director shall have the following powers and duties:

11 (a) To advise and assist the executive and legislative  
12 departments in matters of energy conservation policy analysis,  
13 coordination, and implementation;

14 (b) To supervise the day-to-day operations of the  
15 office.

16 24-34-1007. Agency cooperation. Every state agency  
17 shall cooperate with the office to the greatest extent  
18 possible within the constraints of statutory authority.

19 SECTION 2. 24-1-122 (2), Colorado Revised Statutes 1973,  
20 as amended, is amended BY THE ADDITION OF A NEW PARAGRAPH to  
21 read:

22 24-1-122. Department of regulatory agencies - creation.

23 (2) (1) The office of energy conservation, the head of which  
24 shall be director of the office of energy conservation. The  
25 office of energy conservation, and the director thereof  
26 created by part 10 of article 34 of this title, shall exercise

1 their powers and perform their duties and functions as if the  
2 same were transferred by a type 2 transfer to the department  
3 of regulatory agencies as a division thereof.

4 SECTION 3. 24-34-104, Colorado Revised Statutes 1973, as  
5 amended, is amended BY THE ADDITION OF A NEW SUBSECTION to  
6 read:

7 24-34-104. General assembly review of regulatory  
8 agencies for termination, continuation, or reestablishment.

9 (4.6) The following division in the department of regulatory  
10 agencies shall terminate on July 1, 1988: The office of  
11 energy conservation, created by part 10 of this article.

12 SECTION 4. Appropriation. In addition to any other  
13 appropriation, there is hereby appropriated, out of any moneys  
14 in the state treasury not otherwise appropriated, for the  
15 fiscal year beginning July 1, 1982, to the department of  
16 regulatory agencies for allocation to the office of energy  
17 conservation, the sum of \_\_\_\_\_ dollars (\$) and  
18 \_\_\_\_\_ FTE, or so much thereof as may be necessary, for the  
19 implementation of this act.

20 SECTION 5. Effective date. This act shall take effect  
21 July 1, 1982.

22 SECTION 6. Safety clause. The general assembly hereby  
23 finds, determines, and declares that this act is necessary  
24 for the immediate preservation of the public peace, health,  
25 and safety.

BILL 3

A BILL FOR AN ACT

1 CONCERNING THE COLORADO ENERGY RESEARCH INSTITUTE, AND  
2 RELATING TO THE DUTIES THEREOF.

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Bill Summary

(Note: This summary applies to this bill as introduced and does not necessarily reflect any amendments which may be subsequently adopted.)

Requires the Colorado energy research institute to provide data, background material, and analytical research for the executive and legislative branches of the state government and local governments, to administer energy-related programs for students and the public, and to make annual reports to the general assembly and to the governor.

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3 Be it enacted by the General Assembly of the State of Colorado:

4 SECTION 1. 23-41-114, Colorado Revised Statutes 1973, is  
5 RECREATED AND REENACTED, WITH AMENDMENTS, to read:

6 23-41-114. Colorado energy research institute - creation  
7 - repeal. (1) There is hereby created at the Colorado school  
8 of mines the Colorado energy research institute, which shall  
9 be referred to in this section and sections 23-41-115 and  
10 23-41-115.5 as and shall be generally known as "Colorado  
11 energy". It is the intent of this section that Colorado

1 energy serve as a mechanism for the development and  
2 coordination of energy and energy-related minerals research  
3 programs, including programs at single state or private  
4 educational or research institutions and multidisciplinary,  
5 interuniversity, government-university, and  
6 industry-university energy and energy-related minerals  
7 research programs and projects. It is the further intent of  
8 this section that Colorado energy provide the mechanism for  
9 enhancing the development and promotion of energy and  
10 energy-related minerals education programs in the state.

11 (2) The principal administrative officer of Colorado  
12 energy shall be the president of the Colorado school of mines,  
13 and budgetary and fiscal procedures and activities of Colorado  
14 energy shall be under the supervision of the Colorado school  
15 of mines. To meet fully the intent of this section, the  
16 principal administrative officer, together with the oversight  
17 committee formed pursuant to section 23-41-115, shall be  
18 responsible for developing the appropriate administrative  
19 structure and process. These are to be designed to insure  
20 that Colorado energy accomplishes its purposes and becomes a  
21 state instrumentality, facilitating development and  
22 coordination among all programs and projects concerned with  
23 energy and energy-related minerals research.

24 (3) It is the duty of Colorado energy to:

25 (a) Maintain liaison with the state to identify the  
26 important regional energy and energy-related minerals

1 problems, including their relationship to the use of the  
2 waters of the state;

3 (b) Solicit and determine, through inquiry of and  
4 consultation with the executive and legislative branches of  
5 the state government and with local governments, the needs of  
6 the said branches and governments for energy data and  
7 background information relating to the determination of state  
8 policy and actions in relation to energy shortages, planning,  
9 and long-range options and to collect, maintain, and provide  
10 such data and background material;

11 (c) Coordinate and promote the development of energy and  
12 energy-related minerals research programs and projects in  
13 single or multiple disciplines at state and private  
14 educational and research institutions;

15 (d) Administer a program of energy grants and  
16 internships within the higher education system, which program  
17 shall include the monitoring, selection, and coordinating of  
18 students and programs;

19 (e) Develop and promote energy and energy-related  
20 minerals education programs in the state;

21 (f) Administer programs of public education in energy  
22 development, utilization, and conservation, which shall  
23 include, but shall not be limited to, energy status reports,  
24 sponsorship of symposia, demonstration programs, and reports  
25 on research results;

26 (g) Report annually to the governor and to the general

1 assembly on the effectiveness of the programs administered.

2 (4) Colorado energy is authorized to receive federal or  
3 private funds for energy or energy-related minerals research  
4 projects for furthering the purposes of Colorado energy.  
5 Funds received shall be appropriated by the general assembly  
6 with the exception of those funds received requiring no state  
7 support directly or indirectly, which funds shall be reported  
8 to the joint budget committee upon receipt.

9 (5) This section is repealed, effective July 1, 1988.

10 SECTION 2. 23-41-115, Colorado Revised Statutes 1973, is  
11 RECREATED AND REENACTED, WITH AMENDMENTS, to read:

12 23-41-115. Oversight committee - repeal. (1) There is  
13 hereby created an oversight committee consisting of eight  
14 members. The primary function of the oversight committee is  
15 to establish general policy guidelines for implementing the  
16 intent of this section and to regularly evaluate the  
17 development of Colorado energy and its programs in terms of  
18 overall objectives. The membership of the oversight committee  
19 shall include the president of the senate or his designee, the  
20 speaker of the house of representatives or his designee, the  
21 chairman of the agriculture, natural resources, and energy  
22 committee in the senate, the chairman of the transportation  
23 and energy committee in the house, one member of the minority  
24 party in the senate chosen by the president of the senate, one  
25 member of the minority party in the house of representatives  
26 chosen by the speaker of the house of representatives, and two

1 members appointed by the governor.

2 (2) The term of each legislative member of the oversight  
3 committee shall coincide with his term of office. The members  
4 appointed by the governor shall serve at the pleasure of the  
5 governor.

6 (3) The oversight committee shall advise and consult  
7 with Colorado energy and make recommendations to assist in  
8 carrying out the purposes of this section and section  
9 23-41-114.

10 (4) Members of the oversight committee shall serve  
11 without compensation but are entitled to reimbursement for  
12 actual and necessary expenses incurred in the performance of  
13 their duties.

14 (5) This section is repealed, effective July 1, 1988.

15 SECTION 3. 23-41-115.5, Colorado Revised Statutes 1973,  
16 is RECREATED AND REENACTED, WITH AMENDMENTS, to read:

17 23-41-115.5. Legislative declaration - repeal. (1) The  
18 general assembly hereby finds and declares that the  
19 accomplishment of the purposes of Colorado energy requires the  
20 commitment of funds of a period longer than one year and  
21 hereby recommends that appropriations which are commensurate  
22 with the accomplishment of the purposes of Colorado energy be  
23 made for the six-year period commencing July 1, 1982.

24 (2) This section is repealed, effective July 1, 1988.

25 SECTION 4. Effective date. This act shall take effect  
26 July 1, 1982.

1           SECTION 5. Safety clause. The general assembly hereby  
2 finds, determines, and declares that this act is necessary  
3 for the immediate preservation of the public peace, health,  
4 and safety.



COLORADO  
ENERGY COORDINATING COUNCIL

APPENDICES

A

OVERVIEW OF ENERGY  
CONSERVATION IN COLORADO



**Office of Energy Conservation**  
State of Colorado/Office of the Governor  
1600 Downing, Denver, CO 80218, 839 2507, 839 2186

# Energy News

## OVERVIEW OF ENERGY CONSUMPTION IN COLORADO

Prior to 1963, Colorado produced more energy than it consumed. By the early 1970's, nearly 70 percent more energy was consumed than was produced, although not all the energy produced remained in the state for consumption. Today, the gap has been reduced to about 12 percent due to the dramatic increases in state coal production.

The primary fuels consumed are: petroleum (35 percent), coal (32 percent), natural gas (31 percent), and hydro/nuclear power (two percent). By sector, transportation is the largest consuming sector (26 percent), followed by power generation (24 percent), residential (19 percent), industrial (14 percent), commercial (13 percent), agriculture (three percent) and mining (one percent).

Over the next decade, energy consumption is expected to increase 27 percent. The major growth is expected to occur in the residential and commercial sectors. Overall energy prices are anticipated to increase a minimum of 20 percent per year. Although no natural gas supply problems are anticipated in the next ten years, many utilities in the state are anticipating electric supply problems in the mid-1980's.

Availability of energy will be subject to marketing policies, federal government policies on decontrol of prices and allocations, federal subsidies on new technologies, and state and federal incentives for alternate fuel production and conservation investments. The consumer's ability to cope with higher prices will be dependent on capital availability, tax credits and subsidies and technical information.

The following pages describe programs conducted by the Colorado Office of Energy Conservation in an effort to assist Colorado in coping with rising energy prices and the prospect of reduced energy supplies.



## RESIDENTIAL

The residential sector consumes 19 percent of all the energy consumed in the state. In recent years, residential electricity use per customer has stabilized and natural gas use has actually dropped more than ten percent. In response to rising prices, consumers have adopted many low-cost/no-cost conservation measures. Over the next decade, total residential energy consumption is expected to increase 36 percent. Even with the conservation measures adopted to date, utility bills will continue to double every three years and larger portions of household incomes will be devoted to paying these bills. Local governments and design professionals must be educated to provide energy efficient dwellings. Regionalized energy supply problems, especially those rural areas of Colorado which depend on L-P gas and fuel oil, will require technical assistance on the use of alternative energies.

### 1. Energy Extension Service (EES)

The Colorado Energy Extension Service (EES) is the prime informational and educational outreach arm of the Office of Energy Conservation (OEC). The primary mission of the EES is to provide personalized information services to small energy users; homeowners, small businessmen, agriculture and local government. The EES Centers offer such services as building energy audits, training, workshops, seminars, do-it-yourself home energy audits, and a wide range of information on energy conservation and solar and renewable energy resources. During 1980, Colorado's ten EES Centers contacted more than 250,000 people.

### 2. Tax Credits for Energy Conservation and Renewable Resources

OEC was chiefly responsible for drafting legislation extending some of the highest tax credits in the nation for energy conservation and renewable energy investments to Colorado taxpayers. OEC responds daily to a high demand for information on these tax credits and has published three pieces of literature on them which are widely distributed throughout the state. A slide show now in preparation on the subject already is being much requested by a number of groups in the state. In addition, OEC continues to work with the legislature to

increase these tax credits and address the other institutional, legal, social and economic barriers to energy conservation and renewable energy in the state.

3. Residential Conservation Service (RCS)

The Residential Conservation Service (RCS) requires major utilities in Colorado to provide certain energy conservation and renewable energy resource services to their residential customers. Upon request, utilities in Colorado are offering four basic services under the RCS Program: energy audits, estimated savings in energy costs for conservation measures; lists of approved contractors, suppliers and lenders, and assistance in arranging to purchase, install or finance energy conservation or renewable energy measures requested by the customer.

4. Residential Thermal Building Standards

The Office of Energy Conservation has and continues to advocate for the strongest possible mandatory building standards in Colorado. As a result of OEC's efforts, the Colorado General Assembly enacted legislation in 1977 setting minimum energy conservation standards for the construction of new or substantially renovated residential buildings. Most building code jurisdictions in the state adopted these minimum state standards. OEC works with the Colorado Division of Housing in training hundreds of building officials in how to enforce and use the state's building standards effectively.

5. Low Income Energy Assistance Program (LEAP)

The Low Income Energy Assistance Program (LEAP) helps eligible low-income individuals or families in Colorado pay their high home heating costs during the winter months. This program is operated by the Department of Social Services in conjunction with OEC. During 1981, more than 82,750 low-income households in Colorado received \$21.8 million in assistance in paying their utility bills, and OEC contacted more than 4,000 low-income families with information on how to save energy.

6. Weatherization Assistance Program (WAP)

Under this program, OEC develops and helps distribute information materials on low-cost conservation techniques and renewable energy resources for the recipients of weatherization grants. Weatherization grants for weatherstripping, caulking, insulation storm windows and doors for low-income persons who couldn't otherwise afford these measures are administered by the Department of Local Affairs. During 1981, OEC contacted 4,000 low-income households under the program.

7. Renewable Energy Program

The Renewable Energy Program of OEC is directed primarily at increasing the use of renewable energy resources: solar, wind,

bio-fuels, small scale hydro-electric, geothermal, gasohol and wood. This division focuses largely on eliminating institutional barriers to the use of renewables, and providing information and educational resources.

8. Western SUN

Western SUN, the Western Solar Utilization Network, is a regional organization of western states based in Portland, Oregon which carries out a program designed to increase the use of solar energy and other renewable energy resources in the affiliated states, one of which is Colorado. Western SUN in Colorado has spearheaded a number of projects, including publication of books and workshops for local government energy officials, a solar handbook for realtors and a solar handbook for builders, and workshops in selling and building passive solar homes for both these groups. Western SUN was instrumental in the formation of Colorado Conference of Local Energy Officials (CCLEO).

9. Low Cost/No Cost

This program was operated during the month of November, 1980. Under it, one million Colorado households received a booklet, containing 25 low cost/no cost tips to save energy, and a water flow restrictor for their shower to cut hot water heating bills.



**Office of Energy Conservation**  
State of Colorado/Office of the Governor  
1600 Downing, Denver, CO 80218, 839-2507, 839 2186

# Energy News

## COMMERCIAL

Nearly 13 percent of the energy consumed in Colorado goes to the commercial sector. In the next ten years, total consumption of the sector is expected to increase nearly 30 percent. Doublings in energy bills in slightly more than two years has reduced consumption per customer in the 5-10 percent range. This situation is expected to continue as natural gas prices are expected to rise 22 percent per year in the near future and electricity prices will increase at 12 percent annually. Financial incentives must be established to provide capital for investments, funds for conservation and alternate energy systems, technical information sharing among similar businesses to transfer technologies and reduce costs, and training for design professionals or energy efficient buildings.

### 1. Commercial Energy Conservation Program

This program, staffed with technical experts, is designed to help small businesses without the in-house technical staff to improve and maintain energy efficiency levels in their building plants. This program provides information and technical assistance, tax incentive information, easy energy audits, building standards information, speakers, training, operations and maintenance tips, and renewable energy resource information.

### 2. Non-residential Thermal Building Standards Program

The Office of Energy Conservation has and continues to advocate for the strongest possible mandatory building standards in Colorado. As a result of OEC's efforts, the Colorado General Assembly enacted legislation in 1977 setting minimum energy conservation standards for the construction of new or substantially renovated non-residential buildings. These standards were adopted by local ordinances across the state. OEC assists in the training of hundreds of building officials in how to enforce and use these building standards effectively.



## INSTITUTIONAL PROGRAMS

It is anticipated that energy costs will increase a minimum of 20 percent for most public and private institutions in the state in the next several years. In light of current spending limitations and revenue constraints, higher energy bills will consume larger portions of operating budgets and result in reduced services. Although low and no-cost measures have been taken in most facilities, funds must be made available for technical audits and energy efficient equipment. State government buildings are a prime example of the energy conservation potential of institutional buildings. From 1973 to 1978, state buildings reduced consumption by 23 percent on an energy per square foot basis. In 1979, the state's utility bill increased 74 percent. By 1980, the state's utility bill was over \$17 million. The reduction in usage was due to low or no-cost measures such as reduced lighting levels and lowered thermostat settings.

### 1. Institutional Buildings Grants Program (IBGP)

This program provides 50-50 matching grants for institutions -- schools, hospitals, local governments, public care institutions, and Indian nations -- to help reduce the energy consumed in their buildings. Since the program began, OEC has trained 530 institutional representatives and 150 architects or engineers as auditors. Institutions which have participated in the program are saving more than \$6 million a year in energy costs. During the first 18 months of the program, OEC awarded more than \$2.85 million to institutions throughout the state. In the current funding cycle, 57 Colorado institutions have applied for \$4 million in assistance. Only \$1.5 million is available.

### 2. State Buildings Retrofit Program

The program identifies cost-effective investments in state-owned buildings and selectively funds the retrofitting of such buildings for energy conservation. During the first two years of the program, the Colorado General Assembly appropriated \$175,000 for energy audits of 41 buildings throughout the state. In addition, \$2,650,000 was appropriated for energy retrofits. These funds were matched by over \$1.2 million in federal matching funds under the Institutional Buildings Grants Program to fund the retrofitting of 46 buildings to date. Annual energy savings from such investments are expected to exceed \$800,000 at today's energy costs.

The 1981 Session of the Colorado General Assembly appropriated significantly increased funds to continue the program. \$300,000 was appropriated for energy audits and \$2.7 million for retrofits. With such funds it is expected that 38 additional state buildings can be audited and 30+ buildings retrofitted for energy conservation.



### 3. Energy Conservation in State Purchasing

This program identifies on a continuing basis energy conservation opportunities available to all state government purchasing agents and ensures that those opportunities identified become fully integrated into the state's purchasing practices. As of the end of 1980, state and local governments were saving energy at the annual rate of \$2.7 million per year as a result of changes in lighting, electricity, gasoline, and water and sewage use under this program.



## TRANSPORTATION PROGRAMS

The transportation sector is the largest-consuming sector accounting for 26 percent of all energy used in the state. Automobiles account for over one-half of the fuel used. Gasoline usage has dropped substantially in recent years. Colorado gasoline consumption in 1980 was 11 percent below the 1978 level. This is a substantial decline in a period when population increased nearly 8 percent. This change is attributable to modified maintenance habits, higher gasoline prices, change in vehicle fleet from large to mid-size cars, and general economic conditions. Although it is too early to estimate price trends until after the current glut, gasoline prices could increase 15 percent annually. Public information programs including driver's education programs, should be focused on ridesharing and proper vehicle maintenance.

### 1. Rideshare Programs

Councils of Government have instituted rideshare programs around the state including Denver Regional Council of Government, Pikes Peak Area Council of Governments, and the Larimer-Weld regional Council of Governments. Many major employers have instituted car and vanpooling programs including Conoco, Johns-Manville, and Mountain Bell. Collectively, there are over 174 vanpools in the state and over 18 employers in Denver provide some form of ridesharing programs.

### 2. Public Information

OEC/EES provides information on proper vehicle maintenance through brochures distributed at events, promoting alternative transportation programs, and sponsoring an annual vehicle efficiency campaign during the peak driving season.

### 3. Department of Highways

The Department of Highways will be initiating a state-wide employer training program. It will consist of on-site training materials and seminars for businesses to increase use of carpools, vanpools, and mass transit. Employee incentives are also discussed.



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State of Colorado/Office of the Governor  
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# Energy News

## EMERGENCY PLANNING

During the 1979 gasoline shortage, Colorado was one of only 15 states which did not have to institute some form of gasoline sales allocations or restrictions because the state managed the supply problems well. Although the gasoline market is currently experiencing a glut of motor fuel, experts predict this glut will be short-lived and that supply will again become a problem as oil companies use up their inventories and the Middle-Eastern political situation continues to be unstable.

### 1. Gasoline Contingency Planning

The Office of Energy Conservation in conjunction with the Governor's Office and the State legislature, has a plan of action ready to put into place should a gasoline shortage occur in the state. It is imperative that the state have such a plan to assist the public in coping with such a crisis.

COLORADO JOINT REVIEW PROCESS  
PROJECT STATUS SUMMARIES  
JULY 20, 1981

Project Name: MOUNT EMMONS MOLYBDENUM MINE AND MILL

Sponsor: AMAX, Inc.

Entered JRP: June 1978

Project Description: 20,000 tons per day molybdenum mine with approximately 30 year life under Mount Emmons in Gunnison County. Ore will be transported to the molybdenum mill at Alkali Basin 12 miles to the south via electric railroad. Tailings to be deposited in Alkali Basin. Concentrate to be shipped by truck to railhead in Salida. Initial mine construction is expected to commence in 1983.

JRP Team Members: Gunnison County, Colorado Department of Natural Resources, U.S. Forest Service, and AMAX, Inc.

Current Status: The project decision schedule has been prepared and is being implemented. The Draft Environmental Impact Statement being prepared by the Forest Service is expected to be released late this summer. Regulatory reviews are expected to continue well into 1982.

Project Name: RIO BLANCO OIL SHALE SURFACE RETORT DEMONSTRATION PROJECT

Sponsor: Rio Blanco Oil Shale Company (a general partnership between Standard Oil of Indiana and Gulf Oil).

Entered JRP: July 1980

Project Description: Construction of a single Lurgi-Ruhrgas surface retort capable of producing approximately 2,000 barrels of shale oil per day. The retort would be located on land acquired from the Division of Wildlife adjacent to Federal Oil Shale Prototype Lease Tract C-a which is operated by Rio Blanco. Shale for the demonstration would be provided by an open pit mine to be located on Tract C-a. Project construction was originally scheduled for May 1981.

JRP Team Members: Rio Blanco County, Colorado Department of Natural Resources, USGS Area Oil Shale Office, Rio Blanco Oil Shale.

Current Status: Rio Blanco Oil Shale announced in April that its preliminary engineering estimates showed significantly higher project costs than originally anticipated. Thus the company is currently reevaluating the project. Most of the necessary permits have been obtained except for County and Mined Land Reclamation Board approvals. Rio Blanco recently withdrew its County Special Use Permit application until the project has been reevaluated by the company. Construction is not expected this year.

Project Name: MULTI MINERAL NAHCOLITE MINE

Sponsor: Multi Mineral Corporation (a wholly owned subsidiary of Charter Oil Company)

Entered JRP: July 1980

Project Description: Construction of the nation's first nahcolite mine on federal sodium lease in Piceance Basin, Rio Blanco County. Production of 1 million tons per year is planned. Project to be shipped to Rifle railhead via trucks. Construction may begin in 1982.

JRP Team Members: Rio Blanco County, Colorado Department of Natural Resources, USGS Conservation Division, and Multi Mineral Corporation.

Current Status: USGS has prepared an environmental assessment of the project and determined that an environmental impact statement will not be needed. They have subsequently approved the mining plan. A project decision schedule for the remaining regulatory reviews will be prepared in the near future.

Project Name: W. R. GRACE COAL-TO-METHANOL PLANT

Sponsor: W. R. Grace & Co.

Entered JRP: December 1980

Project Description: Construction of a coal-to-methanol plant capable of producing 500 tons of methanol per day on private land in Moffat County. As the automotive and other markets for methanol expands, additional modules will be built to increase methanol production to 5,000 tons per day.

JRP Team Members: Moffat County, Colorado Department of Natural Resources, U.S. Environmental Protection Agency, and W. R. Grace & Co.

Current Status: W. R. Grace is currently in the midst of securing a water source and collecting and preparing data for the required permit applications. Preparation of the project decision schedule is expected this fall.

Project Name: PACIFIC PROPERTY OIL SHALE PROJECT

Sponsor: Superior Oil Company (joint venture with Standard Oil of Ohio and Cleveland Cliffs Iron Co.).

Entered JRP: March 1981

Project Description: 50,000 barrel per day oil shale surface retorting facility on private land in Garfield County. An initial retort module with a capacity of 15,000 barrels per day will be supplied by a 24,000 ton per day room and pillar mine.

JRP Team Members: The Team has not been formally established. Members are expected to include; Garfield County, Colorado Department of Natural Resources, U.S. Environmental Protection Agency, and Superior Oil Company.

Current Status: Because of the Reagan Administration policies and budgets for oil shale development, Superior felt compelled to reconfirm the commitment of each of its partners in the project. When this reconfirmation process is completed the review process will proceed.

Project Name: CLEAR CREEK SHALE OIL PROJECT

Sponsor: Chevron Shale Oil Company

Entered JRP: June 1981

Project Description: 100,000 barrels per day commercial shale oil project comprised of an underground and surface oil shale mine, 10-12 retorts, a 100,000 BPD upgrading facility, a water storage reservoir, various transmission line corridors, and a syncrude pipeline. The project (with the exception of the reservoir) will be located on Chevron's Clear Creek property in Garfield County approximately 20 miles north of DeBeque. Site preparation is scheduled to begin in 1983.

JRP Team Members: The Team has not been formally established. Members are expected to include; Garfield County, Colorado Department of Natural Resources, U.S. Bureau of Land Management, and Chevron Shale Oil Co.

Current Status: The Joint Agreement is being prepared and Chevron is preparing presentations on the project for an interagency meeting to be held late in August.

OUTLINE OF SOCIAL-ECONOMIC  
MITIGATION AGREEMENT FOR  
DESERADO MINE, BONANZA STATION  
AND ASSOCIATED FACILITIES

I. Principles and Commitments

The following lists the principles to which Western Fuels and the local governmental entities committed. If applicable, shown under the relevant principle is the estimated dollar amount for impact mitigation from Western Fuels:

A. Rio Blanco County local governmental entities affected by the agreement are committed to a policy of impact mitigation for energy development; policy applies to other energy development projects.

B. Western Fuels and local governments agree:

1) No Tax Impact on Existing Residents. Taxation and user fees are not to be increased for existing residents.

2) Front-End Capital Financing. Front-end financing for capital construction, up-grading, or expansion to accomodate new population. All figures based on 1500 population floor multiplied by State of Colorado per capita monetary standards for capital improvements.<sup>1/</sup> Only total the amount for each entity is shown:

Rio Blanco County (Administration, human services, solid waste, Police, shop, roads)	1,500,000
Rangely (Administration, human services, Police, shop, drainage)	1,515,000
Recreation District (Building Expansion)	820,000
Hospital District (Equipment)	876,000

<sup>1/</sup> "Fourth Annual Report to the Colorado State Legislature", Division of Impact Assistance, Department of Local Affairs, January, 1981.

Fire District (Equipment)	120,000
Library District (Building Expansion)	<u>105,000</u>
Total	\$4,936,000

The above are payable in three installments over a two year period, and, by quarterly monitoring, can be adjusted upward if project-related population exceeds 1500 people; inflation is taken into account for per capita construction costs.

In addition, an estimated front-end payment of \$1.6 million is allocated for a mine access road and bridge.

- 3) Deferred Capital Financing. The agreement provides for deferred capital improvements for entities now having excess capacity, so existing margin of capital capacity is maintained for future growth.

All figures shown are based on 1500 population multiplied by State of Colorado per capita costs for capital improvements:

Rangely sewer and water	
RE-4 School District Facilities	\$3,375,000
Average Western Colorado per student cost for elementary and high school construction multiplied by 375 (25% of 1500)	

The above are payable in cash or guaranteed revenue bonds at such time as the Town or School District deems it necessary; adjusted upward through monitoring if project-related population exceeds 1500 people; inflation taken into account for per capita construction costs.

- 4) Operation and Maintenance. Starting with the 1982 budget, Western Fuels Funds impact on local government operation budgets.
- 5) Credits and Offsets. Western Fuels is given credit against its financial obligation for taxes paid and grants received by local governments for Western Fuels project-related social-economic impact mitigation.
- 6) Housing. The housing mitigation agreement is summarized as follows:



- a) 100 percent affordable, diversified, and quality housing for the 1500 estimated project-related employees and the project-induced or secondary employees.
- b) Financial or other housing assistance for project-related employees and government induced employees.
- c) Housing mix by January 1986: 60% single-family; 25% multi-family; 15% mobile homes. Mobile home maximum percentage reduced to 30% by January 1983 for construction project-related population. Estimated total number of units needed: 500 to 700. Deviations from percentage mix require town and county approval.
- d) \$2.4 million to Town of Rangely for roads, gutters, drainage, etc., for project-related population housing needs if Western Fuels does not provide same.
- e) Rangely and Rio Blanco County to cooperate in securing reasonably priced sites for housing.
- f) Senior citizen adverse housing impact subject to monitoring and future mitigation if necessary.
- 7) Rangely as Focal Point. The parties agreed that Rangely should be the focal point for project-related population. Dinosaur in Moffat County is also expected to experience impact, but the agreement does not cover same.
- 8) Monitoring. A social-economic impact monitoring program is now being developed, to be funded in the main by Western Fuels, to review demographic changes associated with the project and to gather and analyze other data related to social-economic impact, including the development of a housing program in Rangely.

## II. Administration.

- A. Special Use Permit. The agreement was incorporated by reference as part of the Special Use Permit granted to Western Fuels for operation of the underground coal mine pursuant to Rio Blanco County Ordinance (1977) 305.2 and Ordinance (1977) 1000. The Special Use Permit is authorized by Article 28 of Title 30, C.R.S. 1973.
- B. County Administers. Rio Blanco County is to agree on a social-economic monitoring program by October, 1981. The County Commissioners have overall administrative responsibility for the agreement, including the staffing of

the Monitoring Advisory Committee, composed of one representative from Western Fuels and each local governmental entity. The Board of County Commissioners acts on recommendations of the Advisory Committee.

III. Enforcement, Dispute Resolutions, Duration, etc.

- A. Court Action. Any governmental entity, party to the agreement, may seek judicial remedy in the event of default by Western Fuels.
- B. Dispute Resolution. The county and Western Fuels developed a process to resolve disputes and disagreements involving issues which may arise in implementing the agreement.
- C. Assignment. Western Fuels may not assign the agreement to another entity without the consent of any affected governmental entity.
- D. Performance. Provisions for security of performance is made part of the agreement. Performance bonds, irrevocable letters of credit, etc., secure front-end capital improvement costs outlined above under "Principles and Commitments".
- E. Duration of Agreement. The agreement extends for the life of the mine or approximately 35 years.
- F. Reconsideration. Western Fuels may request Rio Blanco County to reconsider and amend the agreement, if the County is not applying fairly and equitably its policy of requiring social-economic impact mitigation, by other energy development projects. Any financial relief granted is prospective, not retrospective, and any other governmental entity affected must expressly agree to any relief sought by Western Fuels.
- G. Termination. Western Fuels may request modification or termination of the agreement five years after Unit 2 of the Power Plant (1993) has been in operation, on the grounds that the agreement's provisions are no longer necessary or appropriate to effect the mitigation objectives in the agreement.