# *REPORT TO THE CONGRESS*

## *BY THE COMPTROLLER GENERAL OF THE UNITED STATES*

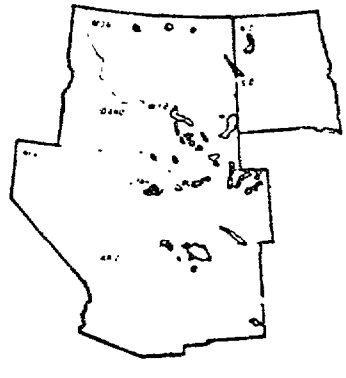


# Rocky Mountain Energy Resource Development: Status, Potential, And Socioeconomic Issues

This report should aid in making national energy decisions and decisions on the need for additional Federal assistance for Rocky Mountain communities that will be affected by energy resource development.

Such development would result in new towns and would cause some existing communities to double, triple, and quadruple their populations in a few years. This, in turn, would cause changes in the social patterns and life styles of some small communities and strain or deplete their economic resources. The need for housing and basic public facilities and services often arises before adequate local funding is available to provide them.

The need for additional Federal assistance *at this time* has not been demonstrated. If, however, the Congress does wish to further help Rocky Mountain communities, GAO recommends that any such assistance be contingent on the States doing three things: taking actions to meet a minimum level of assistance to communities affected by energy development; developing plans to systematically deal with the impacts, and clearly demonstrating in their plans that the assistance would actually be used to help energy-affected communities.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-178726

To the President of the Senate and the
Speaker of the House of Representatives

This report highlights the status of and potential for energy resource development in the Rocky Mountain area; identifies socioeconomic problems that may result by 1985 from energy resource development in the area; and discusses (1) Federal, State, and industry actions being taken to resolve the problems, (2) the level and type of effort that might be required, and (3) the roles the States, the Federal Government, and industry should play in mitigating these problems.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget; the Chairman, Under Secretaries Group for Regional Operations; the Secretary of the Interior; the Administrator, Federal Energy Administration; the Chairman, Council on Environmental Quality; and the Staff Director, Western Governors' Regional Energy Policy Office.

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

# ROCKY MOUNTAIN ENERGY RESOURCE DEVELOPMENT: STATUS, POTENTIAL, AND SOCIOECONOMIC ISSUES

## D I G E S T


What should be the roles of the States, the Federal Government, and industry in providing assistance to Rocky Mountain communities affected by development of the region's vast sources of largely untapped energy?

Ninety-five percent of the Nation's uranium, 90 percent of its oil shale, and 41 percent of its coal lie in the relatively sparsely populated Rocky Mountain States--Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, the Dakotas, Utah, and Wyoming.

Rapid and extensive development of these resources may have profound socioeconomic and environmental effects on the area.

Rocky Mountain coal and uranium have the greatest potential for expanded development. Also, large deposits of gas may be locked in tight, low permeability formations in deep Rocky Mountain basins. Expanded large-scale development of the area's coal, uranium, and gas resources, however, depends on environmental, social, economic, and technological factors. Although oil will continue to be developed in the area, large new finds are not expected. Geothermal resources, oil shale, and tar sands also have some potential for development. (See pp. 9 to 25.)

As these resources are developed new towns would be built and some existing communities would double, triple, and quadruple their populations in a few years. This, in turn, would cause changes in social patterns and strain or deplete economic resources of some small communities.

The need for housing and basic public facilities and services, such as sewers, roads, utility lines, police, fire departments, parks, playgrounds, health care, and schools,

often arises before adequate local funding is available. Most of these problems could be solved if communities knew the timing of development so that facilities and services could be planned and designed, and had funds available to begin providing them before the additional people arrive. (See p. 31.)

In 1975 the Federation of Rocky Mountain States estimated the population of the Rocky Mountain States to grow by 600,000 by 1985 due solely to the mining of coal, oil shale, and uranium. This estimate does not include growth associated with conversion, transportation, and utility industries nor does it reflect recent events such as the

--suspensions of oil shale leases,

--withdrawal of the sponsors for a major powerplant,

--refusal of the 94th Congress to pass various legislation authorizing large Federal subsidies for synthetic fuel and nuclear development, and

--continuing uncertainties over the economics and social desirability of synthetic fuel and nuclear power development.

These events indicate a slower pace of development than the recent studies anticipated. (See p. 39.)

Using this estimated population increase and the low and high estimates of per person costs of $3,121 and $4,892, GAO found that between $1.9 billion and $2.9 billion in 1975 dollars in public facilities and services might be required by 1985. (See p. 53.)

Several States have passed legislation intended to provide significant help to communities affected by the problems of Rocky Mountain energy growth. In 1975, for example, Wyoming passed a comprehensive legislative package, establishing two funds which eventually could total $220 million,

to be used to mitigate socioeconomic impacts. (See pp. 40 and 41.)

Montana has established a coal severance tax which could generate as much as $1.1 billion between 1975 and 1985 from two large coal producing counties and will allocate about 25 percent of the taxes to a local impact fund and the coal generating area. (See pp. 42 and 43.)

In a few cases industry has provided financial and other assistance. (See pp. 50 and 51.)

Many fragmented Federal programs have provided and will continue to provide funds to energy-affected communities. In fiscal year 1975, the Federal Government contributed $39.2 million in grants and loans to directly aid 70 energy-affected communities in Colorado, the Dakotas, Montana, Utah, and Wyoming--the 6 States in which most Rocky Mountain energy development is likely.

These States also received $183.7 million in Federal mineral lease royalties and other indirect aid. At least $20 million of the $183.7 million and an indeterminable amount of the balance went to affected counties. (See pp. 44 to 47.)

These Federal programs are not specifically designed to help small communities cope with rapid population growth and are administered by a number of agencies with little coordination. Federal agencies are attempting through the Mountain Plains Federal Regional Council to coordinate Federal efforts to aid energy-affected communities. The Council, one of a number of Federal Regional Councils established by Executive order to assist State and local governments by coordinating Federal programs and operations, is composed of the principal regional officials of eight Federal agencies. It is responsible to the Under Secretaries Group for Regional Operations composed of Under Secretaries or similar officials from member agencies of the Council and other agencies and chaired by the Deputy Director, Office of Management and Budget. However, there is still no Federal office in the Rocky Mountain area where State and local

officials can obtain advice on the availability of all Federal assistance programs and assistance in applying for such aid. (See pp. 49 and 50.)

In August 1976 the Federal Coal Leasing Amendments Act of 1975 (Public Law 94-377) increased the royalties returned to States from new mineral leases on Federal lands from 37.5 percent to 50 percent. The 12.5 percent increase consisted of royalties that had previously been paid into a Federal reclamation fund, the moneys from which could be used in all Western States for irrigation projects. In addition, the act increased the royalties on surface-mined coal from 5 cents per ton to not less than 12.5 percent of the selling price. In fiscal year 1976 mineral royalties paid directly to the Rocky Mountain States were about $107 million. As a result of this act and overall increases in mineral revenues, the Department of the Interior estimates royalties paid directly to the Rocky Mountain States will increase to about $179 million in fiscal year 1979. Since a considerable amount of this increase involves moneys that would have gone into a reclamation fund for projects in the Western States, the major effect of the act was to increase moneys from royalties which will be directly available to the States. These moneys could be used to mitigate the impacts of energy resource development.

The Federal Land Policy and Management Act of 1976 (Public Law 579), enacted in October 1976, enables the royalties to be used as the legislatures of the States direct, such as for planning, construction, and maintenance of public facilities, and provision of public services. The act also provided for loans to States and political subdivisions for the same purposes. Loans can be made up to the anticipated mineral royalties to be received by the recipients for any prospective 10-year period, which in the case of the Rocky Mountain States will likely be between $1.5 billion and $2 billion for the next 10 years. (See p. 48.)

Public Law 94-565, also enacted in October 1976, provided for annual payments to be made directly to local governments based on the amount of Federal lands within their

jurisdiction. Interior estimated these annual payments to Rocky Mountain local governments at $69 million, or about $621 million from 1977 through 1985. (See p. 49.)

CONCLUSIONS

State and local governments should be primarily responsible for providing the necessary facilities and services, but the Federal Government and private industry should provide some assistance.

The States have various means available for raising and distributing money to needy communities without directly taxing their populations. These include levying severance taxes on extracted resources; creating a bonding authority to issue special revenue bonds; using discretionary Federal funds under existing programs and taking advantage of the increased moneys available in royalty payments and loans under the Federal Land Policy and Management Act of 1976, and in annual payments under Public Law 94-565. (See pp. 57 and 58.)

Rocky Mountain State and local governments should be primarily responsible for providing facilities and services prior to or concurrent with population increases for the following reasons.

--They receive economic benefit from energy development.

--Wyoming and Montana have shown that States can provide a far greater amount of assistance than at present without unduly burdening their taxpayers. In addition, considerable Federal funds in royalties, annual payments, loans, and grants are already available to the States for this purpose.

--Based on the traditional separation of powers and responsibilities, it is mainly a State responsibility to fund public facilities and services. The States have traditionally assumed this responsibility. This is not to say, however, that the Federal Government should not continue to

provide some assistance and look for ways to make its existing programs more useful to the State and local governments.

--They can encourage or require greater industry participation through such actions as legislation permitting prepayment of corporate, sales, and use taxes, and by requiring industry performance bonds which would be forfeited if development would not occur due solely or principally to an industry decision. (See p. 54.)

It is not industry's responsibility to provide the facilities and services needed because of energy resource development. But industry does have a strong and continuing responsibility to communicate its plans to State and local governments, as soon as possible, and to establish and maintain a continuing liaison with these governments. Industry is also responsible for meeting other reasonable requirements imposed by States and local authorities. These could include posting performance bonds and industry guarantees of local debt incurred to build facilities needed because of energy resource development. (See p. 58.)

The Federal Government should continue to provide some assistance. Recently, as shown above, it has greatly increased its assistance and will likely provide in excess of $2 billion in royalties, annual payments, grants, and loans to Rocky Mountain States and communities between now and 1985. In addition, the Federal Land Policy and Management Act of 1976 provides for loans to States and communities up to their anticipated mineral royalties for any prospective 10-year period. The need for additional Federal assistance at this time has not been demonstrated. (See pp. 58 and 59.)

Increasing funding of present Federal programs to assist State governments may not help energy-affected communities unless States use discretion in distributing the funds to them. No effective mechanism exists to guarantee that the funds given to States will go to communities where impacts occur. There is no evidence that the Federal Government should interfere

in the relations between State and local governments. However, GAO believes there should be some assurances that impacted communities will receive funds available to mitigate the socioeconomic impacts of energy resource development.

RECOMMENDATIONS

The Under Secretaries Group for Regional Operations should:

--Take whatever action may be necessary to open and staff an office where State and local officials can obtain advice on the availability of Federal assistance programs and, if necessary, assistance in applying for such aid. This could be accomplished under the auspices of the Mountain Plains Regional Council provided that funds are appropriated for such an office or prior congressional approval is given for the use of funds appropriated to agencies that are members of the Council.

--Monitor and periodically evaluate the work of the office and the need for additional Federal assistance to Rocky Mountain State and local communities affected by energy development.

--Direct that any such office established by the Under Secretaries Group prepare an annual report to the President, in close coordination with the Federal Energy Administration, evaluating the need for additional Federal assistance. In the event that appropriations or congressional approval are not granted for such an office, the Under Secretaries Group should request the Federal Energy Administration, in cooperation with other responsible agencies, to prepare this type of report. (See pp. 59 and 60.)

RECOMMENDATIONS TO THE CONGRESS

This report is intended to provide the Congress with information on the status, potential, and socioeconomic impacts of Rocky Mountain energy resource development. The report should aid in making national energy decisions and decisions on the need for additional Federal assistance for Rocky Mountain communities that will be affected by such development.

We believe that the need for additional Federal assistance at this time has not been demonstrated. If, however, the Congress does wish to further help Rocky Mountain communities, we recommend that any such assistance be contingent on the States taking actions to meet a minimum level of assistance to communities affected by energy development and on the States developing plans to systematically deal with the impacts. The States should be required to clearly demonstrate in these plans that the assistance would actually be used to help energy-affected communities. (See p. 60.)

AGENCY COMMENTS

The views of the Office of Management and Budget, the Department of the Interior, the Federal Energy Administration, the Western Governors' Regional Energy Policy Office, and the Council on Environmental Quality vary greatly on the nature of the problems discussed in this report and what needs to be done.

In essence:

--The Office of Management and Budget and the Department of the Interior generally agreed with our conclusions, and the Western Governors' Regional Energy Policy Office disagreed with them.

--The Federal Energy Administration said that mitigating socioeconomic impacts of energy resource development would require cooperation and coordination among all Federal agencies, not a massive increase in Federal assistance.

--The Council on Environmental Quality believed that the report did not support our conclusion that the need for additional Federal assistance has not been demonstrated at this time.

We continue to believe that State and local governments should be primarily responsible for providing necessary facilities and services and that the need for additional Federal assistance at this time has not been demonstrated. (See pp. 65 to 72.)

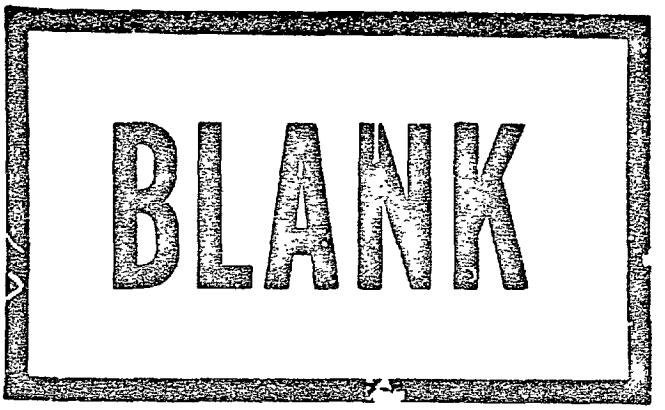
## Contents

APPENDIX



ABBREVIATIONS

| | |
|---|---|
| Btu | British thermal unit |
| ERDA | Energy Research and Development Administration |
| FEA | Federal Energy Administration |
| FRC | Federal Regional Council |
| GAO | General Accounting Office |
| HEW | Department of Health, Education, and Welfare |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# CHAPTER 1

## INTRODUCTION

Energy development in the Rocky Mountain States--Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, South Dakota, Utah, and Wyoming--may cause momentous changes to the western way of life and to some portions of the western landscape. With increasing national concern over developing domestic energy resources, the Rocky Mountain area, with its vast energy resources, will become increasingly important.

Many questions remain unanswered about the extent and kinds of Rocky Mountain energy development that will occur, and many uncertainties exist about the extent of changes that will result. However, energy resource development will surely occur and changes in the environment and socioeconomic structure of the area will surely result. Many communities will be affected and the need for housing and such basic public facilities and services as sewers, roads, utility lines, police, fire departments, parks, playgrounds, health care, and schools often arises before adequate local funding is available to provide them.

Many studies of the socioeconomic effects of energy resource development have been or are being made by government and private organizations. Appendix I is a bibliography of such studies for the Rocky Mountain area. This report, which is partly based on our analysis of the many studies, does not attempt to address all the specific problems of the various Rocky Mountain States and communities or the long-term (1985 and beyond) effects of energy resource development, but rather

--highlights the status of and potential for energy resource development in the Rocky Mountain area;

--identifies socioeconomic problems that may result by 1985 from energy resource development in the area; and

--discusses (1) Federal, State, and industry actions being taken to resolve the problems, (2) the level and type of effort that might be required, and (3) the roles the States, the Federal Government, and industry should play in mitigating these adverse socioeconomic impacts.

## CHAPTER 2

## PERSPECTIVE

### U.S. ENERGY SITUATION

Before the Arab oil embargo in 1973, U.S. energy demand had been continually increasing. Since about 1950, demand has surpassed domestic supply; by 1973 the United States depended on foreign oil for 35 percent of its domestic needs. The oil embargo reduced the petroleum supply 14 percent below expected consumption and caused an estimated $10 billion to $20 billion drop in the gross national product. Because of the embargo, 500,000 additional people were unemployed. The embargo made obvious the need to hold the country's vulnerability to acceptable levels. As a consequence, the President established a goal of increased national energy self-reliance. 1/ Even so, by December 1976, imports of foreign petroleum products had grown to about 8 million barrels per day, or 41 percent of domestic demand. 2/

U.S. energy consumption grew at an average annual rate of 3.9 percent between 1954 and 1973. 3/ However, during 1974 and the first 8 months of 1975, energy consumption decreased from the 1973 level. During the first 7 months of 1975 energy consumption was 4.4 percent below the comparable 1973 period. 4/

Most forecasters agree that future energy consumption will grow at a rate below the historical trends, but they disagree on what the rate will be. Some major energy policy studies completed during 1974 and 1975 predicted a future energy growth rate of about 2 to 3 percent. 5/ Extrapolating an annual growth rate of 2 percent on estimated 1975 energy consumption of 71.7 Quads a/ indicates that about 117.6 Quads of energy output would be needed in the year 2000. A 3-percent annual growth rate yields about 150.1 Quads of needed energy output. 6/ Even at the 2-percent rate of increase, the Nation's energy needs in 2000 will be more than 60 percent greater than 1975 consumption. These

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a/Quads are quadrillion British thermal units (Btu's). One quadrillion is equal to 1,000 trillion ($10^{15}$). One Btu is the amount of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit.

Note: Numbered footnotes to chapter 2 are on pages 7 and 8.

projections and the trend toward increased reliance on foreign petroleum indicate a need for strong energy conservation efforts and for development of alternate energy sources.

## GROWING IMPORTANCE OF THE ROCKY MOUNTAIN AREA

If the United States wishes to increase its national self-reliance in energy, the likelihood of increased national consumption makes increased efforts toward conservation together with increased production of domestic energy a necessity. Although petroleum and natural gas accounted for over 75 percent of U.S. energy consumption from 1970 through 1974, they represented less than 10 percent of the 1974 estimated domestic energy reserves. 7/ Increasing the proportion of energy the United States derives from fuels other than petroleum and increasing conservation efforts are important if the country is to become less reliant on foreign sources. Such increased use of other fuels could include burning coal, coverting coal to gaseous and liquid fuels, developing oil shale, using more uranium as a nuclear fuel, and developing geothermal resources. All these alternatives would probably use resources from the Rocky Mountain area. With a continuation of current oil price trends, for example, energy consumption is expected to gradually shift from oil and gas to coal and nuclear power. 8/

The Rocky Mountain area contains 95 percent of the Nation's uranium and 41 percent of its coal. 9/ Development of these resources will probably be required if domestic energy production is to be increased sufficiently to achieve greater energy self-reliance. Rapid development would have significant socioeconomic effects as discussed on pages 31 to 40.

Estimates of the total discovered U.S. energy reserves in coal, uranium, geothermal resources, natural gas, petroleum, and oil shale range from about 8,400 to 15,000 Quads. 10/ Over half of the U.S. reserves lie in the Rocky Mountain area, as shown in the following table. Geothermal and tar sand deposits are not included because, although the amount of these resources in the Rocky Mountain area is great, only a small part of them are reserves. 11/

Reserves are identified deposits known to be recoverable with current technology under present economic and legal conditions. 12/

Table 1

Comparison of Rocky Mountain Reserves with U.S. Reserves

| Resources | U.S. reserve energy content in Quads (note 7) | Percent of U.S. reserves in the Rocky Mountain area (note 12) |
|---|---|---|
| Coal | 5,200 to 10,400 | 41 |
| Uranium | 1,920 | 95 |
| Natural gas | 409-533 | 8 |
| Petroleum | 424-540 | 7 |
| Oil shale | 460 to 1,160 | 90 |
| Total of average estimates | 11,493 | |

SOCIOECONOMIC EFFECTS OF DEVELOPMENT

The Rocky Mountain area is a vast region of diverse, rough-cut terrain composed of deserts and semiarid high plains and mountains. Because of the nature of the land, the population is sparse--only 9.5 persons per square mile, compared to the national average of 57.5. 13/

Because the resources are located in sparsely populated places, developing them would result in new towns and cause some existing communities to double, triple, and quadruple their populations in a few years. This, in turn, would cause changes in the social structure and life styles of the communities as they grew from small towns to cities. Besides changing the quality of life, rapid growth may impose economic hardships on some existing communities. The need for basic public facilities and services often arises before adequate local revenue sources, including a tax base, exist within a community. Increased revenue will follow a population increase; however, if adequate public services are to be maintained, construction of facilities must coincide with, or precede, population increases. Even if enough revenue is available, development often takes place quickly

and time for planning for population increases is sometimes too short.

The extent and severity of socioeconomic effects will depend on the extent of resource development and the Nation's ability to effectively implement programs to mitigate these effects.

## FOOTNOTE REFERENCES


1/Project Independence Report, Federal Energy Administration, November 1974, pp. 2, 17, and 18.

2/Oil and Gas Journal, The Petroleum Publishing Company, January 17, 1977, p. 4.

3/GAO calculated on the basis of:

Walter G. Dupree, Jr. and James A. West, Unites States Energy Through the Year 2000, U.S. Department of the Interior, December 1972, p. 40.

U.S. Energy Use Down in 1974 After Two Decades of Increases, Bureau of Mines News Release, U.S. Department of the Interior, April 3, 1975, Table 2.

4/Monthly Energy Review, November 1975, Federal Energy Administration and GAO calculations based thereon.

5/Project Independence Report, Federal Energy Administration, November 1974.

A Time to Choose America's Energy Future, Energy Policy Project of the Ford Foundation (Cambridge, Mass., Ballinger Publishing Co., 1974).

A National Energy Conservation Program: The Half and Half Plan, Council on Environmental Quality, March 1974.

CTAB Recommendations for a National Energy Program, Commerce Technical Advisory Board, U.S. Department of Commerce, February 1975.

6/GAO calculated on the basis of:
Monthly Energy Review, November 1975.

7/Energy Perspectives, U.S. Department of the Interior, February 1975, p. 31.

8/1976 National Energy Outlook, Federal Energy Administration, 1976, p. XXIV.

9/Energy Development in the Rocky Mountain Region: Goals and Concerns, Federation of Rocky Mountain States, Inc., July 1975, p. 21.

10/1976 National Energy Outlook, p. 31.

11/Ibid.

12/Energy Development in the Rocky Mountain Region: Goals and Concerns, p. 21.

United States Mineral Resources, Geological Survey Professional Paper 820, United States Department of the Interior, 1973, p. 800.

13/Energy Development in the Rocky Mountain Region: Goals and Concerns, p. 17.

## CHAPTER 3

## STATUS AND POTENTIAL FOR ENERGY RESOURCE DEVELOPMENT IN THE ROCKY MOUNTAIN AREA

Although a large percentage of the Nation's energy resources lies in the Rocky Mountain area, less than 15 percent of its energy production comes from the area. 1/ This is largely because most of the country's energy production has been in petroleum and natural gas, a relatively small portion of which is produced in the Rocky Mountain area. With the increasing emphasis on other forms of energy, the area will become increasingly important as an energy source.

Coal and uranium are the energy resources which currently have the greatest potential for significantly contributing to the Nation's energy supply. In addition, almost all of the Nation's oil shale is in the Rocky Mountain area. The potential for development of these and other Rocky Mountain resources and some of the problems which must be solved before extensive development can take place are discussed below.

Maps showing where the various energy resources of the area lie are presented on the following pages.

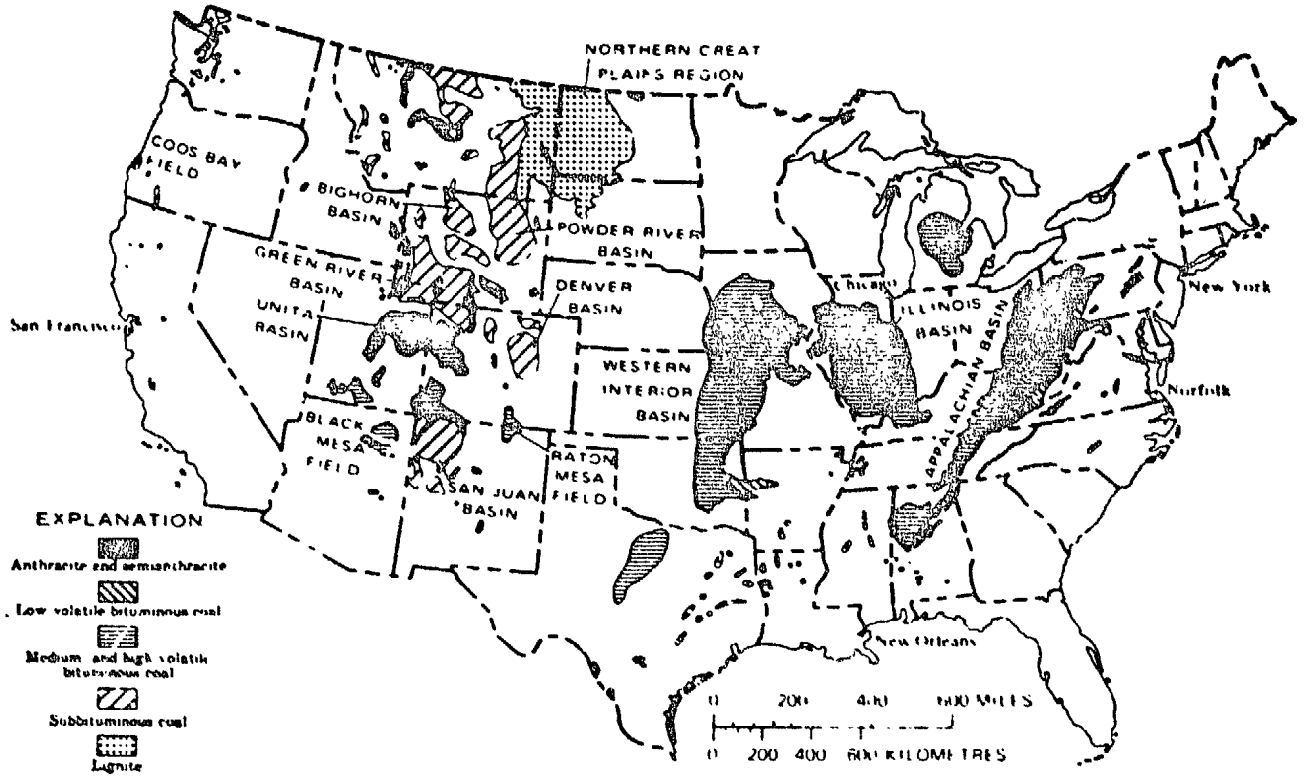
### COAL

Because it is abundant and demand for it is expected to increase, coal is one of the resources most likely to be extensively developed and therefore to have significant environmental and social effects on the Rocky Mountain area. 2/ Based on projections made in several studies of the amount of energy to be obtained from coal by 1985, coal production in the area might increase from 60 million tons in 1972 to as much as 560 million tons in 1985. While probably unrealistic, this implies that as many as 50 new 10-million-ton-per-year mines might come into production and that the population of the area might increase by about 300,000. 3/ In 1974 about 4,600 mines were operating, the largest of which produced 7 million tons of coal. 4/

The Federal Energy Administration (FEA) currently estimates that 390 million tons of coal will be produced annually in the Rocky Mountain area by 1985. This implies an increase in population of about 198,000.

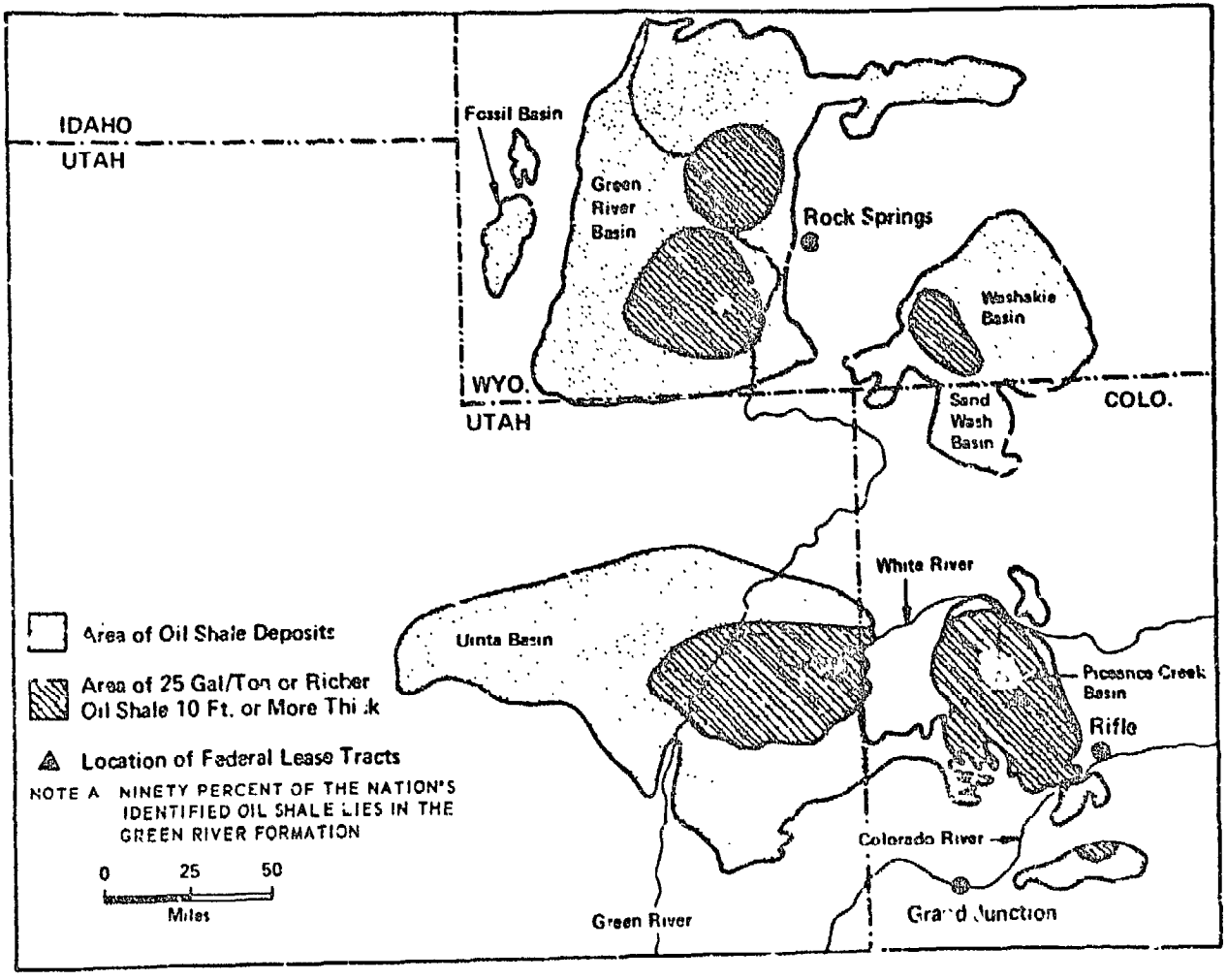
Note: Numbered footnotes to chapter 3 are on pages 26 to 30.

## COAL FIELDS IN THE CONTINENTAL UNITED STATES



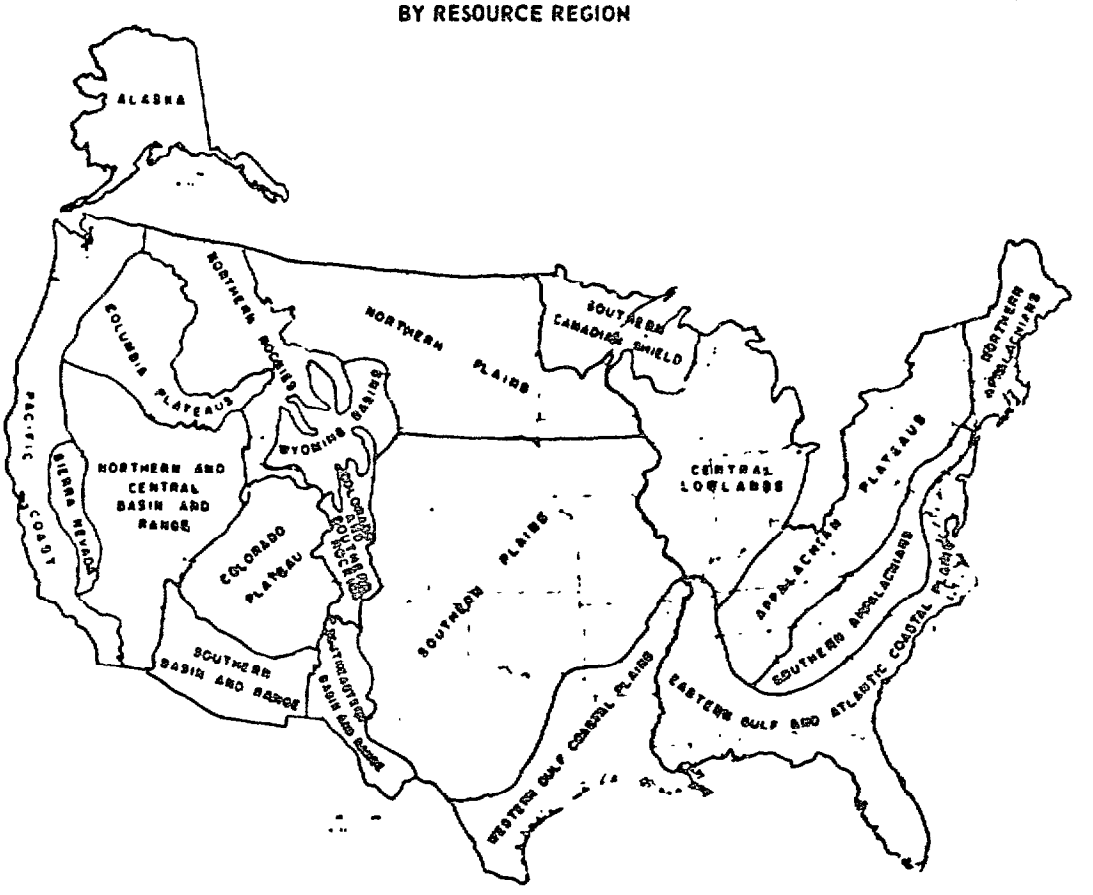

Source: Coal Reserves of the United States, January 1, 1974, U.S. Geological Survey Bulletin 1412.

# U.S. Oil Shale Deposits, Green River Formation (NOTE A)




Source: Energy Perspectives, U.S. Department of the Interior, February 1975, p. 181.

**DISTRIBUTION OF 1948–1974 URANIUM PRODUCTION PLUS 1/1/75 $8 RESERVES (NOTE A) BY RESOURCE REGION**



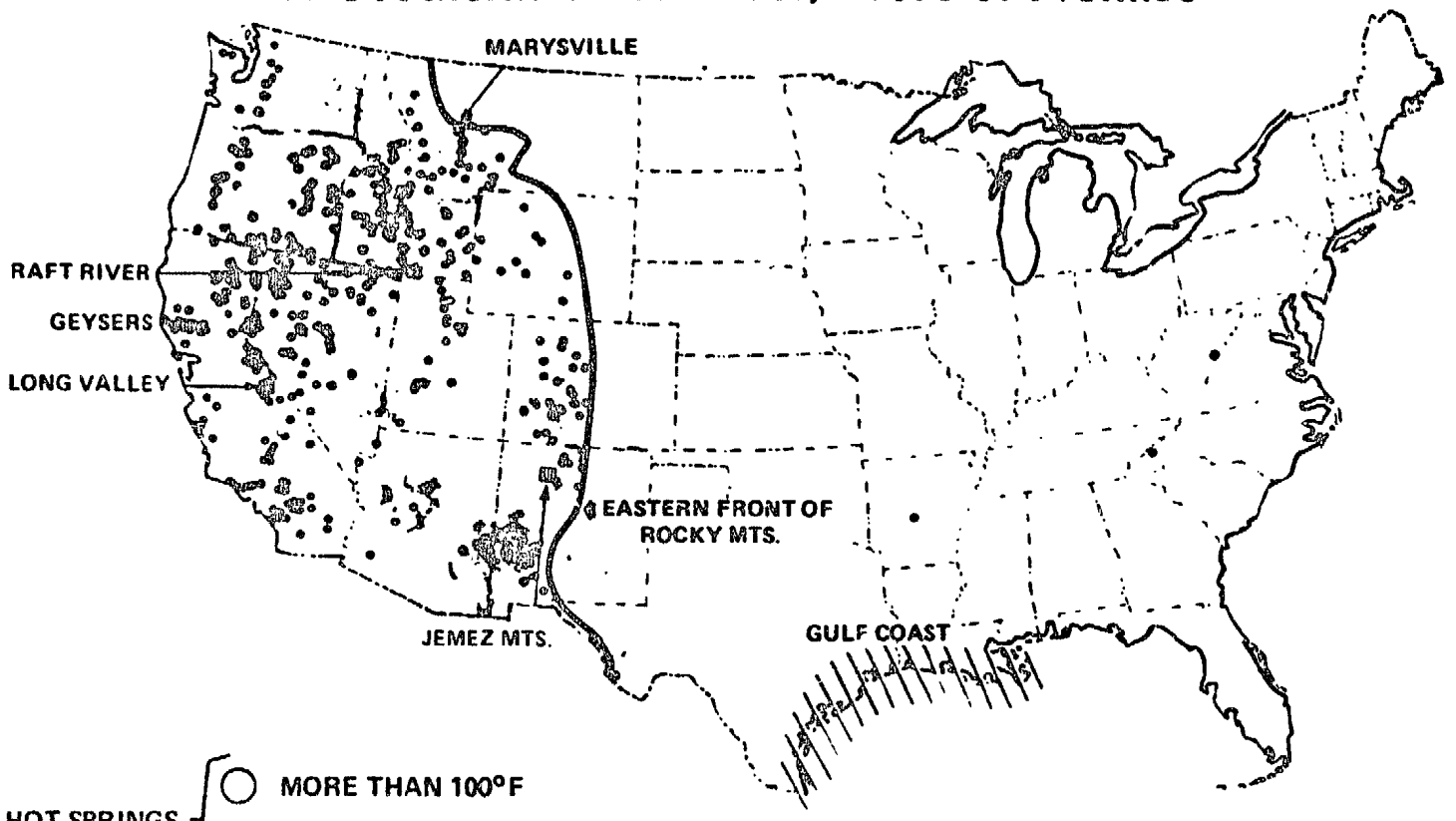

| Region | Tons $U_3O_8$ (NOTE A) | % of Total |
|---|---|---|
| Colorado Plateau | 338,100 | 72 |
| Wyoming Basins | 83,800 | 18 |
| Others | 48,200 | 10 |
| Totals | 470,100 | 100 |

A THE PRICE OF URANIUM HAS GONE UP RECENTLY. THE CURRENT PRICE DEPENDS ON MANY FACTORS, INCLUDING THE AMOUNT ORDERED AND THE TIME OF DELIVERY. PRICES GENERALLY RANGE BETWEEN $20 AND $30 A POUND OF U3O8 WHICH IS THE END PRODUCT OF THE URANIUM MINING-MILLING PROCESS.

B INCLUDES ALASKA, NORTHERN ROCKIES, COLORADO AND SOUTHERN ROCKIES, NORTHERN PLAINS, WESTERN GULF COASTAL PLAINS, AND NORTHERN AND CENTRAL BASIN AND RANGE, COLUMBIA PLATEAUS, SIERRA NEVADA, PACIFIC COAST, SOUTHEASTERN BASIN AND RANGE, SOUTHERN PLAINS, AND SOUTHERN APPALACHIANS.

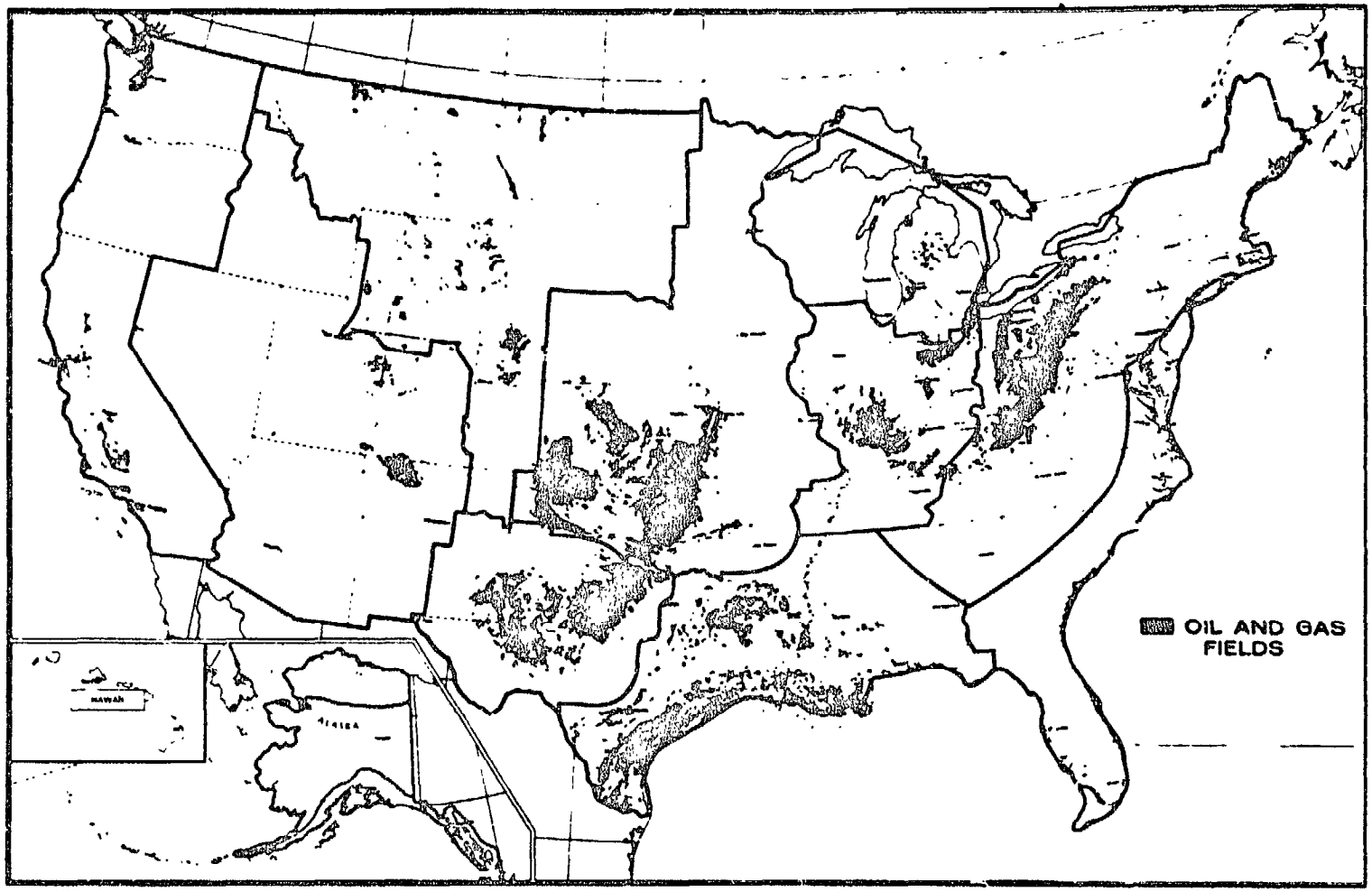
Source: Statistical Data of the Uranium Industry, United States Energy Research and Development Administration, January 1975, p. 32.

# U.S. Geothermal Resources, Areas of Promise




Source: Energy Perspectives, U.S. Department of the Interior, February 1975, p. 189.

## OIL AND GAS FIELDS OF THE UNITED STATES




Source: Geological Estimates of Undiscovered Recoverable Oil and Gas Resources in the United States, Geological Survey Circular 725, U.S. Department of the Interior, 1975, p. 19.

Amount and location

The Rocky Mountain area contains vast amounts of coal. Of 1.6 trillion tons discovered in the United States, 0.9 trillion (56 percent) are in eight Rocky Mountain States (Nevada and Idaho do not have significant coal deposits). Of an additional 1.6 trillion tons estimated to exist but not discovered, 1.2 trillion (75 percent) lie in the same eight States. 5/ In terms of energy content, the area contains about 40 percent of the Nation's coal reserves. 6/

Within the Rocky Mountain area, a 63-county area of the Northern Great Plains in northeastern Wyoming, eastern Montana, western North Dakota, and northwestern South Dakota is the richest in coal. This region has been estimated to contain 1.5 trillion tons, 160 billion of which are classified as reserves. Sizable deposits of coal also lie in Colorado, Utah, New Mexico, and Arizona. 7/

Probability and timing of development

The probability of large, near-term development of Rocky Mountain coal is high. Two major factors will influence the extent and timing of development--the market for the coal and the limitations and delays placed on development by environmental concerns, governmental policies, interfuel substitution, and court decisions.

With the passage of the National Environmental Policy Act, all Federal agencies are required to prepare a detailed statement for every major action that would significantly affect the quality of the human environment. Such statements will include environmental impacts of the proposed action, adverse effects that cannot be avoided, and alternatives. Preparation of environmental impact statements and the legal questions which result from the requirements of the National Environmental Policy Act may prevent or delay the development of Federal coal. For example, preparation of an environmental impact statement for mining coal on Federal lands and using coal in the proposed Kaiparowits powerplant in Utah required about 2 years. 8/ Recently, the Kaiparowits sponsors withdrew their application for Department of the Interior approval, largely because of uncertainty about the demand for electricity, rapidly escalating project costs, and environmental concerns. 9/

Lawsuits by citizens groups challenging Federal actions can also prevent or delay development. For example, a suit by the Sierra Club, a national conservation and environmental group, held up development of federally owned coal in the

Northern Great Plains for more than a year. The suit, which concerned the kind and extent of environmental impact statement required for the area under the National Environmental Protection Act, was only recently decided in favor of the Department of the Interior.

Greatest demand for the energy from Rocky Mountain coal is in the urban centers of the Midwest and Far West. 10/ After the coal is mined its energy can be transferred to meet demand by

--transporting the coal itself, by rail or pipeline, to the point where its energy is to be consumed;

--generating electricity near the mine, then sending it to the consumer through transmission lines; and

--converting coal to an intermediate fuel, such as synthetic gas, and transporting it through pipelines.

Transporting coal

For the immediate future, a very clear and broad market exists outside the Rocky Mountain area for coal, particularly for Northern Great Plains coal. Much of the market for Northern Great Plains coal, which is low in sulfur, is with utilities in the Midwest. However, because of shipping costs, Northern Great Plains coal costs more than high-sulfur midwestern coal. Therefore, the long-term market for Northern Great Plains coal is less certain. 11/

High-sulfur midwestern coal, while available and cheaper, cannot be widely used because air pollution standards limit the amount of sulfur oxides emitted and most powerplants do not have stack gas desulfurization equipment and may not have it for several years. In the longer term, however, if the technology for reducing sulfur oxide emissions is improved and the cost of desulfurization equipment is reduced, high-sulfur coal might find a large market. 12/

Given an availability of capital and sufficient eastern and midwestern coal production, the utility industry will have the option of installing stack gas desulfurization equipment and burning high-sulfur coal. Northern Great Plains coal could then be at a serious price disadvantage in some markets, although it might be competitive in certain midwestern markets. Thus, truly massive Rocky Mountain coal development will probably occur only if the factors controlling the markets allow it--by no means a certainty. 13/

Federal Government policy decisions can affect the demand for Northern Great Plains coal. For example, the relaxation of air quality standards to evaluate the use of more midwestern and Appalachian coal, the provision of Federal incentives or support for stack gas desulfurization equipment, or increased Federal research, development, and demonstration on other technologies designed to reduce the sulfur content of coal could decrease the projected rate of development of Northern Great Plains and other Rocky Mountain coal.

Coal exported from the Northern Great Plains is being transported by rail. A potential major constraint on use of western coal is the capacity of existing railroads to handle additional coal trains. Rail transportation to the Midwest has, in the past, more than doubled the cost of the coal.

An alternative means of transporting large amounts of coal over long distances is coal slurry pipelines. 13/ This involves transporting pulverized coal mixed with an approximately equal amount of water through a pipeline to its destination, where the water is removed and the coal can be used. The only operating coal slurry pipeline in the United States has been used since 1970 to transport coal 273 miles from northeastern Arizona to southern Nevada. Other pipelines have been proposed to transport coal from Wyoming to Arkansas, from Colorado to Texas, between New Mexico and Arizona, from Utah to Nevada, and between Wyoming and Oregon. Controversy exists over building new slurry pipelines since most would compete with existing railroads for coal transportation and both advantages and disadvantages are associated with their construction. 14/

Because pipelines cannot be built without rights of way over Federal and private lands, the 94th Congress considered but did not decide whether such rights of way should be granted (94th Congress--H.R. 1863, H.R. 2220, H.R. 2553, H.R. 2896, and H.R. 9906). The 95th Congress will likely address this question also. The Office of Technology Assessment is studying the economic, legal, and environmental issues associated with railroad and slurry pipeline transportation of coal.

Coal-fired electrical generation

As of May 1976, 59 new coal-fired electrical generation plants were being built or were planned to be built by 1985 in the Rocky Mountain area. 15/ These new electrical generation plants would greatly increase the use of coal, possibly displacing other fuels, and would bring relatively large increases in population to sparsely populated areas. They would

also have some adverse environmental effects, such as lowering of air quality and great use of water. 16/ However, the construction of new plants has been slowed by environmental and economic concerns and the number actually constructed may be much less than planned.

As an example of the environmental concerns with new electric plants, consider the Four Corners Power Plant. The plant, located near Farmington, New Mexico, is one of the largest electric plants in the United States. The combined generating capacity of its coal-fired boilers is 2,075 megawatts. (1 megawatt is equal to 1 million watts.) The unit occupies 1,021 acres, plus 765 more for storing fly ash. The stacks tower to a height of 800 feet, dispersing daily into the atmosphere more than 600 tons of sulfur dioxide, nitrogen oxides, and ash from the consumption of 23,000 tons of coal. Forty thousand acre-feet of water are consumed annually. The plant cost $328 million, plus another $178 million for the transmission lines to carry away its output. 17/

Coal conversion

Conversion of coal to other fuels, especially gas, is a potentially huge industry in the Rocky Mountain area. More than 20 plants to gasify or liquefy coal have been planned for the area, but considerable uncertainties exist as to how many of these plants will actually be constructed. Most were gasification plants, designed to produce about 91 billion cubic feet of gas annually, 18/ and having an expected life of 20 to 35 years. 19/ Twenty such plants represent a possible production of about 1.3 trillion cubic feet per year. This amounts to more than half the natural gas produced from the Outer Continental Shelf in 1974, or approximately 8 percent of domestic natural gas production for that year. 20/

An extensive coal gasification industry may hold promise for helping to alleviate the increasing national shortage of clean fuels. It is thought to create fewer pollutants in producing a given amount of energy 21/ and, although it requires substantial amounts of water, it could use substantially less than most coal-fired electrical generation plants used to produce an equivalent amount of energy. 22/ However, construction of as many as 20 conversion plants, in addition to other developments, would put heavy demands on the area's water supplies, cause environmental degradation, and increase the population.

Major problems which have largely inhibited commercialization efforts are extremely large capital requirements,

unproven technologies, and high production costs, which result in prices for synthetic fuels which are not competitive with existing energy sources. 23/

Coal gasification technology has been practiced for at least 50 years. The Lurgi process developed by a West German firm has been used commercially in Europe, South Africa, and South Korea. Many of the plants planned for the Rocky Mountain area would have used the Lurgi process; however, to produce the high-Btu (pipeline-quality) synthetic natural gas needed in the United States, the basic Lurgi technology would have to be modified. This modification requires a methanation step. Engineers have studied coal gas methanation technology extensively and are confident that extension to commercial production is technically feasible. 24/

Another possible solution to the technology problem is the development of new gasification systems. Although systems are being researched under federally funded projects, Federal research officials do not expect federally funded research to produce commercially acceptable processes until the mid-1980s.

The costs of producing pipeline-quality synthetic gas from coal are highly uncertain and depend on a variety of factors, such as required rate of return on investment and financing methods. In November 1975 a Federal interagency synthetic fuels task force estimated that to receive an annual rate of return of 15 percent, assuming a 75-percent debt on capital, would require a regulated gas price of between $2.61 and $3.02 per 1,000 cubic feet in 1975 dollars. The Energy Research and Development Administration (ERDA), in a March 1976 description of its proposed synthetic fuels commercial demonstration program, estimated the regulated price would be $3.28 per 1,000 cubic feet in January 1, 1976, dollars. Most of the recent industry estimates are over $3.00 per 1,000 cubic feet. 25/ Price estimates for synthetic gas production in 1975 and 1976 dollars are about double the April 1977 regulated $1.45 ceiling price on domestic natural gas at the wellhead. Converted to the equivalent price per barrel of oil, the $15 to $19 per barrel price of pipeline-quality synthetic gas does not compare favorably with the $13 current price of foreign oil. However, the estimated price of synthetic gas compares more favorably with the current price of imported liquefied natural gas--approximately $2.50 to $3.00 per 1,000 cubic feet.

A series of allowable price increases is taking place, and general price increases are expected to continue. 26/ However, the price estimates for synthetic gas have been consistently escalating, and there is still a great deal of uncertainty attached to them. Current estimates in

the area of $3.00 per 1,000 cubic feet of synthetic gas are more an indication of a lower limit than a midpoint or range. Although it is probable that wellhead prices for domestic natural gas will increase, there is a comparable probability that the price of synthetic gas will also escalate. Thus, the price gap between domestic natural gas and synthetic gas may not close as rapidly as might be implied by current estimates. Increased natural gas prices along with decreasing supplies favor developing a coal gasification industry; but, before this happens, there must be a change in the relationship of prices, or technological improvements must reduce the price. 27/

If a synthetic fuels industry is to be developed in the next decade, some form of Government subsidies or price guarantees will probably be necessary. 28/

In a recent GAO report, 29/ we discussed, among other things, H.R. 7112 (94th Congress), a bill which would have provided Federal loan guarantees to accelerate the commercialization of synthetic fuels--gas from coal, oil from coal, and/or oil from shale. The report concluded that synthetic fuels production is not cost effective in that the total cost of output is not price competitive with foreign oil. Further, synthetic fuels do not look attractive on the basis of present knowledge when compared to other technologies on an actual, or incremental, price basis.

GAO believes that Government financial assistance for commercial development is not warranted at this time. Although full priority should be directed to developing improved synthetic fuels technologies, it appears possible to gain adequate information of an environmental and regulatory nature from smaller plants under Government control. When commercialization of the technology becomes a prime objective, consideration also should be given to approaches other than loan guarantees for gaining private industry interest.

OIL SHALE

Because oil shale is one of the Nation's most abundant energy resources and because fuels from it can be substituted for conventional petroleum fuels, oil shale could substantially contribute to the Nation's energy requirements. Vast amounts of this resource lie in the Rocky Mountain area, and experimentation with using it as a source of petroleum products has been going on for many years. 30/ However, oil shale, which costs roughly $22 a barrel, has not developed into a viable commercial source of petroleum primarily because other fossil fuels have always been cheaper. 31/

Although world petroleum prices have risen in the past few years, the accelerating estimated costs of producing oil shale have reduced the relative attractiveness of currently available oil shale processing technologies, and no commercial oil shale processing facilities currently exist in the United States. 32/

Citing environmental and economic reasons, four oil companies have recently been granted suspensions by the Department of the Interior on their oil shale leases in Colorado and Utah. The suspensions temporarily stop payments to the Government for 1 year.

These recent events show the uncertainty of development of western oil shale in the near future.

FEA has stated that indications are that no commercial development will take place in the United States without Federal financial assistance. 33/ Price and technology are primary concerns; secondary, but also crucial, issues concern water availability and the environmental and social effects of large-scale development.

On April 1, 1977, we addressed these issues in testimony before the Senate Committee on Energy and Natural Resources, Subcommittee on Energy Production and Supply on S. 419. The proposed legislation would establish a Federal program to determine the commercial viability and environmental and social impacts of two oil shale retorting technologies through federally owned demonstration facilities.

In our testimony we stated that the technical, economic, environmental, socioeconomic, and regulatory problems relating to oil shale development have not been resolved to the point where a full-sized commercial demonstration is possible. We suggested that a smaller than full-sized demonstration facility be authorized to resolve these issues before a "commercial-sized" plant is built. We noted further that the building of one or two commercial-sized plants could not, in itself, demonstrate the commercial viability of an oil shale industry.

Amount and location

Oil shale deposits are found in several areas of the United States. However, the only U.S. deposit having adequate size and availability using present technology is the Green River formation, located in Colorado, Wyoming, and Utah. These deposits are estimated to contain about 600 billion barrels of shale oil. 34/

Probability and timing of development

It is uncertain when commercial oil shale development will occur. Although Project Independence late in 1974 estimated that shale oil production could reach 1 million barrels per day by 1985, recent studies have indicated that there may be virtually no commercial production until there are Federal subsidies and that a realistic production estimate for 1985 might be much smaller than 1 million barrels per day. 35/

The possibility of even a small scale industry by 1985 is very uncertain in view of recent events, including the suspensions of oil shale leases. However, for perspective, a 500,000-barrel-per-day industry would require an estimated capital expenditure of $3 to $5 billion and could require

--developing 50 new 50-million-ton-per-year shale mines and retorting plants;

--laying, stabilizing, and restoring 5 square miles of tailings 40 feet deep each year;

--constructing 10 new 50,000-barrel-per-day upgrading plants and production pipelines; and

--supplying 80,000 acre-feet of water per year.

New mines to produce 250 million tons of oil shale annually imply the need for 22,500 miners and a total population growth of about 150,000. 36/

The two major technological options for oil shale development are mining followed by surface processing (retorting) of the oil shale and in situ (in place) processing which removes the oil from the shale without removing the shale from the ground. 37

All proposed methods of developing oil shale will have some adverse environmental effects. Environmental effects and the ability to mitigate them could have a significant effect on the rate of oil shale development. Mining and retorting methods may create (1) huge disposal problems because the spent shale from retorting has greater volume than the shale before mining, (2) water availability problems because mining, processing, and associated activities will require large amounts of water, (3) water pollution problems, and (4) air quality problems.

In situ processing offers potential advantages over mining and surface processing. It eliminates some problems concerned with moving and disposing of shale, may cause less

environmental degradation since it requires no mining, is less likely to pollute surface water, and requires less water than most retorting processes. Major environmental concerns with in situ processing are potential pollution of underground water by the solid residue of the retorting action and by unrecovered oil and ground subsidence that may occur, as with underground mining. A further disadvantage of the process is that it recovers a smaller percentage of the oil than does surface processing. 38/

## URANIUM

Most economically recoverable uranium reserves identified in the United States lie in the Rocky Mountain area. Eighty-five percent of these reserves are in New Mexico and Wyoming. 39/ Most of the other potential resources are thought to be located in the Rocky Mountain area. 40/

Much of the demand for uranium is for use as fuel in nuclear reactors to produce electricity; therefore, future uranium demand depends to a large extent on the future of nuclear powerplants. 41/ Such powerplants have potential for increasingly meeting the country's future electric power needs. Nuclear power could have significant economic, fuel resource, and environmental benefits over oil- and coal-fired electrical generation. On the other hand, some experts believe that sufficient assurance has not been obtained that the public is being adequately protected against the hazards of nuclear power. 42/

Present estimates of future uranium demand vary widely. An average of 12 estimates of nuclear energy production by 1985 made by 4 different studies indicates that uranium production will almost quadruple from 1972 to 1985. Such an increase would require about 75 new 1-million-ton-per-year mines and approximately 21 new mills to process the ore by 1985. These figures imply a need for 22,550 new miners and a population increase of 150,000 in the Rocky Mountain area. 43/

## GEOTHERMAL RESOURCES

Geothermal energy, in its broadest sense, is the natural heat of the Earth. Where heat is concentrated in restricted volumes in the Earth's crust, in a manner analogous to concentrations of oil in commercial petroleum reservoirs, the heat, or geothermal resource, becomes accessible and potentially exploitable. Geothermal resources are classified as dry steam, hot mineralized water, hot dry rock, and geopressured zones. These resources can be used to produce energy, fresh water, and minerals.

Although each type of resource could conceivably be used as a source of power, dry steam is the only one for which technology has been developed to commercially produce electric power. The only dry steam source in the United States identified as being suitable for commercial production is in California.

Although hundreds of geothermal energy sites have been located in the Rocky Mountain area, developing them as commercial energy sources will depend on developing technology for commercial use of sources other than dry steam.

Because each geothermal energy source presents technological and environmental problems, geothermal resources will apparently not offer a major alternative source of energy before 1985 and projections to the year 2000 involve great uncertainty. Effects of geothermal development on the Rocky Mountain area through 1985 will therefore be small.

TAR SANDS

Tar sands are hydrocarbon-bearing deposits distinguished from more conventional oil gas reservoirs by the high viscosity (thick or glutinous character) of the hydrocarbon which is not recoverable by conventional oil production techniques. Of the numerous known tar sands deposits in the United States, most are in Utah. The 24 Utah deposits that have been mapped and sampled are known to contain about 28 billion barrels of oil, roughly five times the Nation's annual consumption. 44/

Tar sands are not expected to contribute significantly to meeting the country's energy needs before 1985. Some members of the synthetic fuels community doubt that any oil will be produced from U.S. tar sands before 1985. 45/

Development depends heavily on perfecting extraction technology. Most Utah deposits are covered by overburden too thick to allow economical strip mining. While some mining and processing could take place, in situ processing, for which commercial technology has not been developed, would probably be required to exploit the deposits. However, as economic conditions change and oil supplies become more scarce, mining deposits covered by thicker overburdens may become feasible. Other factors which will affect tar sands development are high water demands and pollution, the uncertain oil exporting and pricing policies of the Organization of Petroleum Exporting Countries, the problems of overlap of tar sand and oil and gas leases, and the need for possible Federal price guarantees or other incentives, if they were thought desirable, to develop a synthetic fuels industry. 46/

## OIL AND GAS

The continuing need for domestic oil and gas will guarantee continuing exploration for new sources and extraction of existing reserves. The Rocky Mountain States contain estimated reserves of 3.3 billion barrels of petroleum and 21.5 trillion cubic feet of natural gas, or about 7.3 percent and 7.7 percent, respectively, of the total U.S. estimated reserves. Most Rocky Mountain States contain oil and gas deposits, but Wyoming and New Mexico together have well over half of the region's reserves. 47/

According to a U.S. Geological Survey official, with the exception of those States where little potential is seen for significant deposits, the region has been extensively explored. Current estimates to 1985 foresee no significant increase in crude oil production and only some increase in natural gas production in the area. 48/

About 600 trillion cubic feet of natural gas may be locked in tight, low permeability formations in deep Rocky Mountain basins. This gas, however, is not commercially producible with current drilling techniques. Although efforts are underway to develop improved methods to recover this gas, they are unlikely to result in considerable commercial production before the late 1980s. 49/

Where fields are relatively new and production is increasing, some increased socioeconomic effects may occur. Additionally, increased activity in older fields may have some impact, particularly when combined with other resource development.

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## CHAPTER 4

## SOCIOECONOMIC PROBLEMS

### WHAT ARE THE PROBLEMS?

The development of energy resources often causes rapid population growth which, especially in small communities, disrupts social patterns and strains or depletes local economic resources. As used in this report, the term socioeconomic problems or impacts refers to the need for housing and such basic public facilities and services as sewers, roads, utility lines, police, fire departments, health care, and schools--the need for which often arises before there is adequate local funding to provide them. Parks, playgrounds, and community centers are also frequently neglected. 1/ Most of the problems could be solved if communities

--knew the timing of development so that needed public facilities and services could be planned and designed and 2/

--had funds available to begin providing them before the additional people arrived. 3/

Characteristically in energy resource development, the "where," "when," "how much," and "at what rate" are unknown until the development begins. 4/ Development of resources in an area is often undertaken by several companies with separate projects, each having different timing and approval uncertainties. 5/

When energy resource development is uncertain, communities have trouble beginning to plan and design facilities. Even after development has been announced, communities may be reluctant to invest in the planning and designing of needed public facilities because the investment may be lost if development plans change. 6/

Communities that know the size and timing of development are often faced with yet another problem--they lack the revenue sources, including a tax base, to finance public facilities. Increased revenues will follow a population increase; 7/ however, if an adequate quality of life is to be maintained, construction of housing and facilities and the provision of services must coincide with, or precede--not follow--population increases.

Note: Numbered footnotes to chapter 4 are on pages 61 to 64.

A problem with financing growth after development begins is the built-in imbalance between local taxing jurisdictions, such as between counties and cities and between States. For example, much of the energy development that results in a "boom town" type of growth occurs in rural areas that are under a county's tax jurisdiction. The people employed by the energy development project, however, generally want to live in the closest city or even in cities in adjacent counties. The result is that the host county has the principal tax base, but the cities have most of the problems of growth.

An example: Sweetwater County, Wyoming

Sweetwater County, Wyoming, is one of the most studied examples of socioeconomic impacts caused by rapid population increases resulting from energy development. The following illustration is excerpted from a number of these studies. Rock Springs and Green River in Sweetwater County experienced concurrent rapid development of oil and gas resources, construction of a coal-fired electric generating plant, and development of other mineral resources, which caused the county's population to more than double in 4 years--from about 18,000 in 1970 to about 37,000 in 1974--a compound annual growth rate of 19 percent. As a result the quality of life diminished, industrial productivity declined, and the fiscal viability of local government was threatened. 8/

The population grew beyond the point at which existing institutions and ways of doing things were adequate. The permanent housing market was insufficient and prices of recently built homes were too high for the average worker. 9/ These problems arose from a combination of factors. Construction workers imported from outside had to be housed, and housing construction workers were subject to pirating by other employers. Because little sewage treatment capacity was available, developers of large housing projects had to build treatment facilities. About half of the land around the communities was federally owned and the remainder was closely held by a few private owners; this resulted in high land costs. High interest rates drove home mortgage costs to record highs. Permanent housing units could not be built fast enough to keep pace with demand. As a result, 4,500 to 5,000 mobile homes were used to accommodate the growth in Sweetwater County. 10/

Other problems also degraded the quality of life. In 1970 Sweetwater County had a ratio of 1 doctor for every 1,300 people. In mid-1974 the ratio had fallen to

1 doctor for every 3,700 people; the statewide average was one to 1,100, 11/ and the nationwide average was about 1 to 612. 12/ As a result, health care was a major problem for the county and about 40 percent of its residents had to obtain such care elsewhere. 13/

The mental health clinic caseload expanded ninefold. Much of the increase came from long-term residents. The rates of alcoholism, broken homes, suicide attempts, and suicide all increased. 14/

Much of the population increase after 1970 was housed outside incorporated communities in scattered fringe developments. Such settlements offered little opportunity or encouragement for newcomers to participate in the community. Social cohesion suffered as alienation and emotional distress fed on each other. 15/

Recreational, cultural, and adult education facilities did not keep pace with growth. Organized year-round recreation for youth was particularly lacking, and extensive expansion of indoor facilities was needed. 16/

Many schools were strained beyond capacity. Both the Green River and Rock Springs school districts were bonded up to the State constitutional limit of 10 percent of assessed valuation. Because of the ceiling, the districts were not able to budget for needed additional counseling, schools, social workers, or other personnel to give students personal attention. 17/

Retailing and services facilities also failed to expand as rapidly as total employment. Telephone service suffered. The cost of living rose faster than the national rate and salaries, particularly in local services employment, did not keep pace. In addition, because of the emphasis on construction and mining, employment for women did not increase as rapidly as total employment. 18/

The problems affecting the quality of life were more than inconvenient; they damaged industrial activity in Sweetwater County. Employee turnover rose sharply in 1973, ranging from 35 to 100 percent among the different mining employers. Both employee turnover and reduced productivity were attributable to difficulties in recruiting and retaining satisfactory employees willing to live under "boom town" conditions. 19/

The demands on Green River and Rock Springs for such additional municipal services as police and fire protection

and the capital constrution costs for water, sewer, and sanitation were beyond the communities' financial capacities. They supported themselves through Federal revenue sharing funds and a variety of taxes and fees, but these revenue sources offered no increased borrowing capacity. As a result, local government in Sweetwater County was underfinanced and unable to furnish all the services and facilities required by growth. 20/

Beginning early in 1974, the growth rate leveled off. Population estimates show a slight increase in 1975 population with a slight decrease in 1976. This leveling off of the growth rate has given the government entities some time to catch up with needed expansion of facilities and services. 21/

The slowdown in the growth rate since 1974 was accompanied by substantial increases in assessed valuation and bonding limits. 22/

Measures have been taken by local governments to improve the quality of life in the county. The Rock Springs school district has expanded its capacity and added to its special education staff. The enlarging tax base will support needed special education programs, additional teaching staff, and facilities with minimum reliance on borrowing. 23/

Health care capacity in Sweetwater County has been expanded by added physicians (mostly through the National Health Service program), added physician assistances, a health maintenance organization subsidized by the Federal Government, beginning construction of a new hospital, and addition of professional psychological counseling services. The level of health services is still in need of improvement and will require continued attention and effort. 24/

Housing demands have been largely fulfilled by considerable single and multifamily construction, mobile homes, single worker complexes, and some substandard housing. With a decrease in construction employment levels, alternative mobile home spaces have become increasingly available and new mobile home parks are under construction. There has been an increase in permanent housing in Rock Springs and financing is available for single family units from both commercial banks and savings and loan associations. Permanent housing will still not be available to all who desire it because the housing is beyond the financial capabilities of a large segment of the potential market, construction workers have difficulty in qualifying for mortgage loans, and restrictions in land availability or sewage treatment facilities have limited development alternatives. 25/

Community programs to provide recreational facilities have been limited; however, an extensive recreational complex is being planned north of Rock Springs by the city and county for completion in 1977. 26/

Traffic problems cause travel within Rock Springs to be time consuming. The city has set aside money for improving traffic flow and hired professional planners to cope with the problem. 27/

The problems of providing adequate police protection have been partially alleviated by the decline in construction workers. 28/

The need for retail and local services has been partially alleviated by the construction of a shopping center, new motels, and restaurants. Other needs still exist, such as bowling alleys, day care facilities, and more shopping facilities. 28/

The future appears to hold more growth for Sweetwater County. Population is expected to begin growing again in 1977 and by 1985 is expected to increase by 82 percent from estimated 1976 population. This population growth is expected to result from construction of an additional electrical powerplant, opening of five new coal mines, expansion of the area's oil and gas industry, possible construction of coal gasification and oil shale processing facilities, development of trona mining, and the expansion of local services to catch up with development. 29/

Projections of future local government income and projected operating and capital requirements show that the county government, Rock Springs and Green River city governments, and the Rock Springs school district will all have sufficient income to more than meet requirements. Only the Green River School District may have trouble meeting its needs and will need financial aid if capital requirements are to be met. 30/

In summary, Sweetwater County and the cities of Rock Springs and Green River appear to have reached a point where the quality of life is improving and fiscal problems have been solved. Even with the anticipated moderately high future average annual growth rate of 6.9 percent (much less than experienced during the 1970 to 1974 period), it is reasonable to expect that the boom conditions of 1970 through 1974 will not recur.

Many communities will be affected

The problems faced by Sweetwater County communities are, or may be, confronting many Rocky Mountain area communities. A 1975 survey of the 6 Rocky Mountain States in which most energy resource development is likely to take place (Colorado, the Dakotas, Montana, Wyoming, and Utah) identified 131 communities * that could be most affected by energy resource development. 31/ Of the 131 communities, 24 were identified in Colorado, 18 in North Dakota, 5 in South Dakota, 6 in Montana, 25 in Wyoming, and 53 in Utah.

The numbers of communities to be affected by resource are shown in the following table. 32/

Table 2

| Resource | Number of communities (note a) |
|---|---|
| Coal | 99 |
| Oil | 35 |
| Gas | 31 |
| Oil shale | 21 |
| Coal gasification | 5 |
| Uranium | 4 |
| Hydroelectric | 4 |

a/The number of communities totals to more than 131 because 45 communities reported being affected by the development of 2 or more resources.

The number of communities in the 10-State area that will be affected will be higher than 131, since development will

*As we were finalizing this report, FEA officials told us a more recent study done for the Denver Federal Regional council indicates that there might be an impact on as many as 170 communities in the 6 States. The officials noted, however, that if less energy resources are developed, as they indicated may well be the case, then fewer than 131 communities would be impacted. We do not believe that the number of communities that may have an impact can be definitely specified at this time, so we have presented our analysis still based on the 131 communities.

take place in some areas located in the 4 Rocky Mountain States not included in the survey discussed above. Of the remaining four States, however, only New Mexico has significant amounts of coal, uranium, oil, and gas which are expected to be developed at a rate which might cause communities to be affected.

Most of the 131 communities are very small. Population extremes ranged from approximately 100 to over 47,000 in Bismarck, North Datota, the only community of the 131 that is a standard metropolitan statistical area. The number of communities by population range are summarized in the following table. 33/

Table 3

| Estimated 1974 population | Number of communities | Percent |
|---|---|---|
| Less than 500 | 50 | 38 |
| 500 to 1,000 | 27 | 21 |
| 1,000 to 2,000 | 21 | 16 |
| 2,000 to 5,000 | 18 | 14 |
| More than 5,000 | 15 | 11 |
| Total | 131 | 100 |

Of the 131 communities, 59 have populations of less than 1,500 and are located more than 100 miles from the resources and services of a metropolitan area. Eighteen of those 59 are from 200 to more than 300 miles from a metropolitan area. 34/

Table 4 shows the January 1975 status of some of the facilities and services available in the 131 communities. 35/

Table 4

January 1975

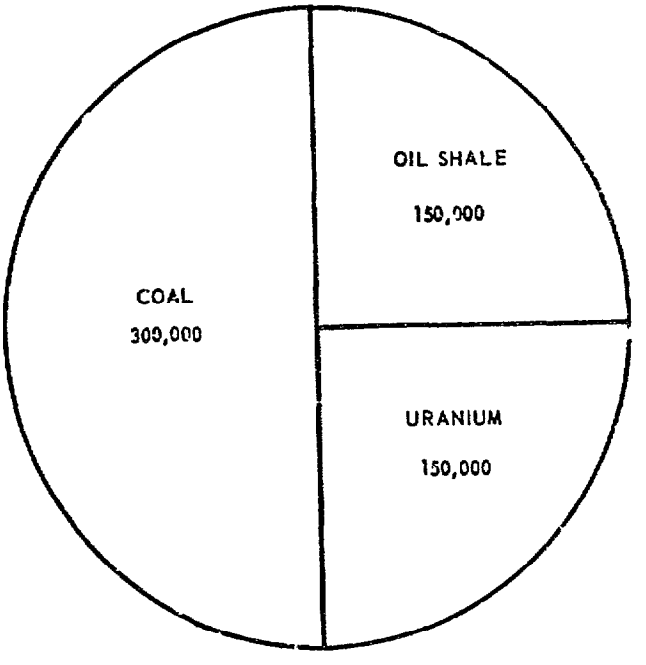
| Facility/ service | Status |
|---|---|
| Health care | 1,652 to 1 population to doctor ratio for the affected communities; the regional ratio was 911 to 1 and the national average was 612 to 1. Less than 30 percent of the communities had hospitals. |
| Schools | Classroom availability was adegate, but would soon become insufficient in most areas. |
| Housing | Could not meet increased population growth; mobile homes accounted for approximately 15 percent of total available single family housing. |
| Planning | Planning for growth was not current in some communities and capability for planning was limited.<br><br>Only 42 communities had planning documents, 13 of which were prepared before 1970. |
| Water and sewage | Treatment of water and sewage varied; many of the smaller communities relied on deep well water sources with no chemical treatment. Much of the sewage disposal was through septic tanks or sewage lagoons. |

Because many of the communities are small, they cannot provide as extensive public facilities and services as larger communities. As rapid growth continues, the already less than desirable level of facilities and services may further diminish.

Growth estimates of the communities

The population of the 10 Rocky Mountain States is expected to increase greatly as a result of energy development. 36/ A recent population estimate of the area was about 10.5 million, 5 million of which was outside urban areas. 37/ The estimated population growth by 1985 due to energy resource development is shown in the following chart. 38/

**CHART 1**




These estimates do not include growth associated with conversion, transportation, and utility industries which could increase these estimates; nor do they reflect recent events which indicate a slower pace of development than the recent studies anticipated. These events include the suspension of oil shale leases, the withdrawal of the sponsors for a major powerplant, the refusal of the 94th Congress to pass various legislation authorizing large Federal subsidies for synthetic fuel and nuclear development, and the continuing uncertainties over the economics and social desirability of synthetic fuel and nuclear power development.

Although the estimated growth from resource extraction would represent only a 5- to 6-percent total increase in the Rocky Mountain area population over 10 years, most new people will move into small towns, causing them to grow rapidly. 39/ As evidenced by the case of Sweetwater County, Wyoming, rapid growth of small communities could result in serious socio-economic impacts. (See pp. 32 to 34.)

As discussed on page 53, studies have made low and high estimates of per person costs for public facilities and services of $3,121 and $4,892 in 1975 dollars. Using

these estimates as indicators, total cost estimates for a population increase of 600,000 are $1.9 billion and $2.9 billion, respectively, in 1975 dollars.

## WHAT IS BEING DONE?

Because many communities cannot handle the socioeconomic effects of rapid expansion by themselves, they look toward their State governments, the Federal Government, and industry for assistance. Some States have enacted legislation intended to mitigate the effects; the Federal Government has provided some assistance and has recently enacted legislation to provide much more; and in a few cases industry has provided assistance.

### By the States

Although most of the Rocky Mountain States have some sort of tax on mineral extraction, until recent years no State raised significant amounts of money to mitigate socioeconomic effects of energy development. Since January 1975, Wyoming enacted a comprehensive package of laws to help its communities finance solutions to the problems of rapid growth; Montana, North Dakota, and Utah passed laws which will provide significant assistance; and Colorado, Nevada, and New Mexico enacted laws to provide limited assistance.

#### Wyoming

One 1975 Wyoming law levied a severance tax on coal extracted in addition to the mineral severance tax of 4 percent applicable to coal. The current tax of 1.6 percent of the value of coal mined will increase to 2 percent in 1978 and later. The tax will be levied until $120 million has been collected. 40/ Because of slower than expected development, 1976 estimates are that the $120 million will not be collected until about 1995. 41/ Collections can be granted or loaned to areas affected by coal production and can be used in financing public water, sewer, highway, road, and street projects. 42/

Another 1975 Wyoming law created the Wyoming Community Development Authority, which is authorized to issue up to $100 million in revenue bonds, the proceeds of which are to be used to make loans to local jurisdictions. The loans can be used to provide a wide range of public facilities and services, including water and sewer systems, roads, curbs, gutters, sidewalks, street lighting, parking facilities, schools, airports, hospitals, nursing homes, and public buildings. The proceeds can also provide home loan capital

funds to communities through savings and loan institutions. As a result, loan rates in "boom" areas were expected to drop 2-1/2 to 3 percentage points, enabling more people to qualify for permanent home loans. 43/ However, as of June 1977, the Authority had issued no bonds pending settlement of questions concerning the legality of the Authority under the State constitution. 44/ This is an example of what can be done. Although there is a possibility that the Authority may be found to be unconstitutional in Wyoming, it demonstrates an intent on the part of the State legislature to assist energy-affected communities. Such an authority may be constitutional in other States, and even if unconstitutional in Wyoming, the legislature may find other constitutional means to achieve its expressed intent.

Wyoming also enacted other laws recently intended to aid affected communities. One law increased State sales taxes returned to local governments; 45/ another increased the maximum rates for school district taxes. 46/ To help solve imbalances between tax jurisdictions, such as those that occur when energy development takes place in a county but the greatest effects are on a city, Wyoming amended an existing law to allow cities and counties to combine for public projects voluntarily. 47/

The mayor of one Wyoming community which has been and is expected to be more heavily affected by energy resources development stated that the Wyoming legislation would be very helpful to his community. He stated, however, that the money would probably not be enough to provide all assistance needed by all the communities. 48/

By contrast, another Wyoming mayor stated that he felt his community was able to conquer socioeconomic impacts of energy development generally without help from both the State and Federal Government. 49/

> "What did we do to combat impact? First, we restructured our government to maximize tax dollars and to deal effectively with the daily problems. We converted part-time planners and engineers to full-time planning and engineering departments. We re-evaluated all of our priority items. And we converted the housing and urban development to the community development, where we would have local control instead of federal control. And we took advantage of every revenue source available at a municipal level.
>
> "What lessons have we learned and what suggestions might I have to any people facing

this in any municipality? First, I believe that governments should consolidate rather than isolate and duplicate the planning and resources of all segments of government. That means the states, the counties, the cities and the school districts. We have done this in Wyoming, and I think, because of this cooperative effort, we have made strides. I personally feel that cities and towns should become as independent as possible, and not depend on federal funding. Because the federal funds are never there when you need them the most. And quite frankly, we have never found a pair of scissors sharp enough to cut the red tape. Cities and towns should implement all sources of financing at a local level rather than depend on the state and on the Federal government for grants. Here again, when you need them, many times they are not present. And I believe that state governments should withhold priority items to municipalities in the distribution of any funds, state or federal, under their control. They should withhold the priority on the distribution to municipalities, cities and towns until such time as every city or town has shown that they have taken every means at a local level to take care of their own problems. I think that this shows fiscal responsibility at a local level, and I think that local government, as well as many others, should get away from the concept of a handout. * * * we have practiced what I have preached today. And even with unprecedented growth we are self-sufficient, we are bond free, and I feel that we have conquered impact."

Montana

In 1975 Montana lawmakers passed the highest coal severance tax in the Nation. The tax rate is 20 percent of the selling price of low-grade lignite coal and 30 percent on other coal. 50/ Large amounts of revenue are expected from the tax. One study estimated that by 1985 between $241 million and $1.1 billion in severance taxes will be collected on the coal from the two largest Montana coal producing counties. 51/ Statewide, Montana expects proceeds through 1977 to total $66.6 million; the proceeds are to be distributed as shown in table 5.

Funds will not be used primarily for affected areas, however. About $11.7 million (17.5 percent) will be put in a local impact fund, which will be used to pay the expenses of a coal board and to make grants to affected communities;

$6.7 millio (10 percent) will go for coal area highway improvement, and $2.7 million (4 percent) will be returned to the coal producing counties. After June 1977, the percentage of the severance taxes allocated to the local impact fund will be reduced to about 11.7 percent, reducing the total designated specifically for the coal producing areas to 25.7 percent of the total severance tax collected. 52/

Table 5

Allocation of Montana Severance Tax Funds

| Allocation to | Percent (note 53) | Amount (millions) |
|---|---|---|
| General fund | 40.0 | $26.6 |
| Local impact fund | 17.5 | 11.7 |
| Educational trust fund | 10.0 | 6.7 |
| Coal area highway improvement | 10.0 | 6.7 |
| State equalization aid to public schools | 10.0 | 6.7 |
| Return to the coal generating county | 4.0 | 2.7 |
| Alternative energy research | 2.5 | 1.6 |
| Park funds | 2.5 | 1.6 |
| Renewable resources development | 2.5 | 1.6 |
| County land planning | 1.0 | 0.7 |
| Total | 100.0 | $66.6 |

Other States

North Dakota enacted legislation that created a Coal Development Office which is responsible for disbursing funds collected from two taxes. One is a tax on electricity and gas produced by coal-fired electrical generating plants and coal gasification plants. The first $100,000 collected from each county annually is returned to that county. Revenues above $100,000 are divided between the county and the State.

The other tax, levied at a rate of 50 cents per ton of coal, will increase with rises in the cost of living index. Thirty-five percent of the coal tax will be put in a coal development impact fund, which is expected to total about $4 million by mid-1977. This fund can be used only for grants to political subdivisions that are impacted by extraordinary expenses due to coal or related energy development and are to be used for minimizing social and economic impacts.

Utah also has enacted laws aimed at mitigating socioeconomic effects of projects. The key law allows

developers to voluntarily prepay sales or use taxes. The Governor of Utah has stated that companies will have an incentive to prepay taxes for developing new towns because the companies will not be able to get employees without helping fund community development. Under the Utah law the developer can pay the taxes before installing the equipment on which the tax applies. Taxes will be deposited in a fund which can pay for public projects related to the development. 54/

Legislatures of the other Rocky Mountain States have considered numerous land use, mineral tax, and impact aid bills. Numerous laws have been enacted, including relatively small severance taxes, but none are sufficient in scope to provide significant aid to energy development affected communities.

By Federal agencies

There are many fragmented Federal programs which, although not specifically designed to assist communities affected by energy development, have provided and will continue to provide funds directly or indirectly to them. These moneys are allocated in competition with other needs and the extent to which they are available to energy-affected States and communities depends on statutory or regulatory restrictions on the use of the funds, eligibility of affected communities for the moneys, and the priority of their needs versus those of others.

Nevertheless, Federal programs and projects can and have been used to deal with energy development effects. The study discussed on pages 36 to 37 which identified 131 Rocky Mountain communities that could be most affected by energy resource development showed that during fiscal year 1975, direct Federal aid of $39.2 million was provided to 70 energy-affected communities in Colorado, the Dakotas, Montana, Utah, and Wyoming--the 6 States in which most Rocky Mountain energy development is likely. Federal agencies provided an additional $183.7 million in Federal mineral lease royalties and other indirect aid in these States, at least $20 million of which and an indeterminable amount of the balance benefited energy-affected counties. 55/

Direct funding consists of Federal grants and loans which went directly to energy-affected communities rather than going first to the State government for distribution. Funds received for needed facilities and services from existing Federal programs may, but do not necessarily have to be, the result of increased energy development. The Farmers

Home Administration--which can provide loans in areas with less than 20,000 population for home ownership; community facilities, such as water systems, sewer systems, hospitals, and clinics; and new businesses--provided about $14.5 million of the 1975 direct Federal funding, or about 38 percent. The Environmental Protection Agency; the Department of Health, Education, and Welfare; and the Economic Development Administration furnished the rest. One hundred and sixteen of the above 131 communities had populations of 5,000 or less.

The following table shows estimated fiscal year 1975 direct aid to affected communities by State and by Federal agency. 56/

Table 6

| State | Loans | Grants | Total |
|---|---|---|---|
| | ---------(000 omitted)--------- | | |
| Colorado | $ 3,833 | $ 3,915 | $ 7,748 |
| Montana | 1,688 | 1,238 | 2,926 |
| North Dakota | 3,497 | 8,299 | 11,796 |
| South Dakota | 2,228 | 292 | 2,520 |
| Utah | 853 | 5,322 | 6,175 |
| Wyoming | 252 | 7,770 | 8,022 |
| Total | $12,351 | $26,836 | $39,187 |
| Agency | | | |
| Department of Health, Education, and Welfare | $ - | $ 8,420 | $ 8,420 |
| Farmers Home Administration | 12,351 | 2,116 | 14,467 |
| Environmental Protection Agency | - | 12,456 | 12,456 |
| Economic Development Administration | - | 2,362 | 2,362 |
| Department of Housing and Urban Development | - | 1,482 | 1,482 |
| Total | $12,351 | $26,836 | $39,187 |

Appendix II lists the 20 communities that received the most direct funding--about 70 percent of the total.

Indirect funding includes grants and loans to State and State regional programs which could benefit affected

communities, and royalties and bonuses under the Mineral Leasing Act of 1920, an act which provides, among other things, for the leasing of minerals on Federal lands. Historically, States have used royalties returned to them throughout the State and therefore may consider only increases in these moneys as being available to help affected communities.

Table 7 summarizes indirect Federal funding in fiscal year 1975 for the six Rocky Mountain States in which most energy development is likely to take place. 57/

Table 7

| State | Mineral royalties and bonuses | Other | Total |
|---|---|---|---|
| | (000 omitted) | | |
| Colorado | $33,205 | $39,615 | $ 72,820 |
| Montana | 17,257 | 11,920 | 29,177 |
| North Dakota | 486 | 10,628 | 11,114 |
| South Dakota | 303 | 6,964 | 7,267 |
| Utah | a/5,307 | 14,132 | 19,439 |
| Wyoming | 33,563 | 10,276 | 43,839 |
| Total | $90,121 | $93,535 | $183,656 |

a/Excludes approximately $9.1 million in oil shale royalties under litigation as of February 1977.

Table 8 shows the Federal agencies which provided indirect funds in fiscal year 1975 and their related programs, at least $20 million of which and an indeterminable amount of the balance benefited energy-affected counties. 58/

Table 8

| Agency | Funding (000 omitted) | Programs |
|---|---|---|
| Bureau of Land Management (note a) | $ 90,121 | Minerals Leasing Funds under the Mineral Leasing Act of 1920 |
| Farmers Home Administration | 24,660 | Low and Moderate Income Housing Repair Loans and Community Facilities Loans |
| Department of Transportation | 20,505 | Highway Research, Planning and Construction and Public Lands Highway Grants |
| Law Enforcement Assistance Administration | 15,656 | Comprehensive Planning and Improving and Strengthening Law Enforcement Grants |
| Bureau of Outdoor Recreation | 10,581 | Outdoor Recreation Acquisition and Development Grants |
| Environmental Protection Agency | 8,115 | Air and Water Pollution Control Grants and Waste Treatment Management Planning Grants |
| Housing and Urban Development | 5,409 | Comprehensive Planning Grants and Local Assistance |
| Department of Labor | 4,182 | Employment Grants |
| Bureau of Indian Affairs | 2,850 | Indian Education and Reservation Roads and Bridges |
| Economic Development Administration | 1,577 | Economic Development-Technical Assistance and Grants |
| Total | $183,656 | |

a/Excludes approximately $9.1 million in oil shale royalties under litigation as of February 1977.

In addition to the funds provided in the past, the Federal Government recently increased funds to the States and communities which can be used to aid energy-affected communities.

In August 1976, the Federal Coal Leasing Amendments Act of 1975 (Public Law 94-377) was amended to increase the royalties returned to States from new mineral leases on Federal lands from 37.5 percent to 50 percent. The act provided that the additional 12.5 percent be used by the States and their subdivisions as the State legislatures direct, giving priority to State subdivisions socially or economically impacted by development of minerals leased under the act. The 12.5 percent had previously been paid into a Federal reclamation fund, the moneys from which were available to all western States for irrigation projects. In addition, the act increased the royalties on surface-mined coal from 5 cents per ton to not less than 12.5 percent of the selling price, which was about $8 per ton for the Rocky Mountain area in fiscal year 1976. In fiscal year 1976 mineral royalties paid directly to the Rocky Mountain States were about $107 million. As a result of this act and overall increases in mineral revenues, the Department of the Interior estimates royalties paid directly to the Rocky Mountain States will increase to about $179 million in fiscal year 1979. Interior estimates that under the act a total of about $44 million will be paid directly to the States in fiscal year 1979 that would have otherwise gone into the reclamation fund. Therefore, the major effect of the act was to increase moneys from royalties which will be directly available to the States. These moneys could be used to mitigate the impacts of energy resource development.

In October 1976, the Congress enacted the Federal Land Policy and Management Act of 1976 (Public Law 94-579), enabling the royalties to be used as the legislatures of the States direct, giving priority to subdivisions of the States that had a social or economic impact from development of Federal minerals leased under the act for planning, construction, and maintenance of public facilities, and provision of public services. The act also provided for loans to States and political subdivisions to relieve social or economic impacts occasioned by the development of Federal mineral leasing. Loans can be made up to the anticipated mineral royalties to be received by the recipients for any prospective 10-year period which, in the case of the Rocky Mountain States, will likely be between $1.5 billion and $2 billion for the next 10 years.

Public Law 94-565, also enacted in October 1976, provided for annual payments to be made directly to local governments based on the amount of Federal lands within their jurisdiction. Interior estimated these annual payments to Rocky Mountain local governments at $69 million, or about $621 million from 1977 through 1985.

Besides providing funds, Federal agencies are attempting through the Mountain Plains Federal Regional Council to coordinate Federal efforts to aid energy-affected communities. The Council is one of 10 Federal Regional Councils (FRCs) established by Executive order to assist State and local governments by coordinating Federal programs and operations. The Council is composed of the principal regional officials of the Departments of Labor; Health, Education, and Welfare; Commerce; and Transportation; as well as the Federal Energy Administration, the Community Services Administration, the Environmental Protection Agency, and the Law Enforcement Assistance Administration. The Mountain Plains Council is responsible for Federal Region VIII--the States of Colorado, Montana, the Dakotas, Utah, and Wyoming. It is responsible to the Under Secretaries Group for Regional Operations, composed of Under Secretaries or similar officials from the above and other agencies and chaired by the Deputy Director, Office of Management and Budget.

The Council proposed in November 1974 to the Office of Management and Budget that

--the Federal Government take a larger role in providing front-end funds to mitigate effects of energy development,

--one Federal agency be responsible for coordinating Federal efforts, and

--the Council be given responsibility for assisting the lead agency in identifying effects.

The proposal stated that it was made, in part, so the elected officials from State and local governments would not have to address the more than 1,000 separate Federal programs to receive assistance. In March 1975, the Under Secretaries Group notified the Council that no assignment of a lead agency would be made to coordinate energy effect identification and response. At the same time the Under Secretaries Group told all FRCs that the primary responsibility for mitigating the socioeconomic impacts of energy development rested with the private energy resource developers and with individual State and local communities. Federal

funds that were used to plan for or to mitigate energy-related impacts were to be provided under existing authorities, within established appropriation levels, and allocated in competition with other equally high-priority programs and activities. On energy-related impact problems, FRCs were to operate under then assigned responsibilities, priorities, and workloads using established State and local government working relationships. Significant changes in Federal institutional relationships were not being considered.

The Under Secretaries Group, however, gave the FRCs permission to provide, on request, technical assistance to State and local governments on approaches for mitigating the effects of socioeconomic impacts and to respond to requests from State and local governments for integrated or coordinated funding of categorical programs normally administered by regional offices. Late in 1975, the Mountain Plains Council began a small project to help communities assess their needs and to advise them of possible sources of financial and technical assistance. Although the Mountain Plains Council also assigned FEA lead agency responsibility for all its energy-related activities, there is still no Federal office in the Rocky Mountain area where State and local officials can obtain advice on the availability of all Federal assistance programs and, if necessary, assistance in applying for such aid.

By industry

In a few cases industry has provided financial and other assistance to affected communities. For example, industry provided funds to communities in Sweetwater County, Wyoming, for public projects because the degraded quality of life had caused high employee turnover and productivity decreases. Also, new town feasibility studies were prepared by industry for several areas. In addition, an industry representative worked with the Wyoming legislature in preparing the State's impact funding legislation discussed on pages 40 to 42.

Industry has also provided housing. In Colstrip, Montana, for example, a virtual ghost town a few years ago, an energy developer planned and built community expansion and constructed housing which it rents to its employees. Similarly, several developers in the Gillette, Wyoming, area are constructing homes, but only because high interest rates and labor unavailability have driven away home construction companies.

Although industry has provided some assistance, it is generally reluctant to do so. According to one corporate official,

> "* * * industry should not be cast in the role of government by being responsible for planning and constructing public facilities due to its impact. Government should not expect business to be any better in this role than business expects government to be in the business role. On the other hand, business should--and could--pay its fair share for its impact.
>
> "* * * industry must be willing to freely communicate its plans to government and to pay its fair share of taxes so government can handle the impact problems." 59/

Another corporate official outlined several industry policy changes that he believes are needed if the Rocky Mountain area is to produce the minerals required to meet the Nation's energy needs. The policy changes outlined by this official can be summarized as follows:

--Reinvest a larger share of its profits in the area, especially if the increased production of minerals results in increased costs to the local society or local government.

--Make its development plans available to local governmental units to enhance local and State planning.

--Help plan and fund technical education and the retraining and relocation of skilled workers.

--Spend more money for research on the issue of local impact aimed at specific regional problem solving.

--Help with solutions to social problems. 60/

The official also said that there is too often a lack of coordination and communication between industry and Government and long-range planning between them is either virtually nonexistent or proceeds in adverse directions. He added that achieving coordination and control of growth outlined above will probably require writing land use planning guidelines into law. 61/

## MORE NEEDS TO BE DONE

Major problem areas need to be given more attention. Communities that take positive action on the basis of development plans can incur costs which are lost if development does not take place. No provisions have been made by Government or industry to reimburse communities for losses incurred if resource-development plans change after planning, designing, or construction of public facilities has begun. The major problem area, however, concerns the amount of front-end money available to provide the required public facilities and services.

### Provisions against loss

Faced with possible losses of investment if development plans change or projected population increases are too high, communities are reluctant to begin planning, designing, and constructing public facilities before development begins. This reluctance could be overcome if Government or industry would guarantee to reimburse community investments when development plans change.

If industry changes its mind concerning development plans and State and local governments have already invested in public facilities and services to support that future development, industry could be required to reimburse State and local governments. If, however, planned development does not take place because of Federal or State actions or changes in authorizations or regulations affecting the development, then that government could be responsible financially for its actions.

The Office of Management and Budget told us that it has concluded that a provision against loan is not necessary because community investments should be delayed until resource development is underway.

### Front-end funds

Government and, to a much lesser extent, industry, have provided and will continue to provide funds for housing and public facilities and services. It has not been determined, however, how much more will be needed.

Many factors affect the amount of assistance that will be needed to cope with the effects of rapid growth. The rate of future resource development, which we discussed in chapter 3, is perhaps the variable that most determines the amount of assistance that communities will require.

Other factors bearing on the amount of assistance needed, such as unused existing facilities, building codes, and legal bonding limitations, will vary from community to community. The amount of assistance required can be computed only after the extent and timing of development are known.

Several studies have estimated widely varying per person costs of facilities and services for individual communities experiencing rapid growth. The low and high estimates are $3,121 62/ and $4,892, 63/ respectivity, in 1975 dollars.

Because the extent and timing of development is not known, it is impossible to precisely compute how much money and over what period each community and the total Rocky Mountain area will require to meet the effects. For example, chapter 3 discusses recent events, such as the suspensions of oil shale leases, the withdrawal of the sponsors for a major powerplant, and the continuing uncertainties concerning synthetic fuel and nuclear power development, which could reduce the estimate of increase in population by 1985. However, using available estimates which do not reflect these recent events, a 600,000 increase in population in the six States where most of the Rocky Mountain energy development is likely to take place by 1985, and the per person costs developed in the two studies discussed above, between $1.9 and $2.9 billion in 1975 dollars might be required.

## WHO SHOULD PROVIDE THE ASSISTANCE?

### THE ISSUE

Front-end assistance must be provided. The main issue is: What should be the roles of the States, the Federal Government, and industry in providing this assistance. Alternative courses of action are discussed below.

### Let the States provide the solution

By taking appropriate steps, the States can provide much of the aid that affected communities will need. What the States will accept as their role, however, remains to be seen.

The States have various mechanisms available for raising money and distributing it to needy communities without directly taxing the States' populations. These mechanisms include levying severance taxes on extracted resources; creating a bonding authority to issue special revenue bonds, the proceeds from which can be used to make loans to local governments; using discretionary Federal funds under existing programs; and taking advantage of the increased moneys

available in royalty payments, and loans under the Federal Land Policy and Management Act of 1976, and in annual payments under Public Law 94-565. Severance taxes on energy resources result in the ultimate energy consumer paying for the aid provided to communities.

Rocky Mountain State and local governments could be responsible for providing facilities and services prior to or concurrent with population increases for the following reasons.

--They receive economic benefit from energy development.

--Wyoming and Montana have shown that States can provide a far greater amount of assistance than at present without unduly burdening their taxpayers. In addition, considerable Federal funds in royalties, annual payments, loans, and grants are already available to the States for this purpose.

--Based on the traditional separation of powers and responsibilities, it is mainly a State responsibility to fund public facilities and services. The States have traditionally assumed this responsibility. This is not to say, however, that the Federal Government should not continue to provide some assistance and look for ways to make its existing programs more useful to the States and local governments.

--They can encourage or require greater industry participation through such actions as legislation permitting prepayment of corporate, sales, and use taxes, and by requiring industry performance bonds which would be forfeited if development would not occur due solely or principally to an industry decision.

Prepayment of corporate, sales, and use taxes, such as now allowed by Utah, would provide needed front-end funds. Industry performance bonds would provide State and local governments with insurance against the risk inherent in providing facilities and services before growth occurs. (See p. 56.)

States can take steps to solve the problem of imbalances between tax jurisdictions and can work to convince the respective constituencies of cities, school districts, and counties that all three taxing jurisdictions must join in adjusting local revenue imbalances. Legislation can be passed to allow local governments to voluntarily combine for revenue purposes.

Provide a Federal solution

Many people believe that, because the need for energy is a national one and because much of the development will take place on Federal lands, the Federal Government should assume additional responsibility for aiding States and communities affected by energy resource development. Governors of nine Rocky Mountain States and Nebraska expressed this belief in February 1975 in discussing coal development when they jointly stated:

> "* * * Since the demand for development of Federal coal in the West is a result of national needs, then there is a corresponding national responsibility to insure adequate relief for environmental and socio-ecomonic impact." 64/

Federal programs that have provided aid to Rocky Mountain area communities are not specifically designed to help small communities cope with rapid population growth and are administered by a number of agencies with little coordination. The Federal role could be expanded through current programs, new programs, or a combination of the two.

Current programs could be used to provide greater assistance by designating energy-affected communities for priority funding and/or increasing funding of present programs. The recently enacted legislation discussed on pages 48 and 49 will greatly increase the Federal funds available to help energy-affected areas and has designated these communities as having priority in receiving mineral leasing royalties. However, increasing funding of present Federal programs to assist State governments may not help energy-affected communities unless the States use their discretion to distribute the funds to them. No effective mechanisms exist for the Federal government to guarantee that funds which are given to States will go to communities where impacts occur.

Further designating energy-affected communities for priority funding under present programs without increasing funding could cause a shift of assistance from nonaffected communities also having great needs. If present programs were expanded to help affected communities, a current problem would continue--small communities would still find it difficult to know which of the myriad of Federal programs they might be eligible for and to make necessary applications because of a lack of staff. Designating affected communities for priority funding and increasing funding of present programs still might result in a shift in assistance

from nonaffected communities to energy-affected communities. In addition, the communities would still have the problem of learning about the many Federal assistance programs.

Establishing one Federal office where State and local officials could go to learn which Federal programs they might be eligible for and to initiate application procedures might result in increasing the effectiveness and efficiency of present Federal programs.

New Federal programs could be established to assist local governments to meet their financial needs for the planning, design, construction, and management of public facilities and to help solve the timing problem by guaranteeing to reimburse communities for costs incurred in planning and designing facilities and services when development plans change. Federal assistance could involve direct grants, loans, matching funds, guarantees of private loans, guarantees of local government bonds, or a combination of these techniques.

In 1976, bills (S. 3007 and H.R. 11793) were introduced in the Congress to establish a new program that would assist States, Indian tribes, and local governments affected by the development of Federal resources. The legislation would have established a $1 billion fund to make planning and management grants to States and Indian tribes and loans and loan guarantees to States, local governments, and Indian tribes to assist in providing public facilities and services necessitated by the development of Federal energy resources. The 94th Congress adjourned without passing the proposed legislation.

Increase industry participation

Industry could contribute significantly in helping to meet the socioeconomic impacts of energy resource development in the Rocky Mountain area. Industry could increase its assistance in four major areas--through coordination of development plans with State and local governments, prepayment of taxes where allowed, performance bonds, and guarantees of local debt.

Coordination of industry energy resource development plans with State and local governments would enable the governments to plan, design, and provide for required public facilities and services before development, thus alleviating many of the problems associated with rapid growth.

Prepayment of corporate, sales, and use taxes would help States to provide facilities and services where little or none

existed prior to development. Industry would have an incentive to prepay its taxes in this situation because the likelihood of attracting employees to live and work in an area or to commute to an area without many basic facilities and services is small. Thus, if a company wants people in an area where a suitable infrastructure does not exist, it may decide to prepay taxes to allow State and local governments to provide it. A disadvantage is that prepayment of taxes would increase a company's capital needs and total costs prior to receipt of income on a project.

The posting of industry performance bonds, which would be forfeited if development does not occur due solely or principally to an industry decision, would insure State and local governments against the risk of providing public facilities and services prior to development [illegible] then having industry change its plans and leav[illegible] local governments with unneeded facilities, [illegible]d debts.

Potentially, industry [illegible]ocal debt incurred to build facilitie[illegible] energy resource development. This might [illegible] local governments to borrow from com[illegible] when they might not otherwise qual[illegible] however, could adversely affect a corpo[illegible] capacity since debt guarantees m[illegible]al statements. Therefore, it i[illegible]ld be adopted.

## CONCLUSIONS

Energy development [illegible]veloped and relatively unpo[illegible]rea. New communities would [illegible] existing communities would g[illegible], many communities would lack the financ[illegible]ide required facilities and services. [illegible] assistance until their revenues expanded to mat[illegible]ds of growth.

For reasons discussed on pages 53 an[illegible], we believe that State and local governments should be primarily responsible for providing the necessary facilities and services, but that the Federal Government and private industry should provide some assistance. The States have various mechanisms available for raising money and distributing it to needy communities without directly taxing the States' populations. These mechanisms include levying severance taxes on extracted resources; creating a bonding authority to issue special revenue bonds; using discretionary Federal funds under existing programs; and taking advantage of the increased moneys available in royalty payments and loans under the

Federal Land Policy and Management Act of 1976, and in annual payments under Public Law 94-565. State, county, and local governments can also legislate or otherwise regulate terms and conditions for additional industry assistance. These governments should work together to ensure that funds received from energy development are equitably distributed to energy-affected communities.

It is not industry's responsibility to provide the facilities and services needed because of energy resource development. However, industry does have a strong and continuing responsibility to make its development plans available to State and local governments as soon as possible and to establish and maintain a continuing liaison with these governments to keep each advised of the others' plans. In addition to paying its fair share of taxes, industry is responsible for meeting other reasonable requirements imposed by State and local authorities. These requirements could include the posting of industry performance bonds to be forfeited if development does not occur due solely or principally to an industry decision and industry guarantees of local debt incurred to build facilities needed because of energy resource development.

Although State and local governments should be primarily responsible for providing facilities and services to energy-affected communities, the Federal Government should continue to provide some assistance. Recently, the Federal Government has greatly increased its assistance and will likely provide in excess of $2 billion in royalties, annual payments, grants, and loans to Rocky Mountain States and communities between now and 1985. In addition, the Federal Land Policy and Management Act of 1976 provides for loans to States and communities up to their anticipated mineral royalties for any prospective 10-year period, which in the case of the Rocky Mountain States will likely be between $1.5 billion and $2 billion for the next 10 years.

Increasing funding of present Federal programs to assist State governments may not help energy-affected communities unless the States use discretion in distributing the funds to them. No effective mechanism exists for the Federal Government to guarantee that funds given to States will go to communities where impacts occur. There is no evidence that the Federal Government should interfere in the relations between State and local governments at this time. However, we believe there should be assurances that impacted communities will receive the requisite funds needed to mitigate the socioeconomic impacts of energy resource development.

In view of the substantial Federal assistance now available and State and local governments' inherent responsibilities for providing facilities and services, we believe that the need for additional Federal assistance at this time has not been demonstrated. Moreover, the pace of Rocky Mountain energy resource development and thus the revenues needed to provide facilities and services is uncertain, and recent events indicate a slower pace of development than recent studies anticipated.

If, however, the Congress does wish to enact a program to further help Rocky Mountain communities, we believe that such assistance should be contingent on the States taking actions to meet a minimum level of assistance to energy-affected communities and on the States developing plans to systematically deal with the impacts. This would be necessary, in our opinion, because of the inherent responsibility of the States to help provide the assistance and because of the widely varying levels of assistance States have provided to date. We also believe that before a State is granted assistance it should be required to provide assurances that the assistance will be used to help energy-affected communities.

There is a need, in our opinion, for a Federal "one-stop shopping center" where Rocky Mountain State and local officials can go to determine what assistance they may be eligible for under the many fragmented Federal loan and grant programs which can provide funds to energy-affected areas, and obtain assistance, if necessary, in applying for such aid. We believe that such an office would require only several staff persons and that it could be opened by the Mountain Plains Federal Regional Council--which is responsible for coordinating Federal programs in the six-State area where most significant Rocky Mountain energy development is likely to occur--provided that funds are appropriated for the office or the Council obtains prior and specific congressional approval for the use of funds appropriated to the member agencies.

## RECOMMENDATIONS TO THE UNDER SECRETARIES GROUP FOR REGIONAL OPERATIONS

We recommend that the Under Secretaries Group for Regional Operations:

--Take whatever action may be necessary to open and staff an office where State and local officials can obtain advice on the availability of Federal assistance programs and, if necessary, assistance in applying for such aid. This could be accomplished

under the auspices of the Mountain Plains Regional Council provided the funds are appropriated for such an office or prior congressional approval is given for the use of funds appropriated to agencies that are members of the Council.

--Monitor and periodically evaluate the work of the office and the need for additional Federal assistance to Rocky Mountain State and local communities affected by energy development.

--Direct that any such office established by the Under Secretaries Group prepare an annual report, in close coordination with the Federal Energy Administration, evaluating the need for additional Federal assistance. This report should include information on (1) the status of energy development in the Rocky Mountain area, (2) expected development in the coming year, (3) projected needs of affected States and communities in the coming year, (4) expected levels of Federal, State, and industry assistance, (5) additional assistance needs, if any, and alternative courses to meet those needs, and (6) status and implications of proposed State and Federal assistance legislation. In the event that appropriations or congressional approval are not granted for such an office, the Under Secretaries Group should request the Federal Energy Administration, in cooperation with other responsible agencies, to prepare this type of report.

## RECOMMENDATIONS TO THE CONGRESS

This report is intended to provide the Congress with information on the status, potential, and socioeconomic impacts of Rocky Mountain energy resource development. The report should aid in making national energy decisions and decisions on the need for additional Federal assistance for Rocky Mountain communities that will be affected by such development.

We believe that the need for additional Federal assistance at this time has not been demonstrated. If, however, the Congress does wish to further help Rocky Mountain communities, we recommend that any such assistance be contingent on the States taking actions to meet a minimum level of assistance to communities affected by energy resource development and on the States developing plans to systematically deal with the impacts. The States should be required to clearly demonstrate in these plans that the assistance would actually be used to help energy-affected communities.

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## CHAPTER 5

## AGENCY COMMENTS AND OUR EVALUATION

The Office of Management and Budget, the Department of the Interior, the Federal Energy Administration, the Western Governors' Regional Energy Policy Office, and the Council on Environmental Quality provided formal comments on a preliminary copy of this report which were considered in finalizing the report. (See apps. III through VIII.) In essence:

--The Office of Management and Budget and the Department of the Interior generally agreed with our conclusions, and the Western Governor's Regional Energy Policy Office disagreed with them.

--The Federal Energy Administration said that mitigating socioeconomic impacts of energy resource development would require cooperation and coordination among all Federal agencies, not a massive increase in Federal assistance.

--The Council on Environmental Quality did not believe that the report supported our conclusion that the need for additional Federal assistance at this time has not been demonstrated.

The views of these agencies vary greatly on the nature of the problems and what needs to be done to mitigate them. We continue to believe that State and local governments should be primarily responsible for providing the necessary facilities and services and that the need for additional Federal assistance at this time has not been demonstrated. Discussed below are the major comments on our report, along with our evaluation where differences exist.

### OFFICE OF MANAGEMENT AND BUDGET

The Office of Management and Budget stated that our conclusion that the need for additional Federal assistance has not been demonstrated seems sound in view of the

--powers of the Western States to tax plant and equipment on Federal onshore mineral leases and to impose severance taxes on Federal onshore minerals;

--August 1976 increase from 37.5 percent to 50 percent in minerals leasing royalties going to these States; and

--considerable financial assistance the Western States will receive under the October 1976 legislation which provides direct annual payments to units of local governments for certain Federal lands within their boundaries.

The Office of Management and Budget also supported our conclusion that, if the Congress wishes to enact a new program to further help Rocky Mountain communities, any assistance should be contingent on the States taking actions to meet a minimum level of assistance to communities impacted by energy development.

DEPARTMENT OF THE INTERIOR

Interior said that it has operated for some time under a policy generally in agreement with the thesis of the report--that State and local governments have the prime responsibility for providing the necessary facilities and services to meet the needs of the increased permanent population associated with energy development in the Western States, since these governmental units receive net economic benefits over time from energy development activities initiated by viable industries. Interior said that for the most part the Federal role should be incremental and should consist mainly of more effective coordination of existing programs.

Interior also said that the report indicates great faith in the capability of existing Federal aid programs to meet impact needs but that it did not entirely share that faith because, as we point out in the report, these programs cannot always be tapped flexibly or applied legally to boom situations in a timely way. The Department noted that this situation will be somewhat alleviated by the provisions of the recent Federal Land Policy and Management Act of 1976, allowing States and political subdivisions loans on expected mineral leasing revenues.

We recognize that existing Federal programs are not likely, by themselves, to solve all of the socioeconomic problems of Rocky Mountain energy resource development. We do not believe, however, that a Federal solution is required for all the problems. The Federal Government will likely provide in excess of $2 billion in royalties, annual payments, grants, and loans to Rocky Mountain States and communities between now and 1985. In addition, the Federal Land Policy and Management Act of 1976 provides for loans to States and communities up to their anticipated

mineral royalties for any prospective 10-year period, which in the case of the Rocky Mountain States will likely be between $1.5 billion and $2 billion for the next 10 years. These funds will be available prior to and concurrent with energy resource development and can go a long way to mitigate the socioeconomic impacts of that development.

FEDERAL ENERGY ADMINISTRATION

Although the Federal Energy Administration said that mitigating socioeconomic impacts of energy resource development would not require a massive increase in Federal assistance, it said that communities have neither the financial nor planning capacities to meet the impacts and that the ability of States to meet the impacts has been exaggerated. The Administration noted that the Wyoming Community Development Authority--which is authorized by a 1975 law to issue up to $100 million in revenue bonds, the proceeds of which are to be used to make loans to local jurisdictions to provide a wide range of public facilities and services--had issued no bonds as of December 1976 pending settlement of questions concerning the legality of the Authority under the State constitution.

Our report recognizes that the need for housing and basic public facilities and services often arises before adequate local funding is available to provide them. That is why the main issue addressed in the report is: What should be the roles of the States, the Federal Government, and industry in providing assistance to the communities?

The report shows that until recent years no State raised significant amounts of money to mitigate socioeconomic effects of energy development and that too little action has been taken by most of the States to help their communities. On the other hand, the Federal Government has recently acted to greatly increase its assistance. This, in our opinion, leaves the ball in the hands of the States, and the next move is theirs. Wyoming and Montana have shown that States can provide a far greater amount of assistance than at present without unduly burdening their taxpayers. States can also legislate or otherwise regulate terms and conditions for additional industry assistance. We believe the States should take those actions already available to them before consideration is given to providing additional Federal assistance. Any State constraint,

such as a constitutional limitation, which precludes a State from meeting its responsibilities, can and should be removed by the State if the State believes that the form of assistance being constrained is the best way to go.

Other FEA comments were that:

--Industry's responsibility has been understated, but there is increasing industry recognition that its ability to furnish front-end capital may have to be called on to deal with impacts of energy resource development.

--Federal block grant programs are not oriented toward rural communities with relatively full employment, small percentages of low income families, and large projected population increases. Communities and States are not able to meet eligibility requirements or qualify under formulas for grants to prevent the types of problems the programs are meant to cure. Legislation is needed to correct the inequities.

--It fully agreed that extensive coordination among Federal agencies undertaking energy-related socio-economic projects is necessary but doubted that, without designation of a lead agency to coordinate impact activities on a national basis, the efforts of high level groups, such as the Under Secretaries Group or Federal Regional Councils, will have much effect.

The report points out that industry could contribute significantly in helping to meet the socioeconomic impacts of energy resource development and discusses ways in which industry could increase its assistance. We believe industry has a strong and continuing responsibility to make its development plans available to State and local governments as soon as possible and to establish and maintain a continuing liaison with local governments to keep each advised of the other's plans. In addition to paying its fair share of taxes, we believe industry is responsible for meeting other reasonable requirements imposed by State and local authorities. These requirements could include the posting of industry performance bonds to be forfeited if development does not occur due solely or principally to an industry decision and industry guarantees of local debt incurred to build facilities needed because of energy resource development.

Our report does not include Federal assistance to energy-affected communities that might be provided by Federal block grant programs and thus we cannot address whether these programs are inequitable. Although the report recognizes the limitations of the other Federal loan and grant programs which can provide assistance, we do not believe that the limitations are necessarily inequities and, thus, do not see a need for legislation to correct inequities. The programs discussed in this report were established for specific purposes and the competition for the assistance is great. Those communities that can demonstrate the most need are those that get the assistance. Energy-affected communities have received and will continue to receive assistance under these programs. We believe that effective implementation of our recommendations, together with the Mountain Plains Federal Regional Council's formal assignment of lead agency responsibility to the Federal Energy Administration for its energy-related activities, will help ensure that energy-affected Rocky Mountain communities receive everything to which they are entitled.

WESTERN GOVERNORS' REGIONAL ENERGY POLICY OFFICE

The Western Governors' Regional Energy Policy Office disagreed with our conclusions, saying that they tend to greatly overstate the capacity of existing Federal programs to provide assistance either directly or indirectly to Rocky Mountain communities affected by energy development. In this regard, we reemphasize our position stated throughout the report that the Federal Government's assistance which will likely exceed $2 billion in royalties, annual payments, grants, and loans between now and 1985 can go a long way to mitigate the socioeconomic impacts of that development. In addition, the Federal Land Policy, and Management Act of 1976 provides for loans to States and communities up to their anticipated mineral royalties for any prospective 10-year period, which in the case of the Rocky Mountain States will likely be between $1.5 billion and $2 billion for the next 10 years.

The Western Governors' Office also pointed out that

--there is no Federal program designed to alleviate negative impacts in an integrated comprehensive manner,

--State and Federal programs that could be used to alleviate negative impacts are not coordinated, and

--there is no "one stop shopping center" where State and local officials can obtain advice on the availability of Federal assistance programs.

The Western Governors' Office recommended that (1) energy-affected communities be designated by law to receive special treatment in priority of review of applications, planning assistance, and funds from sources other than the allotted amount of the standard program so as not to take from other nonaffected community applications and (2) a Federal "impact team" be established in each Federal region to be completely knowledgeable about applicable Federal programs; travel to the affected communities to advise local officials of the availability of certain programs; assist local officials in writing out applications for programs; and be knowledgeable of State impact programs and develop a working relationship with each State's impact team.

We have revised our recommendations to generally provide State and local officials with the type of assistance the Western Governors' Office was calling for in its second recommendation. We do not agree, however, with the Office's first recommendation which would require more Federal assistance funds. The Federal Land Policy and Management Act of 1976 has already provided an opportunity for energy-affected communities to obtain priority in receiving mineral leasing royalties. We believe this provision of the act allows the State legislatures to reflect priority concern for energy-affected communities through their allocation of these Federal funds within their States. Further, it provides an explicit vehicle for energy-affected communities to express their needs to the State legislatures and petition for funding relief. We also do not see why energy-affected communities should be designated for special treatment on priority of review of application and planning assistance. All communities should be treated equally; the cause of the need--whether it be energy development or something else--should not enable one community to get an advantage over another community having similar or greater need.

The Western Governors' Office also stated:

> "The conclusion that most socioeconomic impacts ought to be paid for by state programs based on severance taxes does not respond to political reality. Most western states have some form of a severance tax or what amounts to a taxing scheme based upon production.

> Over the years, these revenues have been committed to a wide range of state programs funded by the general treasury for citzens throughout the state. It would appear that states are now expected to redirect those funds or raise the level of taxes to accommodate massive expenses in a few isolated locations within a state."

Our report does not say that most socioeconomic impacts ought to be paid for by State severance taxes. Rather, it states that:

--State and local governments should be primarily responsible for providing the necessary facilities and services.

--The States have various mechanisms available for raising money and distributing it to needy communities without directly taxing the States' populations. In addition to severance taxes, these mechanisms include creating bonding authorities to issue special revenue bonds, the proceeds from which can be used to make loans to local governments and using the substantial Federal funds under existing programs, which will likely provide in excess of $2 billion in royalties, annual payments, grants, and loans to Rocky Mountain States and local communities between now and 1985. In addition, the Federal Land Policy and Management Act of 1976 provides for loans to States and communities up to their anticipated mineral royalties for any prospective 10-year period, which in the case of the Rocky Mountain States will likely be between $1.5 billion and $2 billion for the next 10 years.

We are also saying that States must use their discretion to distribute to affected areas moneys they receive from existing Federal programs and from new measures they take. We are not saying that States must redirect revenues from their existing taxing schemes, but that States should evaluate the pros and cons of such action, and act accordingly.

COUNCIL ON ENVIRONMENTAL QUALITY

The Council said that to support the conclusion that the need for impact assistance has not been demonstrated, the discussion of availability of various direct and indirect sources of Federal funds should include:

1. An estimate of projected needs.

2. A discussion of Federal financial aid broken down by kind and amount of aid provided to whom and for what purposes.

3. A matching of items 1 and 2 to determine what gaps still exist and what programs and recent legislation exist to fill them.

We recognize the importance of matching projected needs against existing Federal aid and the assistance States and industry are providing and can provide. However, the undertaking of such an effort to show that additional Federal assistance is or is not needed would be the responsibility of the executive branch. Since this had not been done, we concluded that the need for additional Federal assistance at this time has not been demonstrated.

Projected needs cannot be determined precisely because of the many uncertainties regarding such matters as the extent of future Rocky Mountain energy resource development, the location of that development, the needs of energy-affected communities, and costs of meeting those needs. Similarly, there are problems in determining how much assistance the States can reasonably be expected to provide. We believe that the States can provide substantial additional assistance. To date the States have provided widely varying levels of assistance; some States have provided a lot, others little. Theoretically, the States could meet the needs several times over; practically, however, we recognize there are constraints.

In addition, we have recommended that the Under Secretaries Group for Regional Operations take a more active role in identifying and assessing the status of energy development and related socioeconomic needs and assistance, and in assisting affected communities in obtaining available Federal aid.

This report puts in perspective the nature of the Rocky Mountain socioeconomic problems, how much it might cost to mitigate them, who is doing what to provide assistance, and what the roles of the States, the Federal Government, and the industry should be. It also supports the conclusion that the need for additional Federal assistance at this time has not been demonstrated.

## CHAPTER 6

## SCOPE OF REVIEW

This report presents the results of a survey of the socioeconomic effects of energy resource development in the Rocky Mountain area. During the survey, we identified existing and alternative Federal, State, local government, and industry actions that might mitigate those effects. We obtained information from the following agencies and organizations.

Federal agency/organization

Council on Environmental Quality
Denver Federal Executive Board
Department of Agriculture:
  Farmers Home Administration
  Forest Service
  Surface Environment and Mining Program
Department of Commerce:
  Economic Development Administration
Department of Health, Education, and Welfare:
  Office of Education
  Public Health Service
Department of Housing and Urban Development
Department of the Interior:
  Bureau of Land Management
  Bureau of Outdoor Recreation
  Bureau of Reclamation
  National Park Service
  U.S. Geological Survey
Department of Labor
Department of Transportation
Environmental Protection Agency
Federal Energy Administration
Federal Power Commission
Law Enforcement Assistance Administration
Mountain Plains Federal Regional Council
Office of Management and Budget
Small Business Administration
Water Resources Council

Environmental groups

Environmental Defense Fund
Environmental Impact Assessment Project
Environmental Policy Center
Friends of the Earth
Northern Plains Resource Council

Industry and research groups

El Paso Natural Gas Company
Exxon Company, U.S.A.
Los Almos Scientific Laboratory
The Oil Shale Corporation
Utah International, Inc.
University of Denver Research Institute
Western Energy Company
Western Gasification Company

State and local government

Colorado
Federation of Rocky Mountain States
Forsyth, Montana
Gillete, Wyoming
Montana
Utah
Western Governors' Regional Energy Policy Office, Inc.
Wyoming

Federal-State partnerships

Four Corners Regional Commission
Northern Great Plains Resources Program
Old West Regional Commission

We reviewed numerous studies, portions of which are discussed in this report. The studies include environmental impact statements, assessments of the impact statements, new town feasibility studies, FEA's Project Independence Task Force reports, and socioeconomic impact studies. Appendix I is a bibliography of Rocky Mountain Area socioeconomic studies.

APPENDIX I

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APPENDIX II

APPENDIX II

## TWENTY COMMUNITIES IN COLORADO, MONTANA, THE DAKOTAS, UTAH, AND WYOMING RECEIVING THE MOST DIRECT FEDERAL AID DURING FISCAL YEAR 1975

| Community | Funding (000 omitted) | Purpose of funding |
|---|---|---|
| Bismarck, N. Dak. | $ 6,431 | Wastewater treatment works construction grants, 15 Department of Health, Education, and Welfare, (HEW) project, including aging programs, maternal and child health service, and family planning projects and development community block and comprehensive assistance planning grants. |
| Mandan, N. Dak. | 3,363 | Cheese processing loan, modular home manufacturing loan wastewater treatment works construction grants, and mental health projects. |
| Meeker, Colo. | 1,762 | Water supply grant and loan and wastewater treatment works construction grant. |
| Belle Fourche, S. Dak. | 1,566 | Hospital loan and wastewater treatment works construction grant. |
| Forsyth, Mont. | 1,312 | Water and sewage loan, 24-unit housing loan, and radio station loan. |
| Lame Deer, Mont. | 1,238 | 8 HEW projects, including Native American Programs and bilingual and Indian education projects. |
| Price, Utah | 1,206 | Wastewater treatment works construction grant and community mental health project. |

| Community | Funding (000 omitted) | Purpose of funding |
|---|---|---|
| Craig, Colo. | 1,169 | 40-unit housing project and water supply grant |
| Carbondale, Colo. | $1,150 | Water supply grant and 20-unit housing projects. |
| Huntington, Utah | 1,133 | Wastewater treatment works construction grant and water and sewage loan. |
| Glenwood Springs, Colo. | 1,065 | Student housing project, wastewater treatment works construction grant, community mental health centers, and supplemental education centers and services. |
| St. George, Utah | 1,017 | Wastewater treatment works construction grant, hospital construction, and upward mobility program. |
| Gillette, Wyo. | 876 | Wastewater treatment works construction grant and electrical contractors motel. |
| Spearfish, S. Dak. | 845 | Rental housing loan, upward mobility program, Teachers Corps, special services for disadvantaged, handicapped teacher education, and mental health training. |
| Rangely, Colo. | 767 | Water supply and wastewater treatment works construction grants. |
| Rock Springs, Wyo. | 738 | Health maintenace, education grants and loans, wastewater treatment grant, HUD community block and comprehensive assistance planning grant. |
| Dickinson, N. Dak. | 675 | Wastewater treatment works construction grant. |

| Community | Funding | Purpose of funding |
|---|---|---|
| Roosevelt, Utah | 630 | Water supply loan and wastewater treatment works construction grant. |
| Beulah, N. Dak. | $ 567 | Water supply and wastewater treatment works construction grants, and 4-unit rental housing loan. |
| Santa Clara, Utah | 461 | Wastewater treatment works construction grant. |
| Grand Junction, Colo. | 415 | Wastewater treatment works construction grant, health maintenance organizations, and cancer cause and prevention projects. |
| Total | $ 28.386 | |

APPENDIX III

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

DEC 29 1976

Mr. Victor L. Lowe
Director, General Government Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Lowe:

This is in response to your request for comments on the GAO proposed draft report on "Rocky Mountain Energy Resource Development: Status, Potential, and Socio-economic Issues." We generally agree with the conclusions of the report that "the need for legislation to provide additional Federal energy impact assistance has not been demonstrated at this time." This conclusion seems sound in view of the powers of the Western States to tax plant and equipment on Federal onshore mineral leases and to impose severance taxes on Federal onshore minerals. The share of minerals leasing act revenues going to these states has also been increased from 37 1/2 to 50 percent. In addition, the Western States will receive considerable financial assistance under legislation passed in the last session of Congress which provides direct payments in lieu of taxes to units of local governments for certain Federal lands within their boundaries.

We also generally support the report's conclusion that if Congress wishes to enact a program: a) any assistance should be contingent on the States taking actions to meet a minimum level of assistance to communities impacted by energy development, and b) any new assistance should be in the form of loans and, the loans should be forgiven only if planned development does not take place because of Federal actions or changes in authorizations or regulations.

We also have the following points on specific aspects of the report:

[See GAO note on p. 86.]

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[See GAO note on p. 86.]

With respect to the discussion of "provisions against loss" on page 58, our analysis of this issue concluded that the public investments ought to be delayed until development is under way. Public facilities excess to need would then rarely occur except when development took place but

APPENDIX III

failed to reach projected levels or when development began but then went bankrupt for some reason.

I trust this information will be useful in preparing your final report. We look forward to receiving a copy of it.

Sincerely yours,

Paul H. O'Neill
Deputy Director

GAO note: Material deleted does not substantially relate to this final report.

APPENDIX IV

# United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JAN 13 1977

Monte Canfield, Jr.
Director, Energy and Minerals Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Canfield:

This will transmit the comments of the Department of the Interior on your draft report to the Congress entitled "Rocky Mountain Energy Resource Development: Status, Potential and Socioeconomic Issues." Our comments are mainly overall and general.

This Department has operated for some time under a policy generally in agreement with the thesis of the subject draft report, that State and local governments have the prime responsibility for providing the necessary facilities and services to meet the needs of the increased permanent population associated with energy development in the Western States, since these governmental units receive net economic benefits over time from energy development activities initiated by viable industries. Department officials also generally agree with the position that for the most part the Federal role should be incremental, and should consist mainly of more effective coordination of existing programs. The Department's position on impact aid is well-known, having been expressed in internal issue papers and in inputs to the development of the Administration impact aid bill.

[See GAO note on p. 92.]

[See GAO note on p. 92.]

Statistics are used to give the lay reader a view of the magnitude of the problems described. Perhaps in time we can look for a more rigorous analysis of variants between areas with statistics allowing of comparisons among data. Several Federal agencies including ours are exploring these needs.

[See GAO note on p. 92.]

The report indicates great faith in the capability of existing Federal-aid programs to meet impact needs. We do not entirely share that faith. These programs cannot be tapped flexibly at regional Federal, State, or local levels. Nor can they generally legally be applied to boom situations in a timely way. This is primarily because eligibility depends on existing rather than projected needs. This situation insofar as it arises from public lands will be somewhat alleviated by provisions of the Federal Land Policy and Management Act of 1976, P.L. 94-579, allowing States loans on expected mineral leasing revenues.

[See GAO note on p. 92.]

We are interested in potential roles for private industry. There needs to be more public dialogue on what impacts the companies who profit from the developments might reasonably be held responsible for.

We trust these comments will be useful to you as you finish your report. We would be especially interested to assist should you plan any further work on the problems in this area of concern.

Sincerely yours,

Albert C. Zapanta
Assistant Secretary - Administration
and Management

APPENDIX IV

Specific Comments on GAO Draft Report to the Congress Entitled "Rocky Mountain Energy Resource Development: Status, Potential, and Socioeconomic Issues"

[See GAO note on p. 92.]

APPENDIX IV

[See GAO note on p. 92.]

Page 11--In the section "Amount and Location" of Chapter 3, statistics are used which, in our opinion, cannot be substantiated. For example, statistics in the statement: "This region contains an estimated 1.5 trillion tons, 160 billion of which are classified as reserves." Such a statement could lead Congress and other readers of the report to erroneous conclusions as to the availability of reserves of coal, economically exploitable, in a precise location.

Page 15--The discussion of coal slurry pipelines does not mention the problem of water availability, nor the conflicts associated with exporting water from a semi-arid State.

[See GAO note on p. 92.]

Pages 21 to 24--The auditors failed to mention two major deterrents to the development of oil shale: (a) lack of offsite disposal legislation; and (b) present violation of ambient air quality standards with the existing environment.

Page 26, second paragraph--Because water demand is cited as an environmental factor in a previous discussion of coal-fired powerplants, coal-gasification processes, and oil-shale conversion, it would be appropriate to mention it in the geothermal context. In producing electricity, the water consumption for condenser cooling is about 1.8 gals/kwhr or 527 gals/BTU X $10^6$, more than three times the consumption of a fossil-fueled generating station on a comparable energy output basis.

[See GAO note on p. 92.]

- - - - -

The following observations, relating particularly to coal resource development, are submitted to assist the auditors in refining their report:

Page 13, last paragraph--The statement: "The long-term market for Northern Great Plains coal is less certain." is significant. Once sulfur-removing technology is perfected, midwestern and Appalachian coals, with higher sulfur content, will be able to compete. Sulfur removal technology is being tested in the prototype stage, and there is a reasonable probability that the equipment will be commercially marketed well before 1985. The effect of this new technology should be to reduce the demand for coal. This may be casting a shadow on attempts to plan for the region based on long-term coal demand forecasting. In other words, it is precisely the conflict between the "clear and broad market" for the immediate future (start of paragraph) and the "less certain" long-term market (end of paragraph) that makes social planning in the area so difficult and risky.

APPENDIX IV

[See GAO note.]

GAO note: Material deleted does not substantially relate to this final report.

FEDERAL ENERGY ADMINISTRATION
WASHINGTON, D.C 20461

DEC 16 1976 OFFICE OF THE ASSISTANT ADMINISTRATOR

Mr. Monte Canfield, Jr.
Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Canfield:

Contained in this letter are the Federal Energy Administration's (FEA) comments on the draft report entitled "Rocky Mountain Energy Resource Development: Status, Potential, and Socioeconomic Issues." The comments reflect the consideration of the several offices involved in socioeconomic impacts projects both in Washington and in Denver.

While I will let most of the comments speak for themselves, I feel it is important to highlight one factor. We feel an excessive amount of time and money has been spent at the Federal level frequently duplicating earlier efforts in studying rather than mitigating energy-related impacts. FEA's concern is to see that useful guidance and tools for solving socioeconomic impacts problems arise from the money it spends. The solutions will not require a massive increase in Federal financial assistance to States. It will require cooperation and coordination among all Federal agencies and technical expertise to assure that useful products are developed as a part of projects, and that national energy policies are not contradicted by national programs and block grant requirements.

General Comments

[See GAO note on p. 100.]

[See GAO note on p. 100.]

2. Approaches which communities may take to meet their financial requirements are not explained. The truth is that while communities want very much to maintain their independence from other governmental entities, they have neither the sophisticated financial nor planning capacities to do so.

3. The ability of States such as Wyoming and Montana to meet the socioeconomic demands of ERD has been exaggerated. While the States desire to make ERD a beneficial enterprise, the fact is that they do not find the revenues from the Mineral Leasing Act and other existing legislation adequate to their needs. Innovative financing mechanisms, such as the WCDA, have been held up in the courts awaiting decisions concerning their constitutionality. The WCDA has yet to issue its first bonds. Colorado's ability to issue debt is severely constrained by constitutional limitations.

4. Industry's responsibility has been understated. Energy development firms do benefit economically from their activities in these remote areas. If they were not going to benefit, they would not participate in this development. It is not only in the best interests of these companies to reduce the turnover rate of their work forces by improving living conditions, but it is their responsibility to provide such technical and financial assistance as they are able to meet the front-end costs to the community of the consequences of energy resource development. It is, of course, industry's position that if it does shoulder such costs, they should be passed on to the consumers of the energy which they produce.

Last August, FEA held a workshop on financing and structural alternatives for solution of socioeconomic problems resulting from ERD. Many of the industry representatives present expressed unwillingness to finance community development directly, but a willingness to assist communities if all other financial and structural means available to communities had been exhausted. There is increasing industry recognition that its ability to furnish front-end capital

APPENDIX V

may have to be called upon to deal with impacts of energy resource development.

5. Industry desires a greater Federal involvement in the resolution of energy-related socioeconomic problems. The lack of certainty surrounding energy development projects creates a lack of certainty regarding the location, timing, and scale of community growth. In this environment, industry is loathe to make several capital investments. Federal policies and regulations determine the certainty of energy facility siting and the ability of potentially impacted communities to plan ahead and develop financial capability for supplying public facilities and services when they are needed.

Federal block grant programs are not oriented toward rural communities with relatively full employment, small percentages of low income families and large projected population increases. Communities and States are not able to meet eligibility requirements or qualify under formulae for grants to prevent the types of problems the programs are meant to cure

[See GAO note on p. 100.]

Legislation is required to correct the inequities in the block grant program * The Joint Funding Simplification Act of 1975 is not sufficient. In addition, increased articulation of national energy policy would enhance the ability to deal with socio-economic impacts.

6. We fully agree that extensive coordination among the disparate Federal agencies undertaking energy-related socioeconomic projects is necessary. We doubt that without the designation of a lead agency the efforts of high level groups such as the Undersecretaries Group or regional FRC's (which have no authority to commit funds) will have much effect. The Denver FRC's function is to act as a clearinghouse. To give it any more authority would add to existing bureaucracy by interposing a mid level agency between the States and the Federal agencies. (see p. 75) The Denver FRC has formally assigned FEA the lead role for energy relat socioeconomic projects.

[See GAO note on p. 100.]

*[See GAO note on p. 100.]

[See GAO note on p. 100.]

FEA's 1976 National Energy Outlook (NEO) suggests that the figure of 560 million tons of coal to be mined in the western States in 1985 is much too high. FEA's current estimate is closer to 390 million tons.

[See GAO note on p. 100.]

Additional specific comments are set forth in Attachment A of this letter.

If you have any questions about these comments or wish to discuss them further, please contact Roger Feldman, Deputy Assistant Administrator for Finance and Environment.

Sincerely,

William G. Rosenberg
Assistant Administrator
Energy Resource Development

Enclosures

APPENDIX V

ATTACHMENT A

Specific Comments

page

[See GAO note on p. 100.]

ix 2nd Paragraph. Most States (especially Colorado) are constitutionally constrained in the issuance of debt.

x Siting legislation might well raise the level of certainty necessary to minimize impacts.

[See GAO note on p. 100.]

20 The discussion of synthetic fuels starting on page 20 cites an earlier GAO report on synfuels. That report was severely criticized by ERDA and others for leading to conclusions without sufficient analysis or data to justify those conclusions. The criticism was valid. Further dissemination of these unfounded conclusions

APPENDIX V



should not occur unless qualified by a clear statement that they constitute GAO opinions, which have been subjected to strong and continuing disagreement by others who have pointed out their lack of an analytical basis.

21 [See GAO note on p. 100.]

Thirteenth line, substitute "between $9 and" for "some at $15 to."

[See GAO note on p. 100.]

3

[See GAO note.]

64 Prepayment issue. Illegal in some States; industry does not like it.

[See GAO note.]

74 First sentence - Disagree for reasons stated in general comments.

Second paragraph - Emphasize the time factor and that industry will be requiring some infrastructure expansion to meet its own needs.

76 First paragraph. Agreed, as long as State plans are a part of that.

GAO note: Material deleted does not substantially relate to this final report.

APPENDIX VI

**Western Governors' Regional Energy Policy Office**

New Mexico • Colorado • Utah
Arizona • Nevada • Nebraska • Montana
Wyoming • North Dakota • South Dakota

4730 Oakland Street
Denver, Colorado 80239
Phone — 303/371-4280

November 18, 1976

Mr. Monte Canfield, Jr.
Director
Energy and Minerals Division
United States Gernal
Accounting Office
Washington, D. C. 20548

Dear Mr. Canfield:

I believe the problems of socioeconomic impact should not be viewed looking down from above, but should be viewed while standing in the shoes of a bewildered small town mayor, who holds the office because no one else will take it and who is fully employed running the local grain elevator. He has just learned that his little town of 243 people will have a new coal mine and a 1250 megawatt electric generating plant located four miles west of town.

He didn't ask for this development and would prefer it didn't come to complicate his life and that of the community. Where does he turn for help is his first question. He may be dimly aware that there are federal agencies that have been around a long time, such as the Farm Home Administration and HUD that some communities have used over the years, but he had never experienced the filling out and then amending and re-amending of application forms, the countless telephone calls and the trips to Bismarck and Denver that seem to be required to obtain assistance in any form from a federal agency.

Now, the mayor finds that he is expected to be a full time, but unpaid city official knowledgeable in planning, engineering, financing, grantsmanship and public relations with an intimate acquaintanceship with the actors on the county, state and federal government stages. Where does he start in this guessing game, and why did he take the office of mayor in the first place?

The federal programs were designed for situations that could be treated at leisure and over a period of years in preparing plans and applications for a specific project. But impacted communities are a different breed of cats. Their problems arrive in cascading overwhelming gobs. The electorate and officials are frightened by the immensity and variety of the problems and the telescoped timetable to cope with them.

"Economic benefits" are used as the bait to get public acceptance of the new energy development just outside of town. Yet every taxpayer knows his property valuations and taxes will be forced up; loan money will be quickly soaked up, and interest rates will rise; the little family store will be forced out of business by the supermarket; the local farmers will find farm labor available

only at union scale; the retirees will find housing rentals going beyond their ability to pay; the dust will hang in the air as streets go to pieces under heavy trucks or are torn up to lay sewer and water pipes that will soon deliver and take away water and sewage at rates greatly above what they were in the tranquil days of good living. The list goes on and on, but it illustrates the difficulty the unpaid mayor will have in convincing his fellow citizens that the new energy development outside of town is bringing them economic benefits, and they should be happy to absorb the increased costs that go along with them.

The mayor will soon find too many typical situations, which will make it too costly or too inconvenient to use so-called impact alleviating federal programs because:

1. There is no federal program designed to alleviate negative impact in an integrated comprehensive manner, only to deal with narrowly defined problems.

2. Federal programs are designed to shuffle paper, take time, require advance approved planning and are not concerned with negative energy development impact as such. This requires formidable outlays of capital for planning, which may satisfy one federal program after many time consuming revisions, but may not satisfy another federal program. For towns in the northern climes with only a six month outdoor constructive season, these delays can turn into years before work is actually begun and completed. Delays cause so much added cost from inflation that advantages of a federal program are easily wiped out before the bureaucrats get around to approving it.

3. Most federal programs allot a given amount of assistance to a state with no priority given to the urgency of an impact situation.

4. There is not coordination between state and federal programs that could be used to alleviate negative energy impact.

5. There is no "one stop shopping center" where the mayor can go to get complete assistance from all federal program administrators, but rather the old guessing game is played whereby the mayor may find help if he can guess where it is or who has it for him.

My strong recommendations are that:

1. Energy impacted communities be so designated by law to receive special treatment in: a) Priority of review of application, b) Planning assistance, c) Funds from sources other than the allotted amount of the standard program so as not to take from other non-impacted city applications.

2. That a federal "impact team" be established in each federal region to: a) Be completely knowledgeable about applicable federal programs, b) Travel to the impacted communities to advise local officials of the availability of certain programs, c) Assist local officials in writing out applications for programs to eliminate the back and forth

APPENDIX VI



paper shuffling that is inherent in receiving application approval. d) Be knowledgeable of state impact program and develop a working relationship with each state's "impact team."

The revelation on page 54 of the draft report "Rocky Mountain Energy Resource Development:" is a shocking revelation of the USG's lack of understanding or insensitivity of the reason (service) for federal agencies to exist. I can understand a failure to provide an "impact team" but to refuse to designate a lead agency is to openly assure the failure of any federal effort. It is noteworthy that when a 1250 megawatt electric generator plant was built near little Wheatland, Wyoming, the project manager for the energy company reported that not a single federal program was worth using for many of the reasons listed above.

The draft report does not treat some of the serious problems that need treatment such as:

1. Impacts that occur across a state line from the energy development.

2. The handling of situations where a community must be built where none is now.

3. The industry responsibility where two or more industries are causing negative impact in a political subdivision.

4. Impacts that occur many political subdivisions away from development, and even states away, such as the negative impact of unit coal trains.

The mayor of a small town suddenly impacted by large energy development is the drowning man in the middle of a wide river in the black of night. A federal bureaucrat throws out a hundred feet of rope and advises the drowning man to swim around until he finds the end. If the drowning man should accidentally find the end of the rope, he is advised by the distant bureaucrat on the river bank that if the drowning man can prove that he has done all he can to help himself and provided the drowning man is a citizen in good standing, the bureaucrat might tug gently on his end of the rope.

Impacted communities' problems are shaded from severe to slight as the size of the communities increase. Large cities have the capacity to gracefully absorb impact problems. Small towns do not.

Sincerely yours,

William L. Guy

William L. Guy
Staff Director

WLG:sdsk

APPENDIX VII

Western Governors' Regional Energy Policy Office

New Mexico • Colorado • Utah
Arizona • Nevada • Nebraska • Montana
Wyoming • North Dakota • South Dakota

4730 Oakland Street
Denver, Colorado 80239
Phone — 303/371-4280

December 2, 1976

Mr. Monte Canfield, Jr.
Director
Energy and Minerals Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Canfield:

Thank you for the opportunity to respond to the draft report to the Congress of the United States, entitled "Rocky Mountain Energy Resource Development: Status, Potential, and Socioeconomic Issues."

This office wishes to express the concern that the report has not examined certain subjects in depth, and therefore erroneous conclusions have been drawn from partial evidence which may be correct to a point but not typical of the norm. Other conclusions are highly subjective and appear to be dictated by earlier GAO policy recommendations rather than new evidence. I wish to comment on seven points, as follows:

1. It is my concern that the conclusions drawn in the report tend to greatly overstate the capacity of existing federal programs to provide federal assistance directly or indirectly to communities affected by energy development. The fact is that very few of the federal assistance programs have been found useful to mitigate impacts associated with energy development.

   An examination of a Federal Energy Administration Region VIII report, dated May, 1976, related to socioeconomic impacts and federal assistance in energy development-impacted communities conclusively demonstrates serious deficiencies in federal programs. The FEA's report reflects a summary of both the direct and indirect federal funding granted the six states of Federal Region VIII in FY 1975.

   Many of the impacted communities noted in the FEA report have been seeking federal assistance in some cases for the last five years. Yet the amount of dollars distributed to these communities is so insignificant that any conclusion suggesting that existing federal programs could provide funds cannot be based upon this record. Further, there would appear to be little hope for local governments unless Congress takes a strong hand in directing federal agencies to not only coordinate between themselves but require a meaningful coordination with the executive branch of state government.

APPENDIX VII



[See GAO note on p. 107.]

3. The conclusion that most socioeconomic impacts ought to be paid for by state programs based on severance taxes does not respond to political reality. Most western states have some form of a severance tax or what amounts to a taxing scheme based upon production. Over the years, these revenues have been committed to a wide range of state programs funded by the general treasury for citizens throughout the state. It would appear that states are now expected to redirect those funds or raise the level of taxes to accommodate massive expenses in a few isolated locations within a state.

   The conclusion appears to ignore the historical view that natural resources belong to all the people of the state and, unlike local property taxes, cannot be expected to be distributed to solve localized problems in total. On the other hand, states have never requested a "free ride," paid for by the federal government and have advocated a responsible local taxing effort to help resolve socioeconomic impacts.

4.

[See GAO note on p. 107.]

Recent changes encompassed in Section 317(c) of the newly enacted Federal Land Policy and Management Act of 1976: PL 94-579 restrict

use of mineral revenues advanced to states to impacts associated with development of mineral covered by the Mineral Leasing Act of 1920, as amended. Thus, in the case of New Mexico, the mineral revenues advanced from the production of petroleum products and coal cannot be used elsewhere in the state where, for example, the major impacts are occurring due to uranium production.

In the case of North Dakota, the total revenues projected for the state are expected to reach $1.2 million annually by 1979. However, a conservative estimate of the cost of necessary public works in the next 10 years exceeds $200 million.

6.

[See GAO note on p. 107.]

It is our belief that the major constraint on utilization of western coal is the capacity of the existing railroads to handle additional unit trains.

7. The arguments related to coal conversion and extensive coal gasification development seem to make the case for government financial assistance for commercial development. However, the conclusion says GAO believes that government financial assistance for commercial development is not warranted at this time. The Western Governors, as a group, have gone on record in support of federal financial assistance for the development of synthetic fuels commercialization. The only qualification interjected by the Western Governors was for smaller pilot plants for oil shale conversion due to questionable technology at this time.

In view of the significance of this report, I would respectfully request greater in-depth research be completed to provide Congress with enough

detail to insure a better balance of information is made available to guide necessary decisions.

Sincerely,

Donald A. Rapp
Resource Planner

DAR/acl

cc: Ralph Hovda

GAO note: Material deleted does not substantially relate to this final report.

APPENDIX VIII

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

DEC 1 ∪ 1976

Dear Mr. Eschwege:

We have reviewed the proposed draft report to the Congress on "Rocky Mountain Energy Resource Development: Status, Potential and Socioeconomic Issues."

[See GAO note on p. 112.]

Otherwise we find the analysis inadequate, and often misleading, in supporting the conclusion that the need for impact assistance has not been demonstrated. We recommend against publication at this time without major revisions responsive to the questions raised in our detailed comments (enclosed).

Sincerely yours,

Steven D. Jellinek
Staff Director

Mr. Henry Eschwege
Director
Community and Economic
Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Enclosure

The following comments are directed primarily toward the digest and how the statements contained therein are supported by the text.

[See GAO note on p. 112.]

iii. To support the conclusion that the need for impact assistance has not been demonstrated, the discussion of availability of various direct and indirect sources of Federal funds should include:

1. an estimate of projected needs, otherwise how can one assess whether or not sufficient funds are currently being made available;

2. the discussion of Federal financial aid should be broken down by kind and amount of aid provided to whom for what purposes;

3. match items 1 and 2; what gaps still exist; what programs and recent legislation, etc. exist to fill them;

[See GAO note on p. 112.]

In the analysis, it is important to point out that although the western states have attempted to respond to the impacts with various pieces of legislation, the legislation has yet to be tested to determine how effective it will be in allocating monies to meet the needs.

vi. It is indeed desirable for industry to make its development plans available to State and local governments. What's the incentive for them to do so; how reliable and useful are their estimates in predicting inmigration?

[See GAO note on p. 112.]

Perhaps it would be appropriate to add a recommendation that Federal agencies dispensing assistance monies under the coal amendments, Organic Act and Forest Service Management Act, implement procedures for determining how these funds are used in mitigating development impacts.

Chapter 3

[See GAO note on p. 112.]

Page 13, para 1. Preparation of the environmental impact statement does not prevent or delay the development of Federal coal nor do legal questions result from the requirements of NEPA. This statement displays poor understanding of the EIS process.* In the case of western coal, a number of factors delay development, not the least of which have been the policies of the Interior Department. Legal questions and delays can arise from non-compliance with the Act, challenges to the adequacy or completeness of the document, its consideration of alternatives, or opening up the process to public scrutiny.

[See GAO note on p. 112.]

* ENVIRONMENTAL IMPACT STATEMENTS: An Analysis of Six Years' Experience by Seventy Federal Agencies. Report of the Council on Environmental Quality, March 1976, is enclosed for your information on this issue.

Chapter 4

[See GAO note.]

Page 34. A discussion of "decline" issues is missing. What happens to the community who received loans and loan guarantees for infrastructure investment and is left in 20 years with a diminished revenue base?

[See GAO note.]

GAO note: Material deleted does not necessarily relate to this final report.

## PRINCIPAL OFFICIALS RESPONSIBLE FOR ADMINISTERING ACTIVITIES DISCUSSED IN THIS REPORT UNDER SECRETARIES GROUP FOR REGIONAL OPERATIONS

| | Tenure of office | |
|---|---|---|
| | From | To |
| CHAIRMAN: | | |
| James C. McIntyre, Jr. | Mar. 1977 | Present |
| ACTING CHAIRMAN: | | |
| James C. McIntyre, Jr. | Jan. 1977 | Mar. 1977 |
| CHAIRMAN: | | |
| Paul H. O'Neill | Dec. 1975 | Jan. 1977 |
| **DEPARTMENT OF THE INTERIOR** | | |
| SECRETARY: | | |
| Cecil D. Andrus | Jan. 1977 | Present |
| Thomas S. Kleppe | Oct. 1975 | Jan. 1977 |
| **FEDERAL ENERGY ADMINISTRATION** | | |
| ADMINISTRATOR: | | |
| John F. O'Leary | Feb. 1977 | Present |
| ACTING ADMINISTRATOR: | | |
| Gorman C. Smith | Jan. 1977 | Feb. 1977 |
| ADMINISTRATOR: | | |
| Frank G. Zarb | Dec. 1974 | Jan. 1977 |