STUDY BY THE STAFF OF THE U.S.

General Accounting Office

Mitigating Socioeconomic Impacts Of Energy Development

A range of options and resources from local, regional, State, industrial, and Federal sources are available and being used by communities to plan for and/or mitigate adverse effects of new energy development or economic deterioration. However, the ability of some communities to address these economic problems may be affected by funding reductions in some Federal programs under the President's economic recovery program. Faced with these cutbacks, communities will have to depend more on alternate sources, including internally generated revenues and State and industry funding.

It is important that State governments work with communities and regional organizations to better understand impact assistance needs, remove unnecessary legislative and regulatory barriers to revenue generation, encourage industry to share in the cost of mitigating impacts on a site-specific basis, and recognize energy impact assistance needs in establishing State funding priorities.

The Federal Government, in determining the type and extent of Federal assistance to energy-impacted communities, needs to consider factors such as State and local governments' willingness to use resources available to them, including Federal mineral leasing revenues; the amount of industry assistance; and the difficulty in distinguishing the impacts caused by energy development from those caused by other types of economic development and the need to have separate Federal programs tied to the cause - energy development.

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P R E F A C E

The Nation's projected increased energy development activities within the next decade will to varying degrees affect the communities in which these activities will take place. The influx of workers and their families could cause changes in the social structure and life styles and could impose economic hardships, since the need for public facilities and services would arise before adequate local revenue sources exist within the area.

This study provides information on energy resource development and the efforts of States and local communities in the Rocky Mountain, Appalachian, and coastal regions to deal with the related social and economic impacts. It also provides information on the range of options and resources generally available to States and local communities from local, State, industry, and Federal sources to plan for and mitigate the adverse effects of energy development. This information was obtained first-hand through onsite visits and interviews with State, local, and Federal officials and private industry involved in mitigating socioeconomic impacts.

We undertook this study because the Federal role in assisting communities impacted by energy development has been a recurring theme in the Congress.

During our study, however, circumstances changed regarding the Federal role in energy impact mitigation. Under the President's economic recovery program, reductions in funds in fiscal year 1982 for grants to States and local governments totaling about $18.8 billion resulted from eliminating some programs, consolidating others into block grants, and reducing funding for others. The two programs specifically targeted for energy-impacted communities--the Energy Impacted Area Development Assistance Program and the Coastal Energy Impact Program--had a significant portion of their fiscal year 1981 funds rescinded. In addition, according to program officials, no funds have been appropriated for fiscal year 1982, and no funds will be requested for either program for fiscal year 1983.

Faced with these reductions in Federal assistance, communities will have to depend more on alternate sources. It is important that State governments work with communities to develop an understanding of their needs, remove unnecessary legislative and regulatory barriers to revenue generation, encourage industry to share impact mitigation costs, and establish State funding priorities which recognize the needs of energy-impacted communities.

At the Federal level, even though the energy-impact assistance programs are currently phasing out, questions about the appropriate Federal role remain and should include considerations such as

--the willingness of State and local governments to use their existing sources of revenues, such as severance

tax and Federal mineral leasing revenues, to mitigate impacts from energy development;

--the amount and type of assistance given to regions impacted by boom and bust cycles of energy development that are currently faced with a deteriorating economy versus that given to regions currently experiencing impacts of energy development;

--the difficulty of distinguishing the impacts caused by energy development from those caused by other types of economic development and the need to have separate Federal programs tied to the cause--in this case, energy; and

--the amount of assistance provided by industry, both through demands placed on it by State and local laws and regulations, and through voluntary contributions to mitigate socioeconomic impacts.

This study is being provided to committees and Members of the Congress and others concerned with the social and economic impact of energy development. In addition, copies will be made available to interested persons on request.

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D I G E S T

The current emphasis on accelerating the development of the Nation's energy resources has heightened concern in some communities and regions of the country about their ability to mitigate the social and economic effects associated with such development. The Federal role is integral to this issue because of policies affecting the pace of energy development and programs providing impact mitigation assistance.

Over the past few years, Federal energy impact assistance has been a recurring theme and periodically the Congress has asked for GAO's views on the problems faced by impacted communities and the Federal role in helping to mitigate these problems. In light of this, GAO wanted to know how three energy rich regions--Rocky Mountain, Appalachia, and coastal zone--were responding to the current and expected impacts of energy development. This report addresses resource development, expected impacts, and Federal, State, and local resources available to plan for and mitigate the impacts in the three regions.

Since the initiation of the study, the direct Federal role in assisting energy-impacted communities has changed. The two programs established to assist energy-impacted communities had a significant portion of their fiscal year 1981 appropriations rescinded under the Reagan administration's economic recovery program. In addition, according to program officials, no funds have been appropriated for fiscal year 1982, and no funds will be requested for fiscal year 1983.

ATTITUDES AND RESPONSE TO ENERGY DEVELOPMENT VARY AMONG REGIONS

Increases in energy development could result in population increases having both beneficial and adverse impacts. Energy development can bring with it economic prosperity in the form of increased employment, higher income, and an

increased tax base. Development may also cause adverse impacts if local governments cannot accommodate the population increases associated with the development. The need for housing and basic public facilities and services, such as sewers, roads, police, fire departments, parks, health care, and schools often arises before adequate local funding is available.

Because energy development is resource-tied, however, communities situated near these resources face uncertainties as to the timing and pace of development. Also, there are differences in the ability and willingness of States and communities to address the impacts. These differences appear not only among the three regions GAO reviewed, but also among communities and States in a single region. Some communities are better prepared than others to absorb population increases and to deal with the social and economic problems which result.

The severity of impacts depends on such site-specific factors as: local population size and growth rates; population density in the host county and surrounding areas; proximity to regional centers of population; availability of service and retail businesses; and local institutional capabilities to plan for, manage, and finance necessary infrastructure facilities. The Rocky Mountain area and portions of the coastal zone are looking for ways to control development. In contrast, Appalachia and other parts of the coastal zone, which have accommodated energy development during past decades, are concerned with their social and economic health because of out-migration and/or deteriorating infrastructure. These areas are soliciting economic development, including energy, to raise revenues to deal with existing problems.

GAO's review led to the following overall observations.

OBSERVATIONS

--Communities in all three regions GAO reviewed are or have been impacted by energy or other types of economic development. Because of population shifts associated with the boom and bust cycles of this development, however, some communities have been more adversely impacted than others.

--The types of impacts experienced by these communities are generally the same whether they are caused by energy or some other type of development. In addition, some communities have been subjected to several types of development. Therefore, it is difficult to distinguish the impacts caused by energy development from those caused by other types of economic development.

--Despite the billions of Federal and State dollars which have been spent to mitigate the impacts of economic development, various studies estimate the needs of communities impacted by energy development at $440 million to $80 billion. At the same time, new energy development will spur population growth and generate further needs for housing and public facilities and services.

--While the extent of increased energy development in the Rocky Mountain, Appalachian, and coastal regions is dependent on many factors, Rocky Mountain will probably be the most affected. In this region, communities are faced with an upswing in development, particularly in oil and gas in the Overthrust Belt and Williston Basin areas. Some Rocky Mountain areas, such as in the southwestern corner of Wyoming, are also subjected to the aggregate impacts of many types of development such as coal, oil, gas, and trona. The pace of synthetic fuels development, however, is much slower than anticipated.

--Appalachian communities have been concerned with maintaining their social and economic health in the face of existing problems caused by the significant unemployment and resultant out-migration which occurred during 1940-70. Although this trend was reversed during the 1970s, much of Appalachia, particularly the central portion, is still faced with a per capita income below the national average. Appalachian States anticipate impacts from synthetic fuels development. For the near future, however, development is expected to be confined to a few counties in Kentucky and West Virginia, and therefore, the impact will probably not be wide-ranging.

--Unlike the Rocky Mountain and Appalachian areas, the coastal zone cannot be characterized as one distinct region. It hosts a myriad of energy activities which vary in

size, type, and intensity. The impacts of this development and the local community's ability to deal with it are also wide-ranging. While some areas of the coastal zone, such as California, are attempting to control energy development and its impacts through siting laws, other coastal areas, such as Louisiana, are encouraging development in order to upgrade existing facilities and services.

--Communities in all three regions have utilized a variety of Federal programs to meet their needs. Most of this assistance was available under categorical programs such as housing and waste-water treatment. A relatively limited amount of funds was available under two programs--the Energy Impacted Area Development Assistance Program and the Coastal Energy Impact Program--which were specifically targeted to energy impacted communities. Under the President's economic recovery program, reductions in funds for grants to States and local governments totaling about $18.8 billion ($105.0 billion in fiscal year 1980 to $86.2 billion in fiscal year 1982) resulted from eliminating some programs--including the two energy impact assistance programs--consolidating others into block grants, and reducing funding for others.

--Termination of the two programs specifically targeted to energy impacted communities probably will not in itself significantly affect the economic development of energy impacted communities, because of the relatively limited amount of funds. The Energy Impacted Area Development Assistance Program provided $69 million to a total of 23 States over the course of 3 years. The funds were usually used in combination with State and/or other Federal programs. While the coastal zone program was a larger program--$351 million over 5 years--about 30 percent of the total funds went to Louisiana for projects to upgrade its deteriorating and/or inadequate public facilities. Most other States used the funds primarily for planning.

--Faced with cutbacks in Federal assistance, communities will have to depend more on alternate sources, including internally generated revenues and State and industry funding. For various reasons, some

communities will find it more difficult than others to use one or more of these sources. For example, State-imposed constraints on borrowing, jurisdictional problems, and competing needs for State assistance vary markedly from one State to another.

--State governments should take the lead and work with local governments and regional organizations to better understand impact assistance needs, remove unnecessary legislative and regulatory barriers to revenue generation, encourage industry to share in the cost of mitigating impacts on a site-specific basis, and recognize energy impact assistance needs in establishing State funding priorities. Although such actions are already evident in some States, they are not evenly applied throughout all the regions.

--The Federal Government, in determining its role in energy-impact mitigation, should consider factors which bear on a local community's ability to address impacts of energy development. For example, the willingness of State and local governments to use their existing sources of revenue including that obtained from the Federal Government through Federal mineral leasing revenues, should be factored into decisions on the extent of Federal assistance to such areas. Also, the consideration given to helping deteriorating economies of areas impacted by past energy boom and bust cycles versus assistance given to areas currently experiencing impacts should be factored in the decision on the proper Federal role. In addition, the difficulties in distinguishing between impacts from energy development and other types of economic development raise questions as to whether Federal assistance should be geared to the cause rather than the problem. The amount of assistance provided by industry, both through demands placed on it by State and local laws and regulations, and through voluntary contributions to mitigate socioeconomic impacts, should also be considered in deliberations on the Federal role in energy-impact mitigation.

Contents

ABBREVIATIONS

ARC	Appalachian Regional Commission
CEIP	Coastal Energy Impact Program
DOE	Department of Energy
EDA	Economic Development Administration
EIADAP	Energy Impacted Area Development Assistance Program
EIS	Environmental Impact Statement
FHA	Federal Housing Administration
FmHA	Farmers Home Administration
HUD	Department of Housing and Urban Development
LDD	Local Development District
OCS	Outer Continental Shelf

CHAPTER 1

INTRODUCTION

The Arab oil embargo in 1973-74 and the 1978-79 winter cutoff in oil exports from Iran are two energy emergencies which have reminded the United States of its dependence on insecure foreign sources of petroleum, and therefore, the need to concentrate on fully developing our domestic sources of energy.

In July 1979, the administration announced actions which would save 4.5 million barrels per day by 1990 as part of an overall program to reduce imports by 8.5 million barrels per day by 1990. This program was established to draw on a variety of sources such as synthetic fuels from coal, oil shale, direct use of coal, conservation, increased production of oil and gas, and solar energy. Specific goals were established in each area. For example, as part of the program the Energy Security Act (P.L. 96-294, June 30, 1980) was passed and established a contribution level of 500,000 barrels per day by 1987 and 2 million barrels per day by 1992 for synthetic fuels.

The current administration also agrees that the Nation must develop its domestic energy resources. As a result, it decontrolled oil ahead of schedule in hopes that higher prices would stimulate increased exploration and production. It is also reviewing other methods to stimulate production, such as making large amounts of Federal land available for exploration and production, reducing regulatory barriers, and making environmental laws less restrictive.

The Department of Energy (DOE) estimates that energy exploration and development activities will increase within the next decade. Total coal production is estimated to increase from 830 million tons in 1980 to about 1.4 billion tons in 1990 with a significant part of this increase in the West. Also, oil and gas exploratory drilling is projected by DOE to steadily rise between now and 1990, especially in offshore areas and new areas of promise such as the Overthrust Belt in the Rocky Mountain area. Also, given continuing high oil prices, the Energy Information Administration projects synthetic liquids to begin contributing about .2 million barrels per day by 1990.

There are still many uncertainties, however, which could affect the pace, size, and type of energy development. For example, most synthetic fuel processes are still in the early stages of commercial development, and questions remain unanswered on the costs and the environmental and health effects of these processes. Therefore, their future level of production is uncertain. Another example is the Secretary of the Interior's proposal to increase the amount of Federal land offered for lease in the West. This would make more land available for coal mining and oil shale production; however, the proposal has been controversial and a final decision has not been made.

The expanded development of our domestic energy resources could significantly impact areas where these resources are located. For example, the energy resources in the Rocky Mountain area are located in sparsely populated areas and their development could significantly affect the social and economic conditions of these areas. The influx of workers and their families could cause changes in social structure and life styles and could impose economic hardships, since the need for public facilities and services would arise before adequate local revenue sources exist within the area.

The ability of a community to provide for the increased population depends on such site-specific factors as local population size and growth rates; population density in the host county and surrounding areas; proximity to regional centers of population; and local institutional capability to plan for, manage, and finance necessary infrastructure facilities. In addition, the level of assistance available from the State and Federal Government affects a community's ability to deal with impacts from energy development. With the number of variables involved, it is difficult to determine whether, and to what extent, a community's needs cannot be met from local and State resources and existing Federal programs.

We reported on energy development and its potential impact on communities in the Rocky Mountain area in July 1977 (EMD-77-23, July 13, 1977). At that time, we found that the need for additional Federal assistance had not been demonstrated, and recommended that, if Congress decided to further help the area, it should be contingent on the States taking actions to provide a minimum level of assistance, developing mitigation plans, and demonstrating in the plans that the assistance would be used to help energy-impacted communities.

Since our report, the Powerplant and Industrial Fuel Use Act of 1978 (P.L. 95-620) was enacted on November 9, 1978. Section 601 of the act established the Energy Impacted Area Development Assistance Program (EIADAP) to assist States and localities affected by uranium and coal production, processing, and transportation. It provides grants for both the development of growth management and housing plans and the development and acquisition of sites for housing and public facilities.

During the 96th Congress, S. 1699, which would have expanded and extended the EIADAP and would have allowed for construction and improvements to existing facilities which are not allowed under the existing program, was considered but not passed.

In the current Congress, several bills have been introduced relating to energy impact assistance. For example, S. 1731 would provide a tax incentive to industry to assist communities in mitigating adverse effects of energy development. Any contribution to providing public facilities and services needed because of population growth related to energy development and/or prepayment of taxes, fees, rentals, or royalties would be allowed

as a deduction. Another bill, S. 1732, would amend three major pieces of legislation. The bill would amend the EIADAP established by the Powerplant and Industrial Fuel Use Act by, among other things, expanding its coverage from coal and uranium to all major energy development. The bill also amends the Energy Security Act by giving the Synthetic Fuels Corporation authority to guarantee bonds or other obligations issued by units of local government to provide public facilities and services in response to socio-economic impacts caused by projects receiving assistance from the Corporation. The Mineral Leasing Act (41 STAT. 437; 30 U.S.C. 241) would also be amended to allow prepayment of royalties or rentals on leased Federal lands. The amendment also states that the Secretary of the Interior may require prepayment of these funds if it is determined operations under the lease are likely to cause adverse socioeconomic impacts. The congressional committees reviewing these bills had no action planned to date.

OBJECTIVES, SCOPE, AND METHODOLOGY

Since the issue of the Federal role in assisting energy-impacted areas has been a recurring theme, we reviewed the subject to analyze the Federal role in providing assistance to energy impacted areas in light of current energy development, potential impacts, and attitudes of State and local communities concerning their role in impact mitigation. We included the Rocky Mountain, Appalachian, and coastal zone regions, and we reviewed not only the Federal programs specifically designed for mitigating energy impacts but also other means available to communities to mitigate these impacts, such as revenues from severance taxes and the State share of revenues from Federal mineral leasing revenues. We also obtained and analyzed data on energy development in the Eastern Interior Coal Province which includes parts of the States of Illinois, Indiana, and Kentucky.

Our objective was to review the potential for energy development in these regions and the ways in which current and past socioeconomic impacts were handled. We visited Federal, regional, State, and local officials in 11 States--6 in the Rocky Mountain area, 3 in Appalachia, and 2 in the coastal zone. We reviewed planning and budgeting documents, State laws on energy facility siting and severance tax collection and disbursement, coordination mechanisms between various levels of government, and reports and other documents on the potential for energy development and related impacts within each region. We did not analyze specific community or State situations to determine if their planning and funding mechanisms were effective. Rather, we found that each community's situation differs to some extent, and a range of options and resources are generally available and being used by local communities and States. The report gives examples at the local, regional, and State level of the options we found available to plan for and mitigate impacts.

In the Rocky Mountain area we visited North and South Dakota, Wyoming, Utah, Colorado, and Montana. These States were covered

in our 1977 report and continue to be the areas with the most potential for energy development in the region. These six States contain almost half of the Nation's coal reserves and DOE estimates that 1990 coal production in Montana, Wyoming, and Colorado will be four times that of 1978. Also, the Overthrust Belt, which is located in parts of Wyoming and Montana, and the Williston Basin in North Dakota are the most active oil and gas development regions in the Rocky Mountain area. Over 80 percent of the Nation's oil shale resources are in Colorado, Utah, and Wyoming, and Utah has 90 percent of the Nation's tar sands resources.

In the Appalachian area we chose three States, Kentucky, Ohio, and West Virginia, which would provide an overview of the major coal development areas within the region. Also, Kentucky has the potential to be impacted from synthetic fuels development with four planned facilities in one area of the State. Ohio has experience with the construction of a $4-billion gas centrifuge uranium enrichment plant.

Within the coastal zone, we visited Louisiana and Maryland and reviewed documents concerning California's coastal program. Louisiana was selected because it has received the bulk of the Federal funds under the Coastal Energy Impact Program (CEIP). (See p. 14 for description of program.) The other two States were selected as representative of the Atlantic and Pacific regions. We concentrated our discussions on Louisiana and California since development has already occurred in these areas. We did not include Alaska since it is a unique frontier area, nor the Great Lakes region or Hawaii since they have minimal energy development.

We also interviewed officials in Washington, D.C.; at the headquarters of the Farmers Home Administration (FmHA); National Oceanic and Atmospheric Administration, Department of Commerce; Environmental Protection Agency; U.S. Geological Survey; Appalachian Regional Commission; Office of Management and Budget; the Department of the Interior; and DOE to obtain an overview of Federal involvement in the area and to review DOE and FmHA records related to the EIADAP and National Oceanic and Atmospheric Administration records related to the CEIP. In addition, we discussed the report with officials at FmHA and the National Oceanic and Atmospheric Administration responsible for administering EIADAP and CEIP and incorporated their comments as appropriate.

It was beyond the scope of our review to analyze the income and expenses or the capital needs of the communities. Thus, we did not determine the extent, if any, of impact on the areas we visited or whether a specific need for Federal assistance existed. At the State level, however, we obtained information on the Federal mineral leasing receipts and the State severance tax receipts, including the portion of these funds made available to local communities impacted by energy development. We did not obtain information on sources of other revenue such as property

tax and payments in lieu of taxes, since these revenues would depend not only on State laws but also local restrictions as well.

Also, we did not attempt to assess the current or future overall, nationwide dollar impact of energy development since other studies have projections of this type. The range of estimates in these studies indicates the uncertainty involved because of the number of variables and assumptions used. For example, the Report to the President by the Energy Impact Assistance Steering Group in March 1978 estimated impacts from $440 million to $80 billion, depending on the variables and assumptions used.

We did not evaluate the CEIP or the EIADAP for management effectiveness, including equity of funding allocation, adequacy of procedures and records, or administration of the program at the local level. We did gather opinions from Federal, State, and local officials on how the programs operated and how they were affected by them. During our study, however, we determined that the broadness of the EIADAP's designation criteria and an error in the criteria as published resulted in areas qualifying for the program and receiving funds even though they might not be adversely affected by energy development. In a report to the Secretaries of Agriculture and Energy (EMD-81-103, June 26, 1981), we recommended that the designation criteria be reassessed to ensure that only areas adversely impacted by energy development are eligible for assistance. On June 26, 1981, the Secretary of Agriculture published a revision to the designation criteria making it more restrictive. The Department of Energy responded to our recommendations by saying it was too late in fiscal year 1981 to affect receipt of funds for that fiscal year, and DOE had not requested funding for fiscal year 1982. Thus, given the limited amount of funds available, DOE believed it would not be cost-effective to reassess the designation criteria.

CHAPTER 2

PERSPECTIVE

The Nation's projected increased energy development activities within the next decade will, to varying degrees, affect the energy activities of the Rocky Mountain, Appalachian, and coastal regions. These energy development activities can have both beneficial and adverse impacts on a region, which to a great extent, are no different from those of other industries. There are two Federal programs, however, which are specifically targeted to dealing with impacts from energy development.

ENERGY DEVELOPMENT BY REGION

The extent of increased energy development in the Rocky Mountain, Appalachian, and coastal regions is dependent on many factors such as technological, environmental, and economic. It appears, however, that whatever the rate of increased development, the Rocky Mountain area will probably be the most affected. The Appalachian region, however, could be significantly impacted if large-scale synthetic fuels development occurs there.

Rocky Mountain region

The Rocky Mountain area contains a large percentage of the Nation's energy resources. The six States we visited contain almost half of the Nation's coal reserves, 80 percent of the Nation's oil shale, and 90 percent of the Nation's tar sands resources. Also, record numbers of drilling rigs are exploring for oil and gas in the Rocky Mountain area, specifically in the Overthrust Belt of southwestern Wyoming and the Williston Basin of North Dakota. There are also a number of proposed coal liquefaction and coal gasification projects planned for the area.

The Energy Information Administration estimates over 480 energy projects planned in the six Rocky Mountain States included in our review. (It should be noted that the degree of certainty or viability of these projects has not been determined.) Over 300 of these, of which 51 are coal conversion facilities, are related to the projected fourfold increase in the area's coal production between 1978 and 1990. Until recently, western coal reserves made only a limited contribution to the Nation's overall total coal production. However, the West is expected to increase its share of total coal production, which was 24 percent in 1977, by producing about two-thirds of the projected doubling of production in the Nation between 1978 and 1990.

In November 1980, the Environmental Protection Agency estimated that there were 19 commercial gasification and liquefaction projects, with a total capacity of 600,000 barrels a day of oil equivalent, proposed for the six-State Rocky Mountain region.

While the synthetic fuel technologies are not new, a number of economic, environmental, health, and social concerns and questions are still unanswered. Given the large scale of some of the proposed plants, the technical feasibility, product outputs, and plant costs still have to be demonstrated or determined. The major environmental concerns are the potential effects of air effluents, liquid and solid wastes, water contamination, and water use. There is also concern for worker health and safety because of the potential carcinogenicity of some synthetic fuels from coal. Other social and economic issues involve land use, labor availability for constructing the facilities, and population changes and growth which may be caused by the development of a synthetic fuel industry.

While the Rocky Mountain area also contains the bulk of the Nation's oil shale and tar sands resources, development has been proceeding slowly. Commercial production of oil shale is not expected to begin until 1983 and only three proposals in the Rocky Mountain area currently exist to develop a tar sands industry. Environmental, economic, and technical constraints have contributed to the slow pace of oil shale development and similar constraints must be addressed before development of a tar sands industry can proceed.

While oil shale and tar sands development is proceeding at a slow pace, oil and gas exploration is increasing dramatically. From a total of 411 active drilling rigs in January 1980, the area had a total of 543 in January 1981. If the exploratory drilling results in the discovery of commercial quantities of oil and gas, production could increase. For example, Amoco estimates that the Overthrust Belt in Uinta and Summit Counties in southwestern Wyoming contains discovered potential reserves of 914 million barrels of oil and 9,725 billion cubic feet of gas.

Appalachia and the Eastern Interior Coal Region

The energy development situation in Appalachia and the Eastern Interior Coal Region is different from the Rocky Mountain area. While coal production is increasing, it does not match the magnitude nor pace of western coal, oil, and gas development.

The Appalachian Coal Province extends from western Pennsylvania and eastern Ohio southwestward through West Virginia and eastern Kentucky into Alabama. The Eastern Interior Coal Province is located in Illinois, western Indiana, and western Kentucky. These regions contain an immense coal reserve base--about 193 billion tons or about half of the national total.

While combined coal production in these areas has been increasing, their percentage of total U.S. production has declined. In 1977 the regions produced 523 million tons, about 75 percent of U.S. production. During 1980 these two regions

increased production to 559 million tons, but the share of total U.S. production declined to 67 percent. This decline in the percentage of U.S. coal production supplied by these two provinces is attributable to expanded production in the West and to more stringent environmental controls. 1/

A considerable number of factors can affect future coal production levels. There are supply factors, such as availability of coal reserves, capital, manpower, and transportation. There are also demand factors, such as price competitiveness, environmental standards, electric utility growth, the export market, and development of a synthetic fuels industry. Consequently, reliable production forecasts are difficult to make and vary widely depending on the production scenario selected. For example, a report published by the U.S. Department of Transportation in April 1980 compared coal production estimates made by 13 Government and private sector organizations. Production estimates for 1985 ranged from 775 million tons under a low use scenario to 2,063 million tons under an accelerated use scenario. Again, 1990 estimates vary widely ranging from 1,202 million tons to 2,803 million tons.

If a synthetic fuel industry develops, coal will play a major role in the industry. Based on Federal and State sponsored studies, as well as proposed and ongoing projects, the Ohio River Basin, particularly areas with high sulfur coal such as western Kentucky, will become an active region supporting coal based synthetic fuel technologies.

The Appalachian Regional Commission sponsored a study 2/ which examined the various types of coal conversion facilities that could locate in Appalachia. The study identified 12 areas within Appalachia as potential areas for the development of coal conversion facilities and examined possible environmental impacts associated with facility development in each area.

The following table provides information on the larger synthetic fuel projects currently under development in Kentucky. Construction of these plants is estimated to begin in 1981 and be completed by about 1990.

Oil and gas production in the Appalachian area is a small percentage of total domestic production. However, natural gas production could increase in an area of Appalachia known as the Eastern Overthrust Belt--a geologic area that stretches 950 miles

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1/"Ohio River Basin Energy Study," Environmental Protection Agency, January 1981.

2/"Technology Facility Siting Characteristics and Infrastructure Needs," prepared for Appalachian Regional Commission, August 1976 by Battelle Columbus Laboratories, Columbus, Ohio. (Project ARC 75-183/4427).

Large Synthetic Fuel Projects Under Development in Kentucky and Ohio

Project and size	Location	Sponsor	Coal consumption (tons per day)	Funding	Status
Tri-State (commercial)	Henderson County, Western Kentucky	Texas Eastern, Texas Gas Transmission	30,668	Private, Federal	Detailed design, environmental assessment
Breckinridge H-Coal (Commercial)	Breckinridge County, Western Kentucky	Ashland Oil Co., Airco Energy Co.	22,500	Private, Federal, State	Preliminary design phase
W. R. Grace (Commercial)	Henderson County, Western Kentucky	W. R. Grace Co.	28,800	Private, Federal	Preliminary design phase
SRC-I (note a) (Demonstration)	Daviess County, Western Kentucky	International Coal Refining, Co.	6,000	Private, Federal, State	Decision on fiscal year 1982 funding for detailed engineering is awaiting congressional decision

Source: Derived from data furnished by State officials.

a/The SRC-I demonstration project is modularly designed to allow for expansion to commercial size.

through 15 States from Alabama to Vermont. Recent natural gas discoveries and new estimates indicate the area may hold more natural gas reserves than previously expected.

Also, researchers are looking more seriously at unconventional gas resources which have previously been considered uneconomic to develop, such as the large volumes of natural gas locked in the Devonian oil shales of Appalachia.

Coastal zone

Unlike the Rocky Mountain and Appalachian areas, the coastal zone cannot be characterized as one distinct region. It hosts a myriad of energy activities which vary in size, type, intensity, and impact of development. The coastal zone contributes significantly to energy production in the United States from both onshore and offshore oil and gas production, as well as a variety of other activities necessary to the Nation's production and consumption of energy. DOE estimates that oil and gas production is on the decline, however, and the major changes seen for the coastal zone in the near future are the accelerated oil and gas outer continental shelf lease program and the increased demand for exportation of coal with the resultant need for port facilities to handle those exports.

Three billion barrels of oil were produced in the United States in 1979. Production in the coastal zone accounted for 2.6 billion barrels or approximately 86 percent of the total, with offshore production contributing 389 million barrels or about 13 percent of the total.

While DOE estimates that the total United States production will increase 1 million barrels per day between 1985 and 1995, it believes the makeup of the total will shift. Estimates indicate that proven reserves both onshore and offshore will decline. For example, the Energy Information Administration's 1980 Annual Report to the Congress estimates that onshore production from proven reserves in the lower 48 States will fall from 60 percent of total production in 1978 to 6 percent in 1995. Production from proven offshore reserves in the lower 48 States is also estimated to decline from 11 percent of total production in 1978 to 1 percent in 1995. To compensate for this decline, production is forecast to increase from development of new discoveries both onshore and offshore in the lower 48 States and increased production from North Alaska, enhanced oil recovery methods, and unconventional sources such as synthetic liquids from coal. However, there are many uncertainties which affect the actual production from new discoveries.

The Gulf, Pacific, Atlantic, and Alaskan regions all have outer continental shelf (OCS) areas scheduled for lease sale between now and 1984. These lease sales will expand geographic areas being explored from Southern California, North Texas, Louisiana, and Alaska to areas along the whole Atlantic coast, Florida Gulf Coast, and Northern California. The Secretary

of the Interior has proposed new initiatives to speed leasing in offshore areas and has proposed a new leasing schedule for 1982 through 1986 which will be finalized in early 1982. Even though the U.S. Geological Survey estimates 12.5 to 38 billion barrels of recoverable oil resources in the outer continental shelf, a portion of which could be tapped under these lease sales, the likelihood of discovering commercially exploitable oil fields is uncertain. The U.S. Geological Survey's estimates for undiscovered resources are only the probable size of the field and carry no assurances that oil will be found. Also, the timing and level of activity are uncertain. Exploration is going further from shore and into deeper water. Exploration and production in these areas will involve greater risk and costs than exploration and production closer to shore. Therefore, production from these areas will depend on the companies being able to recover these increased costs.

The coastal zone hosts not only oil and gas development but a variety of other energy activities such as coal export handling facilities, refineries, liquefied natural gas receiving terminals, and electric generating plants. Coal activity may impact certain coastal zone areas. With the increasing demand for coal exports, 12 of the 13 existing port facilities for handling coal exports have planned to expand their facilities or have expansion projects underway. 1/

The increase in other coastal energy activities has been relatively small and with minimal adverse impacts. For example, no major additions are seen to U.S. refinery capacity because of declining U.S. oil resources and environmental siting constraints. The only change may be in expansion or modernization of facilities which should not significantly impact surrounding areas.

ENERGY DEVELOPMENT VERSUS OTHER DEVELOPMENT

Energy development brings with it economic prosperity in the form of increased employment, higher incomes, and increased tax base. Development might also cause adverse impacts if local governments cannot accommodate the influx of construction workers and operating personnel and their families which increase the area's population to the point of burdening the existing housing and public facilities and services. Some problems which might occur include a short supply of permanent and rental housing, inadequate solid waste disposal, and overburdened medical facilities, schools, transportation systems, and law enforcement.

Both benefits and problems are not unique to energy development. Population increase, the major factor which could cause adverse impacts, could occur with any type of development. Just as with a synfuels plant, construction workers are needed to

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1/Draft Interim Report of the Interagency Coal Export Task Force, January 1981.

build a new steel mill or automobile factory and, once the factory is completed, operating personnel will be needed.

While these same factors would be associated with all forms of economic development, there are certain differences which distinguish the problems of energy-related development. One factor, particularly in the case of synthetic fuels from coal, oil shale, and tar sands development, is that there is a significant risk of failure. There are no commercial facilities utilizing these new technologies currently operating in the United States and technical, economic, and environmental uncertainties will remain until the first plants are operating. Also, in many cases of energy development, there is not a wide range of siting choices for energy facilities--they must be located near the resource. For example, in the western United States, resources are located in rural areas where the existing housing stock and public facilities are not adequate to meet the population influx. If plants were not "resource-tied," it might be feasible to site a plant in an area of underutilized infrastructure capacity or an area of high unemployment.

The ability of a community to handle the increase in population whether it be from an energy facility or manufacturing plant varies depending on the size of the existing population, the infrastructure in place at the time of increased employment, and the resources available to the community to mitigate impacts. For example, a rural, isolated Rocky Mountain community's labor force and infrastructure are probably much less capable of accommodating the impact of energy development than some communities in Appalachia with unemployed workers or California communities which can draw on nearby localities to share the impacts.

In dealing with the impacts of energy development, local communities have utilized a variety of Federal programs. Two programs specify that communities must be energy impacted to receive assistance. This differs from most other Federal programs which generally provide funds to alleviate a problem and are not restricted in terms of the cause. For example, the Environmental Protection Agency provides grants to local communities for wastewater and water treatment programs. There is no stipulation as to what caused the need, only that a need exists. Therefore, program funds are tied to the problem itself rather than the cause. Communities use both types of programs to meet their needs, at times combining funds from several programs to complete a project.

The following section discusses the two Federal programs which target assistance to energy impacted areas.

FEDERAL PROGRAMS FOR ENERGY IMPACTED COMMUNITIES

The Congress established two Federal programs specifically designed to aid communities impacted by energy development.

The Energy Impacted Area Development Assistance Program (EIADAP) was established by section 601 of the Powerplant and Industrial Fuel Use Act of 1978. The objective of the program is to help areas impacted by coal or uranium production, processing, or transportation. The program is administered by the FmHA of the Department of Agriculture. It provides grants to States, local governments, and councils of government for both the development of growth management and housing plans and the development and acquisition of sites for housing and public facilities.

This was the only assistance program specifically targeted to aid in the mitigation of energy related growth in Appalachia and the Rocky Mountain States. The Governor's office of each State, or its designated alternate, was involved at the State level in designating impacted areas, developing a comprehensive growth management and housing plan, and developing a State investment strategy.

Before an area was eligible to apply for assistance, it had to be designated an energy impacted area by the Governor of the State and approved as such by DOE. Since the inception of the program, DOE has received 125 applications for designation approval. As of October 30, 1981, 95 were approved, 25 were disapproved, 4 were withdrawn, and 1 was pending.

For fiscal years 1979 through 1981, $69 million was allocated to a total of 23 States. Ten percent of that amount, about $6.9 million, was for planning grants and the remainder, about $63 million, was for site acquisition and development. The program received only $10 million of its $62 million fiscal year 1981 appropriation--$52 million was rescinded. According to a program official, while the program received no funds in fiscal year 1982, there is still approximately $10 million in carryover funds which have been allocated to eligible States. FmHA has notified these States that they have until March 31, 1982, to spend their allocation. Any funds still remaining at that time will be pooled and reallocated to States who can spend the funds immediately so that the program can be shut down. The program official also stated that no funds have been requested for the program for fiscal year 1983.

Program funds were used for the following purposes.

1. Funds up to 100 percent of total cost could be used to prepare the statewide growth management and housing plan. These planning funds were also awarded to prepare area plans that were incorporated into the State plan and investment strategy.

2. Funds up to 75 percent of total costs could be awarded for the cost of acquiring sites for housing, public facilities, or services.

3. Funds up to 75 percent total cost could be awarded for developing sites for housing, public facilities, or services.

The project funds were used for site acquisition and/or development, including but not limited to: grading and leveling; sewer and water connections; extending water and sewer lines and access roads to housing and public facilities sites; and necessary engineering reports and services for site development. Project funds, however, could not be used for construction, repair, or rehabilitation of housing and public facilities.

The Coastal Energy Impact Program (CEIP) was established in 1976 by amendments (P.L. 94-370) to the Coastal Zone Management Act of 1972 (P.L. 92-583) with the following objectives:

--Improve State and local capacity to deal with expanded coastal energy activity, especially by providing front-end financing to communities faced with "boomtown" and other socioeconomic effects from rapid, energy-spawned industrialization.

--Mitigate environmental and recreational losses stemming from energy development.

--Encourage State participation in the Coastal Zone Management Program and reduce opposition to Outer Continental Shelf (OCS) leasing and other energy development.

--Provide limited compensation or "equity" in lieu of taxes to States adjacent to OCS oil and gas development. (Coastal zone States do not share in OCS Federal leasing revenues as do States with energy development on Federal lands within their boundaries.)

CEIP is the only Federal program which targets financial assistance to eligible coastal States and communities specifically to plan for and mitigate impacts of energy development.

From 1977 through fiscal year 1980, $321 million of program funds was allocated to coastal zone States. For fiscal year 1981, $30 million in grants has been allocated, while $36 million in loans were rescinded. Another $40 million in loans was deferred until October 1, 1981, at which time they were reprogrammed into grants. CEIP retained $7 million and the Coastal Zone Management Program received the other $33 million to provide funds to assist in phasing out the Coastal Zone Management Program. According to a program official, no additional funds were appropriated for CEIP for fiscal year 1982 and no funds have been requested for fiscal year 1983.

The Coastal Zone Management Program assists States in establishing State programs to effectively manage their coastal resources. Many States believe their programs could not continue because the administration did not request funding for

the Coastal Zone Management Program for fiscal year 1982. Therefore, the States asked for additional time to acquire other funds to continue their programs since many had already finalized their State budgets for fiscal year 1982 and could not reprogram the necessary money.

There are several types of assistance available through CEIP. Grants are available to plan for and/or construct public facilities and services resulting from OCS energy activity. Public facilities can include highways, docks, fire and police protection, water supply, waste collection and treatment, schools, and hospitals. Another grant category helps States and local communities prevent, reduce, or ameliorate any unavoidable loss of environmental or recreational resources due to coastal energy activity. Planning grants are also available on an 80 percent Federal/20 percent non-Federal basis to help prepare for the consequences of new or expanded energy facilities in the coastal zone. Public facilities or services required because of coastal energy activity can be financed through direct loans or loan or bond guarantees. Repayment assistance, in the form of credit term modifications or repayment grants, is also available.

The following chapters discuss the potential impacts from energy development in the Rocky Mountain area, Appalachia, and the coastal zone and the varied resources utilized by local communities to plan for and mitigate them.

CHAPTER 3

ENERGY DEVELOPMENT IN THE ROCKY MOUNTAIN STATES--IMPACTS AND RESPONSES

As discussed in chapter 2, the Rocky Mountain area contains a large percentage of the Nation's energy resources. The rate and timing of their development, however, is subject to many variables, such as economic, technical, and environmental. With the development of these resources in the Rocky Mountain area, there is an attendant population growth which usually disrupts social patterns and strains local economic resources. According to a DOE publication, an estimated 325 communities in the area could potentially be impacted from energy development. These impacts could include an increased demand for housing, public facilities and services, and recreational facilities.

To deal with such impacts, local communities need adequate, comprehensive plans. Their ability to develop such plans depends not only on advanced, reliable information from industry, but also technical assistance and funding being available to them. The local communities have received planning assistance from various sources, such as regional, State, and Federal organizations.

In addition to planning for the impacts, the local communities must also have the necessary resources to mitigate them. There are many variables affecting these rural communities' ability to cope with these impacts. These include the size and condition of public facilities, the tax base, bonding limitations, and the States' limitations on revenue generation. It would also include the use of severance tax receipts and Federal mineral leasing revenues and industry assistance. Therefore, it is extremely difficult to determine the extent to which an energy impacted community's needs cannot be met either by itself or with industry and State assistance.

IMPACTS FROM ENERGY DEVELOPMENT

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. To meet the needs of the increased population, the local community is faced with upgrading its public services, expanding its public facilities, and providing increased social services. The private sector is also impacted since there is an increased demand for housing and other goods and services. These problems are particularly severe in the Rocky Mountain area which is a predominantly semi-arid, rural area with widely spaced small towns or cities that are most often isolated and sparsely populated. Because they are sparsely populated, they generally do not have the tax base or infrastructure to handle rapid population increases.

The potential number of energy impacted communities in the six-State Rocky Mountain area included in our review has significantly increased. The Mountain Plains Federal Regional Council estimated in July 1975 that there were 131 of these communities in these six States. In March 1979 DOE published a summary of data provided by State and local government entities listing 325 communities in these six States as potentially impacted from energy development. DOE recognized that the actual number of impacted communities and the degree of impact on any particular one will depend on several factors, such as the location and pace of resource exploration and the varying criteria used by State governmental entities in identifying impacted communities. Of the 325 communities, 215 (66 percent) had a 1978 population of 2,000 or less and 66 (20 percent) had a population between 2,001 and 10,000. Therefore, much of the potential Rocky Mountain energy development is in areas of small communities which have population densities ranging from 1 to 17 people per square mile. (The nationwide average is about 60 people per square mile.)

The western States, with their predominantly semi-arid rural regions with widely spaced small towns and cities, have and could continue to experience severe problems absorbing or diffusing population in-migration attracted by large energy projects. For example, the population of Green River, Wyoming, impacted by coal, oil, gas, and trona 1/ development, grew by 164 percent from 4,196 in 1970 to 11,110 in 1978. Also, the population of Carbondale, Colorado, impacted by coal development, grew by 214 percent from 1970 to 1978. Until recently, many communities such as these were losing population, unable to sustain or often not wanting to generate the kinds of economic activity that would hold or attract people. As a result, many of the public services and available facilities had been maintained with minimum maintenance and repair. However, the huge wave of construction workers and operating personnel who require temporary and permanent housing and greater public services have or will infringe dramatically on the old way of life and have or will exert immediate added pressure on public and private facilities in these small rural communities.

Because of the large amounts of capital and labor required for energy industries, there have been negative impacts from its rapid development in the rural west. This expanded development has caused rapid employment and population increases which in turn have resulted in severe shortages of housing and public facilities and services. Due to their rural nature, the local governments in the Rocky Mountain area have apparently been more vulnerable to these boom town problems than the rest of the country.

1/Trona is a mineral consisting of sodium carbonate and used in the manufacture of glass, chemicals, pulp, and paper products.

Increased population means an increased demand for housing, public facilities and services, and recreational facilities. This can place a severe physical and financial burden on the small, rural communities in the Rocky Mountain area. The population in 53 (18 percent) of the 297 1/ communities was estimated to increase by over 100 percent between 1970 and 1980; 129 (43 percent) of the communities were estimated to experience a population increase over 40 percent.

According to the DOE publication, over one-fourth of the 325 communities lack central sewage treatment systems and 10 percent do not have municipal water service. Many systems are operating at or near maximum design capacity. Continued population growth from energy development can only worsen the situation and heighten the need to build or expand expensive municipal service systems to avoid long-term public health problems. Likewise, based on data provided to DOE by State and local governments in the area, most public elementary and secondary schools appear to be operating at capacity. Thus, new local facilities will be required in many communities to accommodate growing enrollments.

Housing is the first and most urgent private sector need in communities facing large scale energy development. The need for housing is two-fold--temporary housing for construction crews and permanent housing for personnel to operate the energy facility. Housing is usually in short supply; its prices are often greatly inflated; and land may not be available for new construction because of terrain, price, or public ownership. Shortages of construction financing and mortgage money are common and, in some cases, new employees may not qualify for mortgages. The need for temporary housing for construction workers can exacerbate these problems. Mobile homes often fill this need but their siting and services to the sites add to the difficulties faced by local government. Problems such as these were encountered in providing residential housing in Evanston, Wyoming, which is in the Overthrust Belt. Its problems included

--no general decision by the community as to where residential development should occur,

--difficulty of obtaining construction and development loans,

--high price of residential land in the Evanston area,

--high cost of mortgages, and

--lack of knowledge by developers and financial institutions about the duration of the oil and gas boom.

1/Only 297 of the 325 communities provided the necessary data.

In addition to the economic impacts discussed above, energy development in the Rocky Mountain area also affects the local community's ability to provide necessary human services. In addition to the traditional services such as fire and police protection and medical services, the rapid growth, transient-populated western boom towns also need services such as alcohol and drug abuse counselors, marriage counselors, and programs to alleviate child and spouse abuse. In addition, transient families who, without adequate financial resources, move to the area in search of employment are increasingly using public assistance programs, such as food stamps and aid to families with dependent children.

For example, in the oil and gas area of southwestern Wyoming, a study by the Overthrust Industrial Association 1/ identified public assistance programs, alcohol abuse treatment, and recreational opportunities as needing community attention. In 1980 Uinta County social workers served an average of 69 clients per month. During the first quarter of 1981 the average increased 48 percent to 102. Such public assistance programs as emergency assistance, general relief, and food stamps have been climbing at rates higher than the population increases. A community-based alcohol treatment program and a youth program were also identified as additional community needs.

In addition to the impact associated with the development of one energy source in an area, parts of the Rocky Mountain area are also impacted by the simultaneous development of several energy sources and/or mineral resources. For example, the population in the Green River-Hams Fork Coal Region in northwest Colorado and southwest Wyoming is expected to grow from about 45,000 in 1978 to about 81,000 in 1990. Factors affecting this increase include not only the increased production of coal (estimated to increase by 20.3 million tons a year), but also the oil, gas, trona, phosphate, and other minerals produced in the area. The Nation's principal source of trona is in the area and part of the area is adjacent to the Overthrust Belt with its vast resources of oil and gas. Also the Nation's largest, most commercially advanced oil shale deposits border Colorado's coal producing counties.

PLANNING FOR ENERGY DEVELOPMENT

Planning how it will address the impacts from energy development is an integral part of a community's response to such development. Some Rocky Mountain communities' ability to effectively plan has been limited by the lack of information

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1/The Overthrust Industrial Association consists of oil and gas corporations and service-related companies whose goal is to help local governments cope with the impacts from energy development in the Overthrust Belt. The study is "Community Advisory Committees," Uinta County, Wyoming, 1981.

from the industry. Other communities have lacked the necessary internal resources. Some of these communities, however, have received financial and technical planning assistance from outside sources.

Under the rapid growth conditions of energy development in the rural West, serious impact problems can be expected to occur if the local areas do not have adequate comprehensive plans, capital improvement programs, and front-end financing to deal with the impacts. For example, if a local area has only minimal land-use control mechanisms to handle rapid conversion of open land to urban uses, sprawling, leap-frog development can occur. This can result in conflicting land uses, environmental problems such as soil erosion and water pollution, and inefficient patterns which are costly to service with police, fire, and school busing. Also if the area does not have adequate, updated plans and financial resources to accommodate the growth, problems can arise. The development of the necessary types of land-use regulations lags considerably behind demand, resulting in a sharp increase in the relative price for land and housing.

Untimely energy development information prohibits effective planning

A local community faced with large-scale development must properly plan before this development begins so as to control and direct impacts, or simply accept a reactive posture and deal only with problems as they occur. The foremost need in planning for energy impact management is the timely and complete knowledge of the industry, including its plans for energy development. Industry must provide local communities capital development and employment projections to ensure advanced planning and the delivery of adequate public services and facilities. Only with a clear understanding of the nature of the industry and the site-specific development plans of individual companies can local communities begin to respond to the needs of the expanding population. Early knowledge about a company's development plans is critical to timely and effective impact mitigation planning.

Based on our review, industry's ability and willingness to share information with local communities is mixed and wide-ranging. The principal reason for these differences is that no two companies are alike--either in the type of their projects or their philosophies for information sharing. A company's attitude toward sharing information, the type of development, the timing of development, and the fear of competition all impact a company's decision on when and how much information will be provided to the local community.

Oil and gas exploration and development is a good example of how the type of industry and its timing make it difficult to provide information to communities. This industry is transient. As new fields with prospective resources are identified, the crews move in to explore and develop the resources. Unlike

coal mining, the petroleum extraction industry has the capacity to move rapidly into an area and the planning process is condensed into months rather than years. Consequently, not only is it difficult to predict growth patterns, but also the industry's advance information is limited. This makes planning for impact mitigation difficult.

Another aspect affecting industry's willingness to share information with local communities is competition. For example, the oil and gas industry competes for mineral leases, drilling rigs, production contracts, and transportation contracts. Therefore, most of them closely guard their business information.

A situation compounding the difficulty of assessing the extent and impact of energy development is the fact that more than one type of energy resource is currently being developed in many areas of the Rocky Mountain region. For example, oil, gas, coal, and uranium are all located in recoverable quantities in southwestern North Dakota, while oil, gas, coal, uranium, and trona are being developed in southwestern Wyoming. Each resource requires different development methods with differing land use, employment, material, and support service requirements. When focused in a particular county or area, the combined effects can produce a rapid growth situation that is very difficult to predict and manage.

We found that some Rocky Mountain communities and States have developed both formal and informal mechanisms to gain information from industry. There are examples in the Rocky Mountain area of industry cooperating with and assisting local communities. One of these is the Inter-Industry Technical Assistance Team which was organized to provide assistance and information to local communities in Mercer County, North Dakota. Since 1977 this team has addressed the cumulative impact associated with energy conversion facilities under construction and proposed in Mercer County. The team gathers information and updates its assessments for both industry and local communities.

We found that five of the six Rocky Mountain States and at least one local jurisdiction have enacted laws or otherwise required industry to provide information before starting development activities. Of course information problems inherent in an industry, such as discussed above on the oil and gas industry, would not be resolved by such laws. The State of Utah has enacted legislation which requires major developers (any developer whose proposed facility will employ more than 500 people, or will cause the local population to increase by more than 5 percent) to file an impact mitigation plan at least 90 days prior to the start of construction.

The Industrial Development Information and Siting Act was enacted by Wyoming in 1975 to provide for a detailed review of the social, economic, and environmental impacts of industrial development in the State. It requires industry to submit a

permit application which must contain plans and measures for mitigating adverse impacts and must be approved by the State industrial siting council prior to construction of any industrial facility.

This council can require applicants to take actions to mitigate adverse socioeconomic impacts. An industrial facility is defined as a powerplant larger than 100 megawatts, a coal gasification plant with a capacity greater than 100 million cubic feet a day, a coal liquefaction plant with a capacity exceeding 500 pounds a day, and any industrial facility with a construction cost greater than $50 million, as adjusted for inflation (about $80 million as of January 1981). According to an official of the Wyoming Industrial Siting Administration, this provision has its limitations in that many industrial facilities currently costing under $80 million are not covered. In the Overthrust Belt of Wyoming, for example, a gas sweetening plant which will add 1,000 employees to the area may not cost enough to require a permit under the Wyoming Siting Act. Also, although the act has jurisdictional control over major facilities, the cumulative effect of many minor (under $80 million) facilities could cause major impacts.

The Montana Major Facility Siting Act was enacted to minimize impacts of energy development on population concentrations and the welfare of citizens of the State. The siting act provides for advance planning and site-specific project information by requiring permit applicants to file a 10-year long-range plan. They also must obtain a certificate before commencing construction. This act applies to energy production, conversion, and transportation facilities, except that oil and gas facilities are excluded.

The North and South Dakota 1/ laws applicable to energy conversion and transmission facility siting are similar to the Montana statute. They require permit applicants for energy conversion and transmission facilities to file a 10-year plan containing descriptions and probable locations of proposed facilities. In addition, these acts also require each such facility to have a certificate before construction begins.

Garfield County, Colorado, has refused to issue permits for oil shale development unless energy companies ensure the mitigation of impacts such as the need for schools, housing, fire protection, and hospitals. For example, one company was required, among other things, to provide front-end financing for a school with a capacity of 225 students and to prepay to a town a $1,500 fee for each of 200 water and sewer taps.

1/The South Dakota law only applies to electrical generation and transmission facilities.

Effective planning also requires adequate resources

In addition to the need for adequate and timely information, effective planning for energy development impacts also requires that the affected area have the necessary expertise and funding. In the Rocky Mountain area many small, rural communities do not have these resources; however, they have generally been able to obtain help from regional, State, and Federal organizations.

Many small communities do not have even a city manager, let alone professional staff with planning expertise. Under boom conditions, the workload increases so much that additional staff is needed for all areas, but particularly for the planning functions, fiscal management, issuance of permits, and health and safety inspections for new construction and facilities. Mayors, city councils, and local citizens in the rural west, accustomed to operating on a no-charge, bare-maintenance budget, now recognize that changes must be managed and this requires more resources.

The need for qualified professionals is illustrated by the growth of Green River, Wyoming, which increased from about 4,200 in 1970 to a population of about 13,000 in 1981 with further increases in population predicted for the future. The growth of this town has been and continues to be influenced by the development of multiple resources, both energy and non-energy (coal mining, powerplants, oil and gas exploration and development, and trona mining and processing). According to local officials, Green River currently has only a mayor and a part-time clerk who only have time to attempt to "catch-up" in mitigating impacts and have no time to devote to future planning. Another energy-impacted Wyoming town, Hanna, has grown from 450 in 1970 to about 2,500 in 1981 and has only a part-time mayor, who told us that the town does not have any staff with planning expertise.

To resolve this problem, some local communities have grouped together to form regional associations which provide technical assistance to the communities. These organizations were formed to assist or perform the planning for communities, counties, or specific regions of a State and are a major source of growth planning assistance. If the impacts are felt throughout several counties, combined efforts for the collection of information and analysis, overall planning and coordination, and the securing of State and Federal funds would appear beneficial. For example, in Utah the Southeastern Utah Association of Local Governments serves in a technical assistance capacity to cities and counties experiencing rapid growth, by providing both planning assistance and information on how and where to secure financial resources to mitigate energy impacts.

Another example of such a regional organization is in North Dakota which is divided into eight major planning regions, each having a regional planning council established by State law to do

comprehensive planning and development for communities and counties in the region. Each regional council is comprised of elected officials and citizens. Staff planners prepare plans and assist local governments in writing grant applications for a variety of State and Federal programs. The resources of the regional councils are particularly important to individual rural communities and counties who do not have expertise or the funds to hire professional planners and related staff.

In addition to planning expertise, the impacted communities also need the financial resources to pay for the plans and planners. For planning to be effective it should precede the actual impacts from energy development. At that time, however, the communities' tax base does not yet reflect the future development. As a result communities look elsewhere for the necessary planning funds.

To illustrate the wide variety of potential funding sources which were available to develop plans, fiscal year 1979 planning funds of the Lincoln-Uinta Association of Governments in Wyoming were as follows:

Balance Carried Forward		$ 26,469
Local funds		59,975
State funds		10,000
Federal funds:		
Department of Housing and Urban Development 701 Program	$26,605	
Old West Regional Commission	37,619	
Department of Health, Education, and Welfare	5,000	
Economic Development Administration	60,000	
Department of Labor	2,653	
Subtotal, Federal funds		131,877
Miscellaneous		749
Total		$229,070

The fiscal year 1980 planning fund sources for the Roosevelt-Custer Regional Council in North Dakota were as follows:

Local funds		$ 14,000
Federal funds:		
Economic Development Administration	$20,000	
Old West Regional Commission	27,200	
Law Enforcement Assistance Administration	11,000	
FmHA (Sec. 111)	16,400	
FmHA (Sec. 601)	16,000	
Department of Labor	10,000	
Subtotal, Federal funds		100,600
Total cash resources		$114,600

The major function of State governments in the planning process has been to assist and prioritize the planning activities of the local and regional organizations. Although the States themselves do not develop plans for mitigating the impacts from development, they generally promote inter-governmental cooperation to coordinate the activities of counties, municipalities, and regional organizations. States generally prepare some type of State investment strategy which prioritizes capital improvements and often initiate joint meetings to coordinate funding of projects from various levels of government and industry.

Our objective in gathering data on planning was to determine various sectors' involvement in the process, not to determine whether there were gaps in the planning coverage. We noted that various local, regional, State, and Federal organizations are involved in various degrees of planning and that there are various mechanisms used to help in the planning process. Our review, however, did not reveal a systematic planning mechanism or framework to ensure that local, State, and when applicable, Federal agencies participate in addressing all essential factors and developing comprehensive mitigation strategies and plans for all energy projects. The need for such a mechanism or framework depends on the type and scope of energy projects and the individual circumstances in the various local communities, regions, and States. In making this determination, States and local communities should consider using siting legislation and regional councils to assist them in the planning process.

FUNDING THE PROJECTS TO ADDRESS IMPACTS FROM ENERGY DEVELOPMENT

Communities impacted by energy development usually need funds to provide expanded public facilities and services both before and during the development. Because many communities lack the revenue sources, including an adequate tax base, initially they are not able to internally generate the funds to support the initial influx of people caused by the development. Also, some communities do not have the resources to support the

increased population even after development is underway. In both of these cases, the communities look for assistance from outside sources, such as industrial, State, and Federal organizations. Therefore, whether each community is able to satisfactorily deal with the impacts depends on its ability to not only internally generate funds, but also obtain assistance from outside organizations. This ability, in turn, is impacted by several variables including the size and condition of the community's tax base and public facilities, and the State's method of distributing energy severance tax and mineral leasing revenues. We recognize that economic models and methodologies are being used to analyze impacts of energy development on both the regional and local level. However, we believe because of the variables just discussed it is difficult to realistically measure each community's needs at one point in time and to collectively understand the role of the various levels of government and industry in mitigating impacts.

Locally generated revenues

Areas experiencing or anticipating the impacts of energy development usually require increased funding to meet the rising demands for public services. Methods available to them to internally generate funds include property taxes, long-term debt, and in some cases, sales taxes. Licenses and permit fees can also be collected but are usually reimbursements for providing specific services. Of all locally generated revenues, long-term debt financing is the one commonly used for funding capital improvements.

Property taxes are usually put into a local government's general fund to cover operating expenses and can also be used to repay general obligation bonds and interest. In many areas, property taxes are the principal source of internally generated revenue. However, property tax collections are dependent on an area's tax base and may increase only after energy development has impacted an area. In addition, communities that are expected to provide services may be unable to collect property taxes from energy facilities outside their taxing jurisdiction. These problems are discussed in more detail in the next section.

It should be noted, however, that property tax receipts generated from energy development can be quite substantial. For example, in Wyoming the property taxes received from mineral production more than tripled from $36.9 million in 1975 to $126.4 million in 1980. During the same period, the mineral property taxes increased from 35 percent to 51 percent of the total property taxes. These mineral property taxes are estimated to increase to $454.6 million in 1985, more than triple the 1980 level.

In most Rocky Mountain States, sales taxes are collected by States on certain goods and services sold, while use taxes are collected on goods brought into the State for use or consumption. Local governments in Colorado, South Dakota, Utah,

and Wyoming may also collect these taxes. These taxes are usually deposited to general funds from which normal operating expenses are financed.

These States' sales and use tax rates range from 3 to 5 percent. The amount of revenues received from these taxes by energy impacted communities varies dramatically from one State to another. For instance, Rifle, Colorado, imposes a 2-percent sales and a 2-percent use tax and has budgeted $720,000 in revenues for 1981 from this source. This is 56 percent of its locally generated revenue. Montana does not permit any sales or use tax collections and North Dakota's local governments are precluded by State law from collecting the taxes.

Bonded indebtedness is a significant financing option for energy impacted areas. Usually, a county or municipality can issue revenue bonds 1/ for public facilities owned by the local entity. The retirement of revenue bonds is tied directly to user fees charged for using the facility or service. Thus, it is also tied to the population base. General obligation bonds may also be issued to fund projects required as a result of energy impact and may be retired through property tax revenues. Special assessment bonds can be used to finance a service to a limited area within a taxing jurisdiction.

The potential for local communities to use bonded indebtedness to finance capital construction projects may be substantial. In a report prepared for the Old West Regional Commission, 2/ it was estimated that energy impacted counties, municipalities, and school districts in Wyoming could raise $168 million between 1979 and 1985 from issuing bonds. This amount is 38 percent of the capital requirements identified during the same time period. The estimate may be high, however, because it assumes that bond issues will be submitted to voters when capital is needed, a debt capacity tax base will be available, and voters will approve the bond issues.

Need for assistance

Most Rocky Mountain communities faced with impacts from energy development need to increase their revenues above the level needed prior to the impacts; most of these communities, however, cannot increase their internal receipts until the energy development and the increased population are reflected on the tax rolls. For example, Colorado expects the tax base and associated tax revenues from the oil shale industry to rise much

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1/Revenue bonds are used for specific projects such as water and sewer systems that produce revenues sufficient to retire the bond debt.

2/"The Fiscal Impacts of Energy Development on Wyoming's Local Governments," Stuart/Nichols Associates, October 1979.

more slowly than the need for additional public facilities. The first property taxes for a shale plant will not be due until 2 to 3 years after the plant is built. Socioeconomic impacts, however, will precede and continue through the construction phase.

In a report on energy impacts, the Lincoln-Uinta Association of Governments, Kemmerer, Wyoming, discussed problems experienced by local governments in generating front-end revenue for energy impact mitigation. The report states:

> "Local governments raise money from property taxes, sales taxes, and other local sources. The local tax base does not increase significantly until after the new industry is in production and permanent homes and new businesses are in place. But the revenue is needed before the project even starts construction and during the time of development. Because of this three to five year lag between the time the revenues are needed and when they actually come in, many services are shorted during the period of greatest growth impact."

Another factor which affects a community's ability to generate additional revenues is that many States limit the amount of property tax that can be generated by local governments. For example, most small communities in Colorado are unable to collect an amount of property tax which exceeds the previous years collections plus 7 percent, unless approved by voters or the State. Utah also limits property tax revenues for many local governments to the amount for the previous year, adjusted for changes in personal income for the State as a whole and population for each governmental unit. Local governments in North Dakota are prohibited by State law from imposing property taxes on mining machinery and equipment; the State severance tax is in lieu of sales or use taxes.

States may also limit the amount of bonded indebtedness that can be incurred by local governments. For example, both Utah and Wyoming limit each county's bonded indebtedness to 2 percent of the county's assessed valuation. With some exceptions, municipalities in the two States are limited to 4 percent of their assessed valuation. These States do not limit revenue bond indebtedness. In Colorado bonded indebtedness is limited to 1.5 percent for counties and 3 percent for cities and towns. South Dakota counties, cities, and towns are limited to 5 percent, with exceptions for water and sewer projects (an additional 10 percent) and for electric projects (an additional 8 percent).

Tax revenue generated in different jurisdiction than impact

In many instances, communities or counties will be asked to provide increasing services in support of energy development while property tax increases will accrue to other areas. Cities

and towns may actually receive the bulk of energy related population increases, but the energy facilities themselves will likely be located in rural areas outside the community's taxing jurisdiction. For example, oil shale plants in western Colorado will eventually pay property taxes but not to some of the towns impacted by their development. Rifle, Colorado, is expected to become one of the largest cities in Colorado's shale region and may increase its size 20 times in the 1980s. Rifle will have massive needs for new facilities, but it will not be able to levy property taxes on the nearby multi-billion dollar shale plants which will cause its growth.

The city of Grand Junction, Colorado, will face the same problems as Rifle. Grand Junction in particular, and Mesa County in general, are slated to become the service center and regional hub for the entire oil shale area. Any massive population movement into the area will stimulate rapid growth in Grand Junction. This city will be the focal point for suppliers and secondary markets dependent upon oil shale, and the center for those looking for work. However, no shale plants will be within Mesa County, so no property taxes from these plants will flow to the County or to Grand Junction.

Although many communities are unable to obtain property tax revenues from energy facilities outside their taxing jurisdiction, Utah eased this problem when it enacted its Special Service District Act in 1975. The act permits the formation of special service districts which have the power to tax and provide services without regard to prior political boundaries. For instance, the Castle Valley Special Service District contains seven towns in Emery County, Utah, along with two coal-fired powerplants. Without the district, the towns' tax bases would not include revenues from the two powerplants.

State, industry, and Federal assistance

Communities generally welcome assistance offered by outside sources; this is particularly true when they cannot internally generate the needed revenues to deal with energy development impacts. These sources include State, industry, and Federal organizations.

Assistance from the State

The table on page 30 shows for fiscal year 1980 the amount of severance and extraction tax receipts and the portion allocated to areas of origin and energy impacted communities.

There is a wide range in not only the amount of taxes collected by each State (from $2.4 to $105.7 million) but also the formulas used to distribute the receipts. For example, in Montana the oil and gas severance tax receipts generally go to the county of origin and in North Dakota 70 percent of the coal severance tax receipts go either to the area of origin or to the energy

Table 1

Rocky Mountain States Severance and Extraction Taxes

State	Name of tax	Resource taxed	Rate of taxation	Preliminary FY 1980 receipts (millions)	Distribution of receipts
Colorado	Severance	Coal, oil, gas, metals, molybdenum, and oil shale	Varies, e.g., for bituminous coal the effective rate is 4.8 percent for surface coal and 1.2 percent for underground coal and for oil and gas, 1 mill per $1 market value at wellhead.	$ 31.1	Prior to 7/1/81 distribution varied for coal; in fiscal year 1981 20 percent went to State general fund, 35 percent to State trust fund, and 45 percent to areas of origin and energy impacted areas. As of 7/1/81 all severance tax receipts have been divided equally between two trust funds, one of which will provide payments to areas of origin and energy impacted areas.
Montana	Severance	Oil and gas	Progressive gross value tax from 2.1 percent to 2.65 percent of value	10.6	County of origin (note a)
	Severance	Coal	Varies--based on value: 20 percent or 30 percent for surface mines, 3 percent or 4 percent for underground mines.	75.1	Distributed to 12 accounts; one to provide grants to areas impacted by coal development received over $9 million (12 percent) in FY 1980.
Montana (TOTAL)				85.7	
North Dakota	Severance	Coal	$.93 a ton for second half of 1980.	14.2	35 percent directly to impacted areas; 15 percent to trust fund from which loans may be made to impacted areas; 20 percent to coal producing counties, cities, and schools; 30 percent to State general fund.
	Production	Oil and gas (note b)	5 percent of gross value at the well.	29.7	Based on graduated-scale basis. In FY 1980 producing counties received $7.6 million (26 percent) and the remainder went to State general fund.
	Conversion	Coal	1/4 mill per kilowatt-hour of electricity produced for sale.	2.9	35 percent to county of origin; 65 percent to State general fund.
North Dakota (TOTAL)				46.8	
South Dakota	Severance	Energy minerals	4-1/2 percent of taxable value.	2.4	1/2--County of origin 1/3--State general fund 1/6--Energy development impact fund
Utah	Severance	Oil and gas	2 percent of gross value	6.9	State general fund
Wyoming	Severance	Minerals, including oil, gas, coal, uranium, and oil shale	Ranges from 2 percent to 10.5 percent of taxable value.	105.7	Various recipients, including State general fund, highway fund, mineral trust fund, and capital facilities revenue account. Also, 19 percent of coal severance tax is used for areas impacted from coal production.

a/The only exception is when the severance tax collected in a county for any fiscal year exceeds the amount collected the previous year and the increase is not due to increased production. This increased amount is allocated to the State general fund.

b/A 6-1/2 percent extraction tax on oil was approved in November 1980. The receipts of this tax are to be used as follows: Support for education 45 percent; State general fund and tax relief 45 percent; and special trust fund 10 percent.

Source: Derived from data furnished by State officials. Data on receipts from U.S. Department of Commerce.

impacted areas. In Utah all of the severance tax goes to the State's general fund. For the other taxes listed, from 12 to 66 percent of these receipts go to areas generating the taxes or impacted from energy development.

It should be noted that the amount of these taxes collected depends on not only the tax rate but also the level of production and the price of energy. The more resources produced and the higher the energy prices, the greater the tax receipts of the States. For example, in Wyoming the severance tax receipts for coal, oil, gas, and uranium more than doubled from $44.7 million in 1977 to $100.1 million in 1980. These receipts are projected to be $411.6 million in 1985, a fourfold increase over 1980.

Federal mineral leasing revenues

Section 317 of the Federal Land Policy and Management Act of 1976 (Public Law 94-579) requires one-half of all revenue collected from Federal mineral leases to be returned to the State in which the leased lands or deposits were located except Alaska which receives 90 percent. The act stipulates that the funds, except those returned to Alaska, are

> "* * * to be used by such State and its subdivisions, as the legislature of the State may direct giving priority to those subdivisions of the State socially or economically impacted by development of minerals leased under this Act, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provisions of public service * * *."

The degree of priority each State gives to areas impacted by the development of the leased minerals varies greatly. The schedule on page 32 shows the States' fiscal year 1980 share of the Federal mineral leasing revenues and their distribution of it.

Two States, Montana and North Dakota, do not require that their receipts be used to assist energy impacted areas. Although the other four States do make such distributions, the percentages vary. For example, all of South Dakota's share of these revenues goes to school districts in the areas which generate the revenues. In Colorado and Utah the percentages of leasing revenues going directly to areas of origin and/or energy impacted areas range from 26 to 32-1/2 percent.

As is the case with severance taxes, the mineral leasing revenues fluctuate in direct proportion to mineral production. Also the deregulation of oil will increase the leasing revenues. For example, the Department of the Interior estimated that Wyoming's share of the Federal mineral leasing receipts would increase from $133 million in 1981 to about $255 million in 1985. Wyoming's actual receipts went from almost $35 million in 1976 to $115 million in 1980.

The Rocky Mountain States' Receipt and Use of Federal Mineral Leasing Revenues

	Amount allocated in FY 1980 (note a)	State's use of funds (note b)
	(millions)	
Colorado	$ 21.3	In distributing funds, priority is to be given to energy impacted areas. Grants and loans to impacted areas--15 percent. Directly to counties of origin--11 percent. Public schools and water conservation construction fund--74 percent.
Montana	9.9	Public schools--62-1/2 percent. State highway fund--37-1/2 percent.
North Dakota	4.2	State general fund for aid to schools.
South Dakota	.7	School districts based on amount of land within the district which generates mineral leasing revenues.
Utah	17.0	Grants and loans to impacted communities--32-1/2 percent. State colleges and universities--33-1/2 percent. Board of Education, water research laboratory, and State's geological and mineral survey--6-3/4 percent. Various uses including school building program and water system improvements--27-1/4 percent.
Wyoming	115.0	Highway fund for counties of origin--2-1/4 percent. Highway fund--26-1/4 percent. School equalization and University of Wyoming--44-1/4 percent. Capital construction accounts (projects in areas impacted by leased mineral development are given priority)--19-3/4 percent. Cities and towns--7-1/2 percent.
Total	$168.1	

a/Data on receipts from U.S. Department of the Interior data.

b/Derived by GAO from data furnished by State officials.

Payments on oil shale tracts

The Federal Land Policy and Management Act states that funds held as a result of the act by Colorado and Utah as of October 21, 1976, from the Federal oil shale test leases be used by the States with priority given to socially or economically impacted areas. Between 1974 and 1976, Colorado received nearly $74 million of these funds and since 1975 has distributed over $55 million, primarily for projects in oil shale impacted areas. In 1981 the Colorado State legislature approved the distribution of the remaining balance of oil shale funds ($19 million plus $25 million in interest) for projects in a four-county area of western Colorado which is the focus of oil shale development in the State.

Funds from oil shale test leases in Utah have not been available for impact mitigation. The funds, about $72 million of which about $36 million would revert to the State, are being held in trust pending a legal determination of the ownership of the oil shale lands. The Supreme Court in May 1980 ruled against the State of Utah in their claim of ownership. The case is still under litigation and the funds still held in trust, however, because an Indian tribe is now claiming ownership.

Industry assistance

The amount of assistance received by communities from energy companies varies. For example, the mayor of a Colorado community told us that they had received very little funding assistance from energy companies. Utah Power and Light, operator of a coal-fired powerplant near Huntington, Utah, however, provided Huntington with a $450,000 grant for their water system. Battlement Mesa, Colorado, is being constructed by a subsidiary of Exxon, U.S.A., in anticipation of heavy oil shale development. Several million dollars of industry funds will be provided for the new town.

Industry officials realize that the lack of adequate housing and a pleasing environment could adversely impact their recruiting efforts and cause high employee turnover. Therefore, companies have, in some instances, at least provided or financed housing for employees. For example, an official of Occidental Oil Shale Co., told us that it will cost about $8,000 to recruit, relocate, and train each oil shale worker. To reduce employee turnover, and thereby reduce company expenses, Occidental has prepaid rents on apartments and has purchased land for apartment, home, and trailer park construction in Rifle and Meeker, Colorado. An Occidental official told us that in the long run, it will be less expensive for the company to finance housing and help mitigate impacts than to be faced with high turnover.

Battlement Mesa, Inc., a wholly owned subsidiary of Exxon U.S.A., is constructing the town of Battlement Mesa in western Colorado for the Colony Oil Shale Project. According to the President of Battlement Mesa, Inc., as of April 1981 this company had spent $25 million on the town and will invest additional

millions in the future. Exxon and TOSCO are partners in the Colony project. The 3,000 acre town will have 7,200 living units with a supporting retail commercial area, an office park, recreational areas, schools, churches, and other institutional facilities for the projected 20,000 population. According to the President of Battlement Mesa, Inc., the schools will be leased to the school district with lease payments being applied to the purchase price of the schools. The school district will, therefore, not be required to finance new schools before its tax base has been sufficiently increased.

Some industry assistance results from State and local government requirements. Wyoming's 1975 Industrial Development Information and Siting Act requires a developer, among other things, to submit proposals for alleviating social and economic impacts prior to construction of large industrial projects. The developer can be required to mitigate these impacts. For example, developers can be asked to provide direct loans and grants to a political subdivision.

Colorado has attempted to encourage industry contributions for mitigating impacts by providing severance tax credits for certain donations. Colorado essentially allows a company to prepay severance taxes. We were told by a State official that some companies do not prepay their taxes because Internal Revenue Service regulations only allow such a payment as a deduction when the tax is actually due, not when it is paid. 1/ An official of Northern Coal Company, however, told us that his company has taken advantage of this program since its employees will get an immediate benefit from the prepaid taxes. Without such a provision, there is no assurance that a company's severance taxes will ever get to the area impacted by its operations. (See discussion on p. 29.)

Another reason for companies to mitigate development impacts is that local governments may require it as a condition for obtaining permits. Although we did not determine how widespread this practice is, we found that Garfield County, Colorado, only issues permits for oil shale development when it receives assurances that socioeconomic impacts will be mitigated. As a condition to obtaining four land-use permits from Garfield County for oil shale facilities, Union Oil Company of California agreed to several requirements including:

--Providing Garfield County with $80,670 annually for its police department and Parachute, Colorado, with $43,880 annually for law enforcement purposes.

1/Under Internal Revenue Code 461 and its implementing regulations, a payment of taxes can only be deducted for the year in which it becomes due. Therefore, the tax cannot be deducted in the year paid, if it was not due in that year.

--Paying $12,500 annually to Parachute for administrative expenses and emergency medical services.

--Providing a school district with financing for a 225 student capacity school.

--Prepaying to Parachute 200 water and sewer tap fees totalling $600,000.

Direct Federal assistance

In addition to the Federal mineral leasing and oil shale test lease revenues returned to the State of origin, there are several other sources of Federal funds for energy impacted communities. One of these, the Energy Impacted Area Development Assistance Program (EIADAP), was established by section 601 of the Powerplant and Industrial Fuel Use Act of 1978 to provide assistance to areas adversely impacted by coal and uranium development. (See page 13.) The assistance can be grants for planning and/or site acquisition and development. As shown in the following chart the six Rocky Mountain States have received about $18 million in such funds during 1979 and 1980, the first 2 years of the program.

State	Fiscal year 1979	Fiscal year 1980	Total
Colorado	$1,408,000	$ 2,733,000	$ 4,141,000
Montana	286,500	1,105,000	1,391,500
North Dakota	769,000	2,020,000	2,789,000
South Dakota	551,000	485,000	1,036,000
Utah	75,000	1,591,500	1,666,500
Wyoming	2,158,000	5,002,000	7,160,000
Total	$5,247,500	$12,936,500	$18,184,000

Rocky Mountain areas impacted by energy development have other Federal programs from which to seek assistance in mitigating impacts. The Mountain Plains Federal Regional Council identified at least 100 Federal assistance programs which are available for economic development and improvement projects, and could assist energy impacted areas. Many of these programs may be of limited help to most energy impacted communities since they were not designed for areas experiencing rapid growth, but others have offered substantial funding for impact mitigation.

Certain Federal programs appear to have great potential for mitigating energy development impacts; one such program is the FmHA's Water and Waste Disposal Systems for Rural Communities Program. To be eligible for funding, an area must not have a population in excess of 10,000. Although energy impact is not a criterion for assistance, the program has been helpful to such areas. For instance, between 1972 and 1981, the energy impacted community of Huntington, Utah, received $1,220,000 in such assistance, which represented 21 percent of its capital construction expenditures for that period.

Another Federal program providing assistance to impacted areas is the Environmental Protection Agency's Construction Grants for Wastewater Treatment Works program. The program, available to any municipality or other entity having jurisdiction over waste disposal, provided nearly $4 billion in grants during fiscal year 1979. Two coal impacted towns in Utah, Castle Dale and Orangeville, received one grant for almost $1.8 million for a new sewer system. This one grant was larger than the total assistance provided by the EIADAP to Utah during fiscal years 1979 and 1980.

The Department of Housing and Urban Development awards block grants to local governments to fund a wide range of community development activities. These grants finance activities previously eligible under separate categorical grant programs, including those for urban renewal, water and sewer projects, and public facilities. Although the grants are not specifically targeted for communities impacted by energy development, such communities may qualify and have received them. For example, Beulah, North Dakota, received a $475,000 block grant in 1979 for a community rehabilitation project consisting of housing rehabilitation, street improvements, and a park. Also in 1979, according to its Administrator, Price, Utah, another coal impacted community, received a $745,000 block grant for a park and public facility.

As discussed on page 13, the EIADAP funds were substantially cut in fiscal year 1981, none were appropriated for fiscal year 1982, and none were requested for fiscal year 1983. This is in line with the current administration's policy to reduce Federal spending and to return responsibility for many programs to the States. This could mean that some of the other Federal programs being used by communities to meet their needs could be reduced or eliminated. For example, the Office of Management and Budget estimates that grants for community and regional development under a variety of Federal programs will be reduced $18.8 billion from $105.0 billion in fiscal year 1980 to $86.2 billion in fiscal year 1982. 1/

OBSERVATIONS

With the burgeoning energy development in the Rocky Mountain States, local, regional, and State governments should be prepared to deal with the impacts. This preparedness begins with effective planning and carries through to finding the resources to deal with the impacts. In our review of the six-State area, we found that timely and accurate information is an integral part of the planning process. Without it, communities are forced to react to the impacts, rather than prepare for them. We found that there are several sources of funds and technical assistance available to the communities to assist them in their planning

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1/"Fiscal Year 1982 Budget Revisions," March 1981.

efforts. Regional organizations, such as the Southeastern Utah Association of Local Governments and the North Dakota planning regions, assist the communities and are particularly important to small rural communities and counties which do not have the expertise or the funds to hire professional planners.

Our review did not include a determination of whether all the six-State area was, or could be, serviced by such regional organizations. In our opinion, however, these types of organizations have helped local communities and counties and could possibly be used in other areas inside or outside of the region.

The same rationale holds for the various energy development siting laws we identified. States can, through their siting laws, require socioeconomic impacts to be mitigated as a condition for receiving a necessary permit. Local, regional, and State organizations should look beyond their physical boundaries and existing laws and regulations to seek alternative means of dealing with these impacts.

In our opinion, there are various sources of funds available to local areas to deal with impacts from energy development. Although the Energy Impacted Area Development Assistance Program is the only Federal program which has exclusively targeted funds for impacts from inland energy development, other Federal programs have been utilized. The Federal Government will continue to provide grant funds, although as stated on page 36, programs may be reduced or eliminated, and will also provide mineral leasing receipts. The State's ability or willingness to assist such areas by distributing their share of Federal mineral leasing and severance tax receipts varies greatly. Industry assistance also varies, although certain ones have made substantial contributions to energy impact mitigation.

The many variables involved at the local level, such as size and condition of infrastructure, tax base, ability to tax the energy development activity, and the State's level of assistance, are all factors which should be addressed in determining which communities need assistance and to what extent. The relative fiscal capacity of the local communities, as measured by their per capita income and taxing capacity, should be considered. Also, the degree of credit to be given for the local and State governments use of existing sources of revenues, such as severance tax and Federal mineral leasing receipts, should be factored into such decisions.

CHAPTER 4

PROSPECTS FOR INCREASED ENERGY DEVELOPMENT IN APPALACHIA AND THE EASTERN INTERIOR COAL REGION

The energy development situation in Appalachia and the Eastern Interior Coal Region is quite different from the Rocky Mountain area. As opposed to the rapid development and associated impacts now being experienced in the Rocky Mountain area, the States in these two regions, for the most part, have yet to experience significant impacts from recent energy development. The Appalachian States were, however, impacted from 1940 to 1970 by the national demand for their coal resources. While current coal production is increasing, it does not match the magnitude nor pace of western development.

Determining when and if future energy development in Appalachia and the Eastern Interior areas will expand significantly involves more speculation than hard evidence. As discussed in chapter 2, there are many variables which can impact the pace of development such as price competitiveness, environmental standards, and the scope and pace of synthetic fuels development. Also, determining whether the areas will be able to adequately deal with the impacts from such development depends on many site-specific variables such as population size and growth rates, local institutional capabilities, and service and retail businesses.

The ability of local communities in Appalachia to deal with impacts of energy development vary considerably. Uncertainty of development, unavailability of information, funding limitations, and jurisdictional problems also compound the problem.

Appalachia is, however, receiving assistance to plan for and mitigate energy impacts from a variety of Federal entities including the Appalachian Regional Commission (ARC). Also, local development districts established by the ARC do regional planning, solicit local projects, and provide a variety of technical assistance to local communities in developing plans and monitoring projects.

CHARACTERISTICS OF APPALACHIA

Appalachia may be defined as a 195,000 square mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi. It includes all of West Virginia and parts of 12 other States: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia.

The Appalachian area impacted by coal mining and processing activities is often dominated by small rural communities that

are economically distressed. Appalachia's population is generally more scattered and less concentrated than the national population--60 percent of the Nation lived in large urban areas in 1970, compared to only 30 percent in the region; at the opposite extreme, 45 percent of Appalachia's population lived in dispersed locations, compared to a national average of only 22 percent.

Before 1965, many parts of Appalachia experienced economic imbalances and cycles of "booms and busts." Demand for the region's natural resources, for a variety of reasons, was not accompanied by a comparable return investment in the region's human resources. Overemphasis on a natural resource based economy for 40 years--timber between 1890 and 1930, and coal between 1900 and 1930--created economic and social hardship during the following decades.

Appalachians, confronted with massive unemployment, had few alternatives: they could remain in the region and attempt to compete for the few available jobs, subsisting if necessary at lower levels of economic well-being and relying on Federal, State, and local relief efforts; or they could seek jobs outside the region. Many chose the latter. Over 4 million people left Appalachia between 1940-70. Many were between the ages of 18 and 64--the region's actual or potential work force.

With Appalachia's work force went much of its potential tax base. Those too young or too old to leave the region as well as those who chose to remain were confronted with growing distress. A weakened tax base meant less State and local funds to maintain or provide basic needs such as adequate school systems and health care facilities.

According to the ARC, from 1970 to 1980 the out-migration trend began to reverse. During this period the Appalachian area gained an average of about 100,000 people a year from in-migration. Between 1965 and 1978, the area added about 1.8 million jobs. This job increase brought Appalachia's official unemployment rate down to a level more nearly approximating that of the Nation; Appalachia's unemployment rate in the early 1960s had been nearly double that of the Nation.

Within Appalachia, the number of inhabitants per square mile is much greater than the national average. For example, ranking 34th in population among the States in 1970, West Virginia had a population density nearly 30 percent greater than the average for the United States as a whole--72.5 persons per square mile as compared with about 60 for the Nation.

Topography has been a major determinant of settlement patterns. For example in West Virginia, development has tended to be fragmented and follows the course of rivers and streams. Most major urban centers and many small communities are located along waterbodies. Numerous small settlements can also be found in the narrow mountain valleys and hollows. Only 3 percent

of the State's land is urban or developed, with 75 percent in forest and 20 percent in farmland.

Within Appalachia, per capita income generally lags behind the national average. In 1978 only 7 of the 397 total counties in Appalachia had an average per capita income above the national average. In Central Appalachia, which includes areas in the States of West Virginia, Kentucky, Virginia, and Tennessee and covers about 35,000 square miles and 69 counties, per capita income showed a substantial growth between 1965 and 1978, but that area's per capita income was only 70 percent of the national average. Moreover, the area's low per capita income adversely affects the ability of State and local governments to meet the cost of essential services and facilities, since low personal incomes usually mean low tax revenues.

Central Appalachia contains the heart of the Appalachian coal fields. Coal mining employment throughout Appalachia is centered in this region as shown by the following chart.

	Coal miners	Percent of coal miners to total employment in region
Northern Appalachia	53,300	2
Central Appalachia	71,300	12
Southern Appalachia	6,300	1

Source: "Regional Conditions and Impacts: Appalachia," prepared by David C. Williams for the President's Commission on Coal, May 18, 1979.

Central Appalachia is characterized by rugged terrain, land shortages, substandard housing, and infrastructure that has operated at overcapacity for several years. In West Virginia, less than 1 percent of the land is under a 15-percent slope, and the soil is very conducive to periodic, severe flooding. Prices of suitable land for housing are as high as $40,000 to $50,000 per acre, $20,000 per lot. Housing in Central Appalachia is typified by 200,000 substandard units, or 38 percent of the total supply. In Pike County, Kentucky, for example, housing is estimated to be 60 percent substandard. The problems are caused by lack of available land, lack of water and sewer facilities, high cost of constructing housing, and lack of financing. Also, a large portion of the land is owned by out-of-State coal, rail, and holding companies, and is therefore unavailable for development.

Although our review focused on the States in the Appalachian Coal Province, we also obtained and analyzed data on energy development in the Eastern Interior Coal Province. The States in the latter province have not been as dependent on coal as the Appalachian States. Also, the topography of the two provinces is

considerably different. Whereas Appalachia's predominantly mountainous terrain has been a major factor in population settlement patterns, the topography of the Eastern Interior Coal province is predominantly flat with some rolling hills and has not impacted settlement patterns as much. Figure 1 identifies these States and coal provinces.

Coal production statistics compared to population changes

To determine whether there was a relationship between the trends in coal production and population changes, we compared population statistics with coal production statistics for major coal producing counties in Kentucky, Ohio, and West Virginia. For each State, the counties we selected produced about 65 to 77 percent of the State's total coal production in 1970, 1975, and 1979.

In Kentucky, the population in the major coal producing counties has grown considerably faster than statewide. In 1979 the coal production in the selected counties increased 3.8 percent over 1970 production while population growth between 1970 and 1980 was about 22.9 percent. The statewide population growth during this period was about 13.7 percent.

In Ohio coal production declined significantly in major coal producing counties while the population growth rate was higher than the statewide rate. The 1979 coal production in the selected counties was 22.2 percent less than 1970 production while population increased 3.8 percent from 1970 to 1980. Ohio's overall population growth rate during the same period was about 1 percent.

In West Virginia coal production also declined significantly in the selected counties. The rate of population increase in the counties was slightly below the statewide growth rate. In 1979 coal production was 22.6 percent below 1970 production, while population grew 8.6 percent from 1970 to 1980. Statewide population grew 11.8 percent during this period.

These statistics do not indicate any correlation between coal production and population. We did not analyze the statistics to determine what the cause of the population increases were. However, it is evident that coal production was not the cause in Ohio and West Virginia.

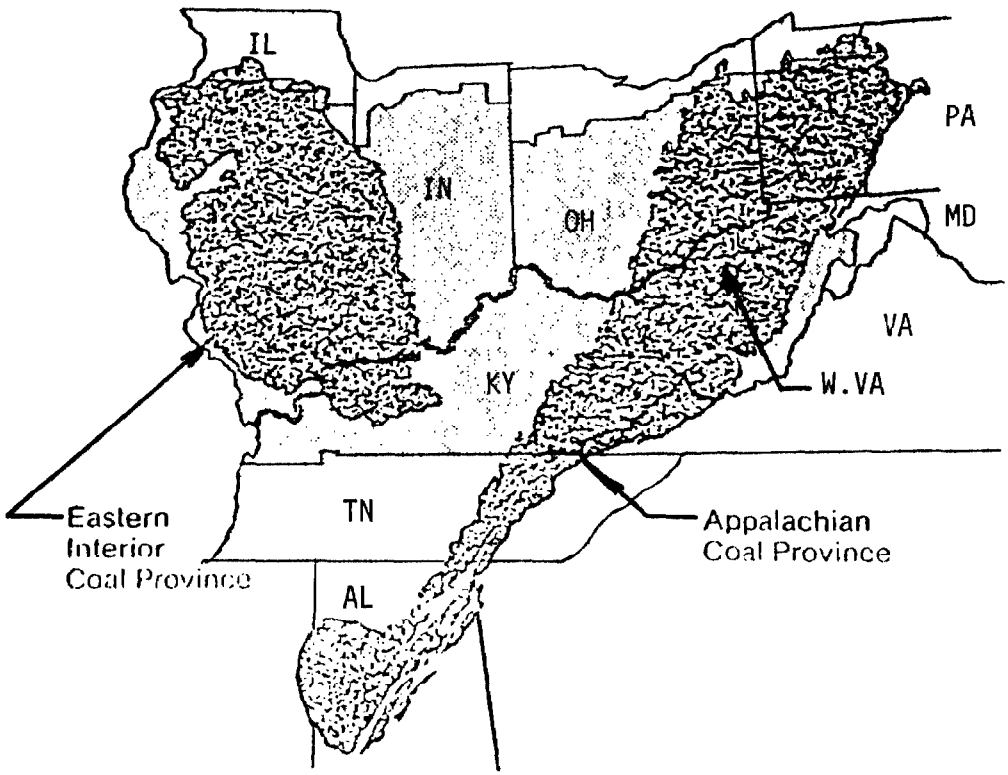
PROSPECTS FOR FUTURE SOCIAL AND ECONOMIC IMPACTS IN APPALACHIA AND THE EASTERN INTERIOR COAL REGION

After reviewing the various potential and current energy developments and projects in Appalachia and the Eastern Interior areas, we believe there are two main types of energy development--coal mining and synthetic fuel projects--which have the potential to cause future adverse social and economic impacts.

Figure 1

Appalachian and

Eastern Interior Coal Provinces



Uncertainties surround the rate and extent of energy development. Also, the social and economic costs as well as benefits of energy development vary from site to site, and from region to region. The severity of impacts depends on such site-specific factors as: local population size and growth rates; population density in the host county and surrounding areas; proximity to regional centers of population; service and retail businesses; and local institutional capabilities to plan for, manage, and finance necessary infrastructure facilities. Therefore, it is difficult to accurately predict where and when impacts will occur and the ability of local communities to handle them on their own.

Given the economic history of Appalachia and its adverse impact on local communities' ability to maintain basic needs, and given the in-migration trend since 1970, some Appalachian communities are trying to provide basic services with deteriorating or inadequate public facilities. This situation could be exacerbated by expanded coal and/or synthetic fuel development, resulting in new social and economic problems and/or compounding of old ones. For example, in eastern Kentucky coal production has increased each year from 1973 through 1979 and population has increased over 20 percent between 1970 and 1980. Conversely, in Central Appalachia, particularly West Virginia, which is heavily dependent on coal mining (in some counties over 70 percent of employment is coal mining), the fluctuations in coal production have adversely impacted its communities. Therefore, while the former area has to cope with the impacts of an expanded population, the latter area would welcome energy or other types of development which could stabilize the local economy.

By the late 1980s, synthetic fuel facility construction coupled with increased coal mining and powerplant construction in western Kentucky and other areas of the Eastern Interior region could create boom town conditions. The commercial synthetic fuel plants will require considerably larger work forces than the powerplants. As a result, these two industries could dominate the construction industry in western Kentucky during the next decade.

Consequently, intense competition for skilled construction labor could result. It is likely that a significant portion of the local construction force in western Kentucky could be used by the powerplant units planned for the region. Thus, a large portion of the peak construction force of 26,820 projected for the synthetic fuel plants for the mid-1980s could come from in-migration. According to the Kentucky DOE, preliminary estimates indicate that if 25 percent of this peak force relocates in the region the resulting population increase could be 25,000; if 50 percent relocates the increase would be 50,000, and so on.

Besides the construction work force the operating labor force for the synfuel plants planned for western Kentucky is projected to be about 7,000. A large portion of these workers

will not be required in the high-skilled crafts and may be drawn from the local unemployed and job switching. In addition, if the synthetic fuel plants require the estimated 37 million tons of coal a year, the expanded coal mining work force required to supply the synfuel plants may be larger than the plants' operating labor force projected for 1990-91.

CONSTRAINTS ON IMPACT MITIGATION

Even when planners and local officials are able to anticipate the difficulties of uncertainty associated with the availability of information, Federal and State funding assistance, and revenues at the local level, impact mitigation can be constrained by several problems--jurisdictional mismatches, timing of revenues, State limitations on taxing and borrowing, public attitude toward debt, and other non-energy related development.

Jurisdictional mismatches

As pointed out by the Kentucky Legislative Research Commission in a memorandum dated December 18, 1980, to the Interim Joint Committee on Appropriations and Revenue, the local governments which will be required to provide additional services to new temporary and permanent residents associated with the synthetic fuel plants will not necessarily be the local governments in whose jurisdictions the plants will be built. In addition, the extremely hilly Appalachian terrain and traditionally scattered patterns of settlement may lead to jurisdictional mismatches in portions of Appalachia. Mismatches between the energy project location and community development areas will only intensify community development problems because of capital availability problems. The basic reason for the mismatch problems lies in the predominant means of local public finance--real property taxes--in which the local property tax base is a major determinant of a community's ability to raise capital and pay operating expenses.

Financing leadtime

Local governments may be typically required to provide substantial additional services before additional revenues are available to finance the services. For example, the western Kentucky synfuel plant construction labor requirements are projected to peak before the local governments begin to realize property tax revenues. By that time, the leadtime for capital improvement or expansion projects will be gone. Again, this problem is associated with the basic means of generating local revenues--property taxes.

State limitations on taxing and borrowing

Taxing power and borrowing capabilities are important factors when considering revenue sources for capital requirements. As discussed previously, local finances are influenced by the

States which limit tax rates and establish debt ceilings. For example, the West Virginia State constitution states that general obligation bonds must have 60 percent voter approval and debt must be limited to 5 percent of a county's or municipality's assessed valuation. In addition, States such as West Virginia may supervise tax assessments and approve levy estimates for local jurisdictions.

Public attitude toward debt

As previously discussed, the uncertainty about the timing and duration of energy related growth makes it difficult for local governments to plan for future needs. Consequently, voters may fear a boom-bust cycle, such as those which have occurred in Appalachia, and refuse to bond themselves for improvement projects without any guarantee of increased revenues.

Other non-energy related development

Pinpointing community development impacts directly attributable to a specific energy project is difficult. Construction of an energy facility is seldom the sole impact on an area. For example, construction of a 1,250-megawatt powerplant began in 1973 in Pleasants County, West Virginia. The construction force peaked in early 1978 at about 2,700 workers. This was the only energy-related development occurring in the area at the time since this area of West Virginia does not contain any coal reserves. However, the powerplant construction was paralleled by unrelated expansion of new manufacturing plants, the belated impacts of the closing of a large factory, construction of a major bridge, and several other activities. Consequently, assessing the impact of the powerplant is difficult, since the other industrial activities have also impacted local communities.

PLANNING FOR ENERGY DEVELOPMENT

Baseline economic and demographic data about regional areas is usually available due to State and local government efforts to promote economic development. State and regional economic goals lead State and regional planners to develop and maintain demographic and economic information to highlight the attractiveness of areas to business and industrial investors as well as to identify barriers to economic growth. The difficulty with obtaining useful information for mitigation planning, however, is that local communities and planners must usually depend on industry or company estimates of the size, timing, and construction rates of a project. Even if industry is very cooperative, two factors may compound the problems of planning for impacts: (1) projects may remain in a proposal status for an indefinite period of time, usually until there is a financing commitment for construction, and (2) other energy projects or construction projects which may also cause adverse impacts may be planned for the same area. Consequently, effective mitigation

planning requires coordination among industry, labor groups, and Government sponsors and planners.

In general, the situation is similar to the Rocky Mountain area in that there is no systematic planning mechanism or framework which assures local, State, and Federal Governments will participate in addressing these factors and in developing mitigation strategies and plans for all energy projects. The degree of direct State and Federal involvement, as well as private sector involvement, depends on the nature, size, and sponsorship of the energy project. In the Rocky Mountain States we identified some regional organizations which provide assistance to local areas. These groups were formed on an ad hoc basis to respond to energy development. This differs from Appalachia where the Appalachian Regional Commission established Local Development Districts to formulate regional plans and development policy, not just in response to energy development. Therefore, in the Appalachian States, these substate or regional planning organizations are more pervasive and, as the next section discusses, represent and help local communities plan for impacts and qualify for Federal assistance programs.

The Appalachian Regional Commission and Local Development Districts

In 1965 the Appalachian Regional Development Act (40 App. U.S.C. 1-405) established the Appalachian Regional Commission (ARC). The act began an experiment in Federal-State-local development planning aimed at correcting economic and social imbalances between Appalachia and the rest of the Nation. The ARC consists of 13 Governors and a Presidential appointee (the Federal Cochairman) responsible for making effective policies and planning for the growth and development of a multistate region. Since 1970 the program has provided about $300 million annually in Federal grants to carry out ARC policies and plans.

ARC focuses on the need to invest in the total resources of a region--its people, natural resources, physical facilities, and its institutions of government--to promote overall growth and development. The act's ultimate objective is to eliminate Appalachia's need for special Federal assistance.

One of ARC's goals is to encourage energy development in Appalachia and it has sponsored studies concerning energy development. One example is Technology Facility Siting Characteristics and Infrastructure Needs (August 1976). It examines the various types of coal conversion facilities that could locate in Appalachia, determines what the facility requirements are, identifies a number of candidate areas for conversion facilities, and examines the socioeconomic and environmental implications of facility development.

Another ARC-sponsored report is the Capital Impacts of Energy and Energy-Related Development in Appalachia (October 1978).

It examines whether Appalachian communities accommodating new energy facilities will be faced with public facility investment requirements beyond their financial capabilities.

The ARC was appropriated $150 million for fiscal year 1982 to carry out its programs, of which $100 million will be available for the Appalachian Highway Development System. This is a reduction of $194 million from the Carter administration proposal of $344 million. However, it is significantly different from the Reagan administration's proposed elimination of fiscal year 1982 funding for the Commission.

Local and regional planning in rural Appalachia is done by the Local Development District (LDD) 1/ planning groups. These are local organizations formed to carry out the programs of the ARC. Except for West Virginia which is entirely in Appalachia, the other Appalachian States only have certain of their counties designated as part of Appalachia. In such States, however, the planning system exists in some areas not so designated.

The LDDs are the general purpose body for regional planning and development policy, and they serve as the primary tool for local coordination, implementation, and administration of the Appalachian development plans funded by ARC. Their participation includes regional planning, solicitation of local projects, and a variety of technical assistance in developing plans and monitoring projects. For example, they write the growth management plans and prepare and submit proposed projects for funding under the Energy Impacted Area Development Assistance Program.

The LDDs are knowledgeable about coal mining development in their areas. They watch local newspapers for announcements of mine openings and maintain contacts with local officials of coal companies. They also use the State coal association to obtain forecasting information.

The local planning process involves the study of the local areas in the LDDs to assess the quantity and quality of the infrastructure. Usually, the LDD's policymaking body assembles an area-wide investment strategy or growth management plan which identifies potential Federal, State, local, or combined funding sources. The LDD staff pursue these sources to try to address the identified needs.

1/Local Development District is the general term used to describe substate planning organizations established by State law and responsible for comprehensive area-wide planning within a multi-county area. Different Appalachian States use various terms for their districts, such as Area Development District (Kentucky), and Planning and Development Council (West Virginia).

The LDD's expertise in area planning and grantsmanship is the only government source of such service available to the small, rural communities. These communities rely on the LDD for assistance, which, in turn, identifies and coordinates available funding sources for the communities. The LDD's knowledge of the requirements of the various funding sources allows it to help communities make their proposed projects competitive.

As discussed in chapter 3, we identified some regional organizations in the Rocky Mountain area which assist communities in planning for and dealing with energy impacts. However, they are not as pervasive as in the Appalachian area.

Administrative and project funds for the LDD come from a variety of Federal, State, and local sources. Local funds are raised through per capita assessments on LDD counties and municipalities. A portion of the Kentucky severance tax is given to the LDDs within that State for projects. In addition to covering a major portion of the LDDs planning costs, Federal funds also are used for other operating expenses. For example, for fiscal year 1981, 54.6 percent of the Big Sandy Area Development District's (Prestonburg, Kentucky) operating budget was funded by Federal funds.

The ability of the LDDs to assist local communities is almost totally contingent upon the availability of planning and project funds from the Federal and State governments. For example, Pratt, West Virginia, received funds for a water project totalling $700,000 from EPA, FmHA, State Water Resources Board, Governor's Partnership Grant and Loan Program, and Kanawha County. Also, according to officials of the Big Sandy Area Development District in Kentucky acquiring funding for projects must be synchronized with the funding cycles of various Federal agencies. This is necessary because local communities must leverage one program against another since they often cannot meet the matching requirements of some Federal programs.

State government involvement

Planning at the State level in West Virginia, Kentucky, and Ohio is done by the respective State agency responsible for attracting industry to the State. The objective of these agencies is to bring industrial development to their State. The degree of State involvement in planning for the associated impacts, however, varies by State.

The economic development goals in these States are generally consistent with local community goals. The local community links community development and economic growth together. Increased jobs means an increased tax base, which in turn will help finance new or improved infrastructures. The State's goal of attracting economic growth and development is viewed favorably by local officials and trade unions. For example, at public hearings in

western Kentucky for the SRC-I coal liquefaction demonstration facility, there was an overwhelming turnout of union members speaking favorably for the siting of the facility in Kentucky.

Both Ohio and Kentucky have encouraged the development of synthetic fuels projects in their States. Ohio has promoted the development of a coal gasification plant in eastern Ohio which would utilize high-sulfur coal in the production of natural gas. Most of Ohio's coal is high-sulfur content, and because of Environmental Protection Agency regulations for its use, the domestic market for this coal has been poor. Kentucky has attempted to attract synthetic fuel development since the early 1970s. The synfuel plants planned for western Kentucky will use primarily high-sulfur coal, which is the predominant type of coal in Kentucky's western coal fields. Ohio and Kentucky have also been active in research and development efforts to find uses for high-sulfur coal which meet the Environmental Protection Agency's regulations on air quality.

The degree of State involvement in planning activities varies. For example, while Kentucky officials have been active in planning for the mitigation of energy related impacts from development they attract to their State, others have not. Kentucky officials have developed a planning guide that establishes a basis for assessment and planning for the Kentucky synfuel industry and have formed a synfuel coordination committee to oversee the State's involvement in the development of this industry. Kentucky also prepared a consolidated State plan as a result of its participation in the Energy Impacted Area Development Assistance Program. In contrast Ohio and West Virginia have not funded efforts to specifically mitigate adverse impacts of energy development. (As discussed in the next section and beginning on page 54, Federal funds have been used for such purposes.) Also, although individual area plans were developed by the LDDs, no consolidated, comprehensive State plan has been prepared.

The coordination of coal-fired power generating facility sitings also varies by State. The permitting process in West Virginia does not gather data on the socioeconomic impact of the siting of a plant. Ohio has a Power Siting Commission which requires new facilities to go through a formal procedure, including the analysis of the human, environmental, and any socioeconomic impacts of siting a facility. Although Kentucky does not currently require a socioeconomic impact analysis for a proposed plant, it is developing a requirement for this type of analysis.

Federal agencies

Several Federal agencies provide planning assistance to States and local communities, not only in Appalachia but in other regions of the country, to mitigate adverse impacts related to energy development. DOE is involved in the Environmental Impact

Statement (EIS) process and labor assessments when Federal funds are involved in major energy development including synthetic fuels. Some other agencies provide funds to assist local community planning or to assess a particular need.

DOE has sponsored studies to develop methodologies for socioeconomic analysis. It funded a Regional Issue Identification and Assessment Report and helped prepare a Report to the President on energy impact assistance in March 1978. DOE has also provided site-specific reports on the socioeconomic impacts of energy development.

DOE is the lead agency for the EIS process when significant amounts of Federal funds are used to construct a synfuel facility. It conducts these EIS studies to assess the environmental impacts of constructing a facility, including the socioeconomic impact on the human environment. The proposed SRC-I synfuel plant at Newman, Kentucky, had the EIS prepared by DOE through its Oak Ridge National Laboratory.

Labor assessments may also be prepared by DOE for areas potentially impacted by synfuel development. These assessments provide data to local planners and to the EIS process. DOE conducted these assessments for SRC-I through Oak Ridge Associated Universities.

DOE has also conducted site-specific studies of socioeconomic impacts. For example, it studied Wayne County, West Virginia, to determine the effects of two large mine openings. It funded a study of the cumulative socioeconomic impacts of building both the SRC-I facility and the Big Rivers power generating plant at Newman, Kentucky. DOE also contracted with Batelle Columbus Laboratories for a socioeconomic study on the effects of building the uranium enrichment plant at Piketon, Ohio.

In addition to DOE, several other Federal organizations have been involved in planning. For example, the Economic Development Administration has provided support to sub-State planning districts and to the development of long-term State level planning. The Department of Transportation sponsored an inventory of coal-haul roads in 1980 in order to determine needed improvements.

FUNDING THE PROJECTS TO ADDRESS IMPACTS FROM ENERGY DEVELOPMENT

In addition to planning for energy development, the area to be impacted must also have available the financial resources to alleviate the impacts. Therefore, community planners and local officials will use whatever Federal, State, or private assistance is available.

However, when communities look to the Federal and State government for assistance, some have found that their priorities

have to be tempered by the availability and program requirements of the various assistance programs. Since State funding assistance is sometimes tied to the Federal program, the State assistance may not be able to provide the funding flexibility needed for local communities to follow their capital program priorities.

Local revenues

Various sources of revenue are involved at the local government level since counties, townships, cities, villages, and special districts become involved in generating revenues and providing services. Property taxes, local government taxes, fees, fines, licenses, and bonds are commonly used to generate revenues. Limitations, however, may be imposed by statute on property and sales taxes as well as bonding capacities.

In general, property taxes and bonds are the primary sources of local revenue. In Kentucky, for example, county and local government's ability to borrow is restricted by the State constitution. However, special purpose districts, boards, and authorities have assumed an important role in providing local services, because as "corporate units," they can exceed the limits on taxation and debt financing imposed by the State constitution and statutes and can issue revenue bonds which are supported by fees or taxes. These have become the principal instrument to finance local capital construction for many municipal functions.

West Virginia State law also places restrictions on local community borrowing. Municipalities' and counties' bonding capacity is limited to 2.5 percent of assessed property value. In the State's coal producing counties low bonding capacity and the State requirement to retire the bonds from local budget operating funds may limit the use of bonds.

Kentucky House Bill 44 was enacted in 1979 to slow the rate of tax increases caused by the rapid rise in property values. The law limits the annual State and local real estate tax rates to a level which will only provide a 4-percent increase in revenue. As a result, the State rate has declined about 23.5 percent from 1978 to 1980, which represents almost $38.4 million in potential revenue which was not realized.

Although local taxing districts are also subject to the provisions of the law, they are subject to different rules. For example, local communities can increase the amount of revenue beyond the 4-percent revenue limitation by subjecting the tax rate to a public hearing or obtaining taxpayer approval by means of a referendum. In addition, revenue from new property, such as a new synfuels plant, is not included in the tax base when calculating the maximum tax rate at the local level. This provision allows local communities to take advantage of the significant property tax revenues that could accrue from new synthetic fuels facilities. For example, the Kentucky Legislative Research

Commission in a memorandum dated December 18, 1980, to the State Interim Joint Commission on Appropriations and Revenue estimates that the plants proposed for Henderson County could increase the county's tax base over 900 percent.

On the other hand, the State level revenues generated from these facilities would be much less because the law requires such new property to be included in the State's tax rate calculation. Therefore, the State would have to hold its tax rate at a level which would only produce a 4-percent increase in revenues over the previous year. The Kentucky Legislative Research Commission memorandum recognized this situation and stated that House Bill 44 could be amended to allow additional revenues from new real estate to accrue to the State. They recognize it would slow down the rate of decrease in the State property tax rate, the purpose of the law, but believe the additional revenue could well forestall increases in other taxes.

The Commission's memorandum raised several other fiscal problems which the synthetic fuels plant's significant increases to the local tax base do not resolve. The issues are:

--Financing additional municipal and educational services before additional revenues are available to finance them.

--Identification of the local governments impacted by the demand for additional services since they will not necessarily be the local governments in whose jurisdictions the plants will be located.

--Disbursement of tax revenues generated from the synfuel plants.

State assistance

As discussed beginning on page 45 the Appalachian States we visited are involved to varying degrees in planning for energy impacts. These States also differ in how, and to what extent, they provide direct financial assistance to energy impacted communities.

One of the primary sources of State funding assistance is the coal severance tax. The table on page 53 shows for fiscal year 1980 the amount of severance tax receipts and how these receipts were allocated. There is a wide range of taxes collected (from $1.7 million to $176 million) and only the State of West Virginia returns these revenues directly to energy impacted communities.

In March 1980, Kentucky established a "local government economic assistance fund" which will make available any coal severance taxes in excess of $177.6 million to local communities

Coal Severance Taxes

in Kentucky, Ohio, and West Virginia

	Rate of taxation	Preliminary fiscal year 1980 receipts (000 omitted)	Distribution of receipts
Kentucky	4-1/2 percent of gross value and/or $.50 per ton minimum, whichever is greater.	$176,368	Allocated to State general fund and transportation fund. A portion of the fund allocated to the general fund is distributed to counties.
Ohio	$.04 per ton.	$ 1,675	75 percent to State unreclaimed land fund and 25 percent to State oil and gas well plugging fund.
West Virginia	$3.85 per $100 sales. Of this $3.85, $.35 per $100 sales is considered severance tax.	a/ $ 16,343	75 percent allocated to county on basis of percentage of coal produced, 25 percent allocated to all counties based on population.

Source: Derived from data furnished by State officials. Data on receipts for Kentucky from U.S. Department of Commerce.

a/Receipts from $.35 severance tax. Receipts from $3.50 goes to State General Fund.

in the form of grants (30 percent for coal haul roads; 70 percent for other infrastructure needs). However, the assistance fund is projected to total only $6.7 million in fiscal year 1982, with a larger fund depending on increases in coal prices and/or coal production.

West Virginia and Ohio also assist local communities by providing State funds in the form of grants to meet Federal matching requirements. The West Virginia Governor's Community Partnership Program uses State appropriated funds and received $2.5 million in fiscal year 1980.

Federal assistance

Although not specifically targeted for energy development impacts, the ARC, as discussed on page 46, has provided Federal grants to the region of about $300 million annually from 1970 through 1980. In addition, other Federal programs have provided funding to the region for economic and social needs, including the Energy Impacted Area Development Assistance Program (EIADAP).

A March 1978 Report to the President 1/ about impact assistance identified over 100 Federal programs which could assist energy-impacted communities. Since the report was issued, the EIADAP was enacted. The following schedule shows the funding from this program to the three Appalachian States.

	Fiscal year 1979	Fiscal year 1980	Total
Kentucky	$3,114,000	$5,617,500	$8,731,500
Ohio	1,045,000	1,636,930	2,681,930
West Virginia	3,218,000	6,077,500	9,295,500
Total	$7,377,000	$13,331,930	$20,708,930

Most of the other programs are categorical grant programs. As such, prospective participants must meet specific program requirements and limitations. These limitations can restrict participation by the small, rural, Appalachian communities. For example, some Federal programs, such as Housing and Urban Development's (HUD's) Comprehensive Planning, have set a percentage allocation to individual States based on their share of the national population. Consequently, communities in more sparsely settled States, such as Kentucky, may be competing for a limited amount of money.

1/Report to the President: Energy Impact Assistance, Mar. 1978. Published for the Energy Impact Assistance Steering Group by DOE.

Although the Federal Government also helps finance housing, some program requirements limit their application in Appalachia. For example, one Federal program is the Federal Housing Administration's (FHA) mortgage guarantees which may be necessary in some cases for local financial institutions to sell mortgages in the secondary market. In central Appalachia, there is potential for shortages of credit for housing. However, Federal mortgage guarantee programs may not be used due to the inability of builders to meet FHA, Veterans Administration, and FmHA design standards for subdivision rights of way, water and sewer systems, etc. Also, as discussed on page 36, some Federal programs used by local communities are being eliminated or will operate with reduced funding.

Assistance from industry

During our review, unlike the Rocky Mountain area, we were neither informed of nor did we identify any projects for which energy developers were providing direct funding assistance to mitigate socioeconomic impacts.

OBSERVATIONS

Energy impacts are site-specific and vary considerably depending on not only the characteristics of the local area and its resources available to meet the impacts but also the type of development. While portions of Appalachia with limited tax bases have inadequate or aging infrastructures that have been adversely impacted from previous boom-bust coal production cycles, the Eastern Interior Region, particularly western Kentucky, may experience impacts from proposed energy development. Some areas of Appalachia such as eastern Kentucky, however, have experienced continual increases in coal production since the mid-seventies. In these areas increased coal production could intensify existing infrastructure problems as well as create demand for new public facilities and services.

To the extent possible, local communities need to gain negotiating leverage by establishing mechanisms which bring private energy developers into the planning process. This can help communities obtain planning information as early as possible, as well as reduce the degree of uncertainty associated with the planning process. By the same token, energy developers need to recognize the importance of their participation in the planning process. The mutual and early cooperation of local governments and industry is necessary to allow the mitigation process to work. Otherwise, communities may be left with no choice but to belatedly react to impacts rather than avoid or alleviate them.

The responsibility for energy development impact mitigation may shift more to the States and private sector as some Federal programs are reduced or eliminated. To help resolve planning and financing difficulties at the local community level, States need to play an active role in anticipating impacts as well

as working with local governments to overcome the problems of jurisdictional mismatches, timing of revenue availability, and financing limitations associated with property taxes and bonding capacities. Kentucky has already recognized the need to address these problems.

CHAPTER 5

ENERGY DEVELOPMENT IN THE COASTAL ZONE--

IMPACTS AND RESPONSES VARY

The coastal zone can be defined to include the States bordering the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, Alaska, and Hawaii. During our review, we concentrated on the Atlantic, Pacific, and Gulf regions. We did not include Alaska, since it is a unique frontier area, nor the Great Lakes region and Hawaii since they have minimal energy development.

Unlike the Rocky Mountain and Appalachian areas, the coastal zone cannot be characterized as one distinct region. It hosts a wide variety of energy activities including offshore and onshore exploration for and production of oil and gas, refineries, coal export facilities, liquefied natural gas facilities, and nuclear and fossil-fueled electric generating plants. There are areas where energy development is concentrated and has been ongoing since the early 1900s, such as Louisiana and southern California. Other offshore areas, such as parts of Alaska, the Eastern Gulf of Mexico, and the Atlantic regions, are just now being explored and commercial production has not yet begun. Overall, the accelerated exploration of oil and gas in the OCS and the increased demand for coal exports with the resultant need for port facilities appear to be the major activities projected for the coastal zone in the near future.

The effects of ongoing and future development are also diverse. The character and experience of energy development differ as do the States' and local communities' ability to handle the impacts. There are some States which have a continuing problem with overburdened public facilities and are using a variety of State and Federal funds to deal with the problems. Others can either absorb the impacts or have resources to mitigate them.

ENERGY DEVELOPMENT CAUSES VARYING IMPACTS AND RESPONSES

Energy development effects on a community can be tracked in phases. At the beginning of the development phase, public sector costs for facilities and services rise much faster than the revenues generated. This can produce negative socioeconomic effects on the host community. These impacts usually stem from the influx of energy workers and their families which increase an area's population to the point of burdening the existing housing and public facilities and services. Some problems which might occur include a short supply of permanent and rental housing, inadequate solid waste disposal, and overburdened medical facilities, schools, transportation systems, and law enforcement. Also, the ability of communities to handle these impacts vary depending on the size of the existing population, the

infrastructure in place at the time of the impacts, and the resources available to the community.

As the development phase ends, revenues generally outrun costs by a wider margin than costs exceeded revenues prior to the development. This is because energy development usually brings significant economic benefits to an area. For example, new population generally brings an increased tax base in the form of property and sales tax. Also, in some cases revenue is generated by severance tax on the minerals produced. Energy development brings employment opportunities to the area not only in the energy industry itself, but also in the services required by the new population.

An August 1980 Department of Commerce study states that for the coastal zone areas there are only rare instances that the public costs of correcting socioeconomic effects are not compensated by later increases in public revenue. While this may be true, there are instances where this and the other conditions described above may not exist.

One is if the deficit is not followed by a revenue surplus as in OCS development where the States and communities are not able to tax the actual energy facility but are limited to taxing onshore support facilities. The same situation could also exist if the revenue generated goes to the State level and is not passed back to the local community being impacted.

There are also cases in the coastal zone where an area has an underutilized infrastructure capacity which may or may not be usable, has significant unemployment, or is a very large community. For example in the Atlantic region, States such as New Jersey and Massachusetts encourage locating facilities in areas with underutilized infrastructure capacity. In this case, unless the infrastructure would require upgrading, the effects of increased energy development could probably be absorbed by the area.

Within the coastal zone, impacts from energy development vary from community to community. Many factors contribute to this diversity, and, as the examples just discussed illustrate, the resources available at the State and local level to handle the impacts also vary. The following sections provide a contrast between two coastal regions and within the regions to illustrate how impacts differ from location to location.

The situation in Louisiana

Louisiana has been involved in energy development since the early 1900s with the first offshore development out of sight of land beginning in 1947. It has sought to attract and promote development of an energy industry because of the accompanying economic benefits. The Administrator of Louisiana's Coastal Energy Impact Program stated that the increased population stemming from this development over the years, however, has placed a burden on existing housing and public facilities in

areas of development. Limited planning and financial resources available at the local level have created a situation where local communities are trying to deal with an ongoing problem of overburdened and/or deteriorating infrastructures.

Before energy development came to Louisiana, its coastal residents were fishermen, trappers, and farmers who lived in and around small towns scattered in sparsely populated southern Louisiana. Energy development brought increases in income and available jobs and, in the long run, tax revenues to the community.

Increased demands were placed on the existing labor market and higher paying jobs in, and related to, the oil industry became available. Drilling rig manufacturers, shipyards, oilfield service companies, oil well drilling companies, and boat companies were all located where oil production was occurring and paid well enough to entice migrants to the area who eventually became permanent residents. This led to a major population growth and, while the new industry and new population would increase the areas tax base in the long run, a strain was placed on the local communities to provide adequate housing and services and facilities for the new population. This occurred because the tax base had gaps, especially in that many who availed themselves of the services and facilities lived outside the area. Also, a considerable lag existed between the needs and the tax base generated to meet those needs.

An example of how the oil industry affected small communities in Louisiana is Morgan City in St. Mary Parish which has benefited from offshore oil and gas development since the 1940s. According to a 1977 report prepared by the University of Southwestern Louisiana, from 1940 to 1970 total employment in St. Mary Parish increased 89.5 percent compared to an increase in total employment of 74.9 percent in the United States and 56.2 percent in Louisiana. Parish income increased twice as rapidly as did that of Louisiana between 1947 and 1973. The report states that much of the income and employment growth in the city and surrounding Parish is a result of offshore development activities. The report also states that even though Morgan City was strained to provide public services and facilities to the increased population, the community support for the oil and gas industry was very strong since it was felt that the benefits accruing to the community far outweighed any difficulties experienced.

Because Louisiana has accommodated energy activity in its coastal zone for about 80 years, it has built up a strong energy infrastructure including on- and offshore wells and their support services; refineries; treatment and processing plants; and transportation systems to move oil and gas produced on- and offshore and their products to other parts of the country. This long-term experience with energy development affects the number of new workers needed for energy development in the region. The Department of Commerce estimates that since the Gulf region has established a permanent base of energy activity,

only between 15 and 25 percent of new oil and gas employees are new residents in contrast to between 30 and 50 percent for frontier areas. Commerce estimates that for fiscal years 1982 to 1986 the entire Gulf region would experience a small influx of new employees in comparison to the number of employees required for new energy activities both offshore and onshore.

Even though Louisiana, with its established energy infrastructure, is not experiencing a large influx of workers, it has to cope with overburdened and deteriorating public facilities and services caused by past energy development, much the same as in certain Appalachian areas.

Types and sources of assistance available

The local government system in Louisiana, the police jury, has been essentially a part-time government entity, and as such has not had the resources to plan for the impacts of energy development, or once impacts had occurred, to prioritize the communities' needs and seek out assistance from State and Federal funding sources. The police jury has historically set policy and left every day government responsibilities to a secretary-treasurer. These responsibilities diversified and increased with the influx of new population due to energy development and the secretary-treasurer did not have the expertise to deal with them.

Assistance has become available to local communities from planning districts established in Louisiana to stimulate economic growth and provide planning and grantsmanship assistance to member parishes and communities. One such district, the South Central Planning and Development Commission (Commission) was established in 1972 and has six parishes within its jurisdiction. It is a nonprofit organization which receives funds from prorated dues from member communities and parishes, State funds from the Department of Urban and Community Affairs, and Federal funds primarily from the Department of Housing and Urban Development (HUD) and the Economic Development Administration (EDA).

The Commission's main functions are to stimulate economic growth in the district and assist the local communities in planning and obtaining funds from a variety of Federal programs. For example, EDA provides funds to the Commission to develop plans to stimulate industrial development, to provide technical assistance to member communities, and to assist them in applying for grants. Also, HUD has provided community development block grants to areas in the Commission's district. The Commission provided technical assistance in filing these grant applications, worked as a liaison with HUD and local governments, and helped communities administer the grants.

In 1976 the Commission prepared an overall economic development program for the region to assist local communities in addressing their needs for economic and community development.

The program outlined the potential areas for economic development and means of achieving this development. It also addressed the need for a parish coordinator familiar with dealing with Federal programs so that the local communities could take a more active role in planning for their future.

In 1978 the Commission became involved in assisting its member communities in preparing, under the Louisiana State and Local Coastal Resources Management Act, local coastal zone management plans in line with the State Coastal Zone Management Plan which will attempt to balance mineral activities, population expansion, the fishing industry, and other competing demands to make best uses of the coastal region. According to a State government official, these plans are in various stages of development.

At the State level, the emphasis is similar to that of the planning districts, that is to attract industrial development. The Department of Commerce is responsible for attracting industrial development, including energy industries, to Louisiana. The Department also works with industry and the local communities to select an appropriate site and to alleviate any obstacles to its development. Although the permitting process at the State level also requires an assessment of the socioeconomic impact of the planned facility, there is no central agency responsible for coordinating energy development planning or impact mitigation.

There are no resources at the State or local level currently committed to energy impact mitigation. Louisiana law states that local communities and parishes cannot tax the oil and gas produced within their jurisdiction. The State, however, does have a severance tax for both oil and gas. Currently, oil is taxed at 12-1/2 percent 1/ of its value and gas is taxed at 7 cents per thousand cubic feet. From June 1979 to June 1980, Louisiana received about $523 million in revenues from severance taxes on natural resources, $509 million (97 percent) from oil and gas. The parish in which the minerals were produced receives 20 percent or $500,000, whichever is less, of the severance tax collected on minerals produced in that parish. Of the $523 million received by the State, $20.6 million, or about 4 percent of the total, was returned to parishes.

To preserve the benefits of the oil and gas resources, Louisiana has established an Enhanced Mineral Income Trust Fund beginning with fiscal year 1981. A portion of the revenues from oil and gas production will be deposited in the fund for future use by the State. The fund could total about $250 million by the end of fiscal year 1982 and about $900 million within the next 4 or 5 years. No portion of this fund is dedicated to

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1/Other rates exist for stripper wells and wells that produce an average of less than 25 barrels per day and at least 50 percent saltwater.

energy impact planning or mitigation. The fund was established as a bank account with no specific use assigned to it. According to a staff member of the Louisiana State Senate, there are several proposals about what to do with the fund which may be raised during the Legislature's special session which begins in November. These proposals include a coastal protection program and revenue sharing with local governments.

Louisiana's coastal communities have also received assistance from a variety of Federal sources. As discussed in chapter 1, the Coastal Energy Impacted Program (CEIP) is the only Federal program which targets assistance to energy impacted coastal communities. Louisiana received about 70 percent of the CEIP funds allocated to the Gulf region (43 percent of total program funds were allocated to the Gulf region). Through March 1980, approximately 94 percent of the funds spent by the Gulf area has been for municipal facilities and services including water and sewer projects, hospitals, roads, port development projects, solid waste management, and airport projects. In Louisiana, since it is still trying to alleviate problems that have existed since the 1940s, a large percentage of project proposals continue to be for public facilities. Louisiana's communities have also taken advantage of other Federal programs not specifically designed to assist areas impacted by energy development, such as EDA and HUD programs which provide funds to assist communities in meeting specific needs. However, as discussed on p. 14, CEIP funds were substantially reduced in fiscal year 1981, no funds were appropriated for fiscal year 1982, and no funds were requested for fiscal year 1983. Also, some of the other Federal programs used by local communities are being eliminated or will operate with reduced funding (see p. 36).

The situation in California

California, specifically the southern portion, is similar to Louisiana in that it has a long history of energy development. It has not experienced the same infrastructure problems, since most of its energy development has occurred in areas that could absorb population without adverse impacts. Also, it has developed a strong program to anticipate and manage energy development.

The California Coastal Act of 1976 provides for energy facilities impact planning and management. Unlike Louisiana which has no centralized State agency concerned with the impacts of energy development, this act established the California Coastal Commission which has regulatory and planning authority over all major energy projects in the coastal zone. The Commission is currently working with California's coastal communities to develop their own coastal programs in line with the policies of the State Coastal Act, which in effect would return the permitting authority now held by the Commission to the local communities. The local coastal programs will include land use plans and ordinances which will also address new and expanding energy development.

The State's coastal management program also contains an energy facility siting process, including a process for anticipating and managing the impacts from energy facilities. It includes identifying energy facilities in the coastal zone, assessing impacts from the facilities, and developing State policies for managing the impacts. Also, California's siting process, in contrast to Louisiana's, provides for coordination between State, Federal, and local agencies involved in energy facility planning and management. Within this framework, the California Coastal Commission's Coastal Energy Impact Strategy for California, prepared under the CEIP program, stated that adequate measures are available to address new or expanded energy development.

The strategy also stated that California's ability to handle impacts from energy development vary by regions of the State. For example, in Los Angeles and Orange Counties, the impacts should be easily absorbed because the major work force is already located there. In Ventura County, OCS development should result in positive impacts on employment and income, offset by the negative impacts on housing and community infrastructure, particularly schools. Increased port activities planned in the San Francisco Bay Area should provide employment opportunities for residents, and other impacts can probably be absorbed due to the size and industrial capacity of the area. Northern and central California counties, however, do not have an experienced, existing work force and could be impacted because workers must be imported and public facilities and services and housing are not sufficient to accommodate this influx.

While some areas will fare better than others, the California Coastal Energy Impact Strategy states that new energy development is unlikely to cause an excess demand for, or constraint on, its public facilities and services. First, unlike Louisiana where local communities have not been involved in planning, most local governments in California do have planning staffs. Also, while specific areas of development such as northern California may not have adequate funding to fully address the impacts and develop mitigation strategies, some of these communities can borrow money or sell bonds to provide for their needs. Second, as mentioned earlier, the areas where most of the energy development is taking place is urbanized with all the needed basic public facilities and services in place. This is in sharp contrast to Louisiana where energy development has taken place in small, rural towns without adequate facilities for an increasing population.

Another contrast with Louisiana is the way in which California has spent its CEIP funds. While Louisiana concentrated on funding public facilities projects, California considers environmental impacts of offshore development its highest priority need for CEIP funds. Therefore, it has funded mainly planning studies, many of which are environmental, such as the California Coastal Commission's strategy to ameliorate environmental/ recreational losses and the Los Angeles County's wetlands study.

OBSERVATIONS

The coastal region of the United States is a diverse area. Portions of the region like Louisiana and southern California have been hosting a variety of energy activities for many years and will continue to contribute to the Nation's energy supply. Other parts of the coastal zone such as the Eastern Gulf region are just now being explored, and commercial production has not yet begun.

There are many uncertainties which impact on the pace and magnitude of future energy activity in the coastal zone. Proven reserves are declining, and the pace and magnitude of production from new finds are uncertain.

The impacts from energy activities in the coastal zone also vary as do the resources available to deal with them. Some areas have been able to handle the new population without adverse effect to the existing infrastructure. California, for example, has a large enough population to handle an influx of energy workers and parts of the Atlantic region are soliciting facilities for areas with underutilized infrastructure. Other areas such as Louisiana are dealing with a continuing problem of deteriorating or overburdened public facilities.

Coastal areas are utilizing a variety of State and local resources to deal with impacts from energy development. Regional planning groups in Louisiana have been effective in assisting local communities to deal with impacts of energy development. They are also utilizing a variety of Federal programs, both directly and indirectly related to energy impact mitigation, to deal with problems of energy development.

CHAPTER 6

SUMMARY AND OVERALL OBSERVATIONS

Communities need to provide basic housing and public facilities and services to their populations. Problems in meeting these needs occur for various reasons. In the Rocky Mountain region and portions of the coastal zone, economic development, including energy development, can bring with it an increase in population which strains the existing infrastructure and causes a need for additional facilities and services. These areas are looking for ways to control development, since by so doing they can control the rate and degree of impacts caused by such development. In contrast, Appalachia and other parts of the coastal zone are concerned with their social and economic health because of out-migration and/or deteriorating infrastructure. These areas are soliciting economic development, including energy, to raise revenues to deal with existing problems.

Communities in both the boom and bust cycles of industrial development, whether it be energy or some other type, are primarily concerned with maintaining or improving their social and economic structures. They are, therefore, generally more concerned about the problems emanating from these cycles, than what caused them. Communities in all three regions have been utilizing a variety of Federal programs to meet their needs and will, to varying degrees, be affected by the elimination or reduction of some of these programs. As a result, they will have to look to other sources, including industry and their States, to compensate for the reduced Federal contribution.

ATTITUDES AND RESPONSE TO ENERGY DEVELOPMENT VARY AMONG REGIONS

While the economic development problems being experienced by all three regions are similar, their causes and the communities' reactions are different. While Rocky Mountain and some coastal zone communities are primarily concerned with increased populations caused by energy development, Appalachian and other coastal zone communities are primarily concerned with existing infrastructure problems caused by past energy development.

While the extent of increased energy development in the Rocky Mountain, Appalachian, and coastal regions is dependent on many factors, the characteristics of the Rocky Mountain area are such that it could experience significant impacts. In the Rocky Mountain region, communities are faced with an upswing in energy development, particularly in oil and gas in the Overthrust Belt and Williston Basin areas. The pace of synthetic fuels development, however, is much slower than anticipated. Some Rocky Mountain areas, such as in the southwestern corner of Wyoming, are also subjected to the aggregate impacts of many types of development such as coal, oil, gas, and trona.

While the pace of some development, such as oil shale and synthetic fuels from coal, has been slower than anticipated in the West, that could change. The Federal Government is continuing to push for development of domestic resources to reduce our dependence on foreign oil. In line with this policy, the Secretary of the Interior has proposed to expand leasing of western lands to open up more opportunities for coal, oil, gas, and oil shale development. Also, the administration is reviewing various regulations and environmental laws to make them less restrictive to developers.

Much of the potential Rocky Mountain energy development is in areas of small communities which have population densities ranging from 1 to 17 people per square mile, compared to the nationwide average of about 60 people per square mile. The western States, with their predominantly semi-arid, rural regions with widely spaced small towns and cities, have and could continue to experience severe problems absorbing or diffusing population in-migration attracted by large energy projects. The increased population strains the existing local infrastructure causing the need for additional housing and public facilities and services.

Unlike other types of economic development, energy development is "resource-tied." An automobile factory or steel mill could be located in an area of underutilized infrastructure capacity or an area of high unemployment. Energy developers, on the other hand, must go where the resources are.

Communities in the Rocky Mountain area are attempting to retain control of the development occurring in their area. These communities are concerned about when energy development will occur and to what extent and how many new people will be arriving to construct and/or operate the facilities. To anticipate problems caused by energy development, communities need timely, accurate, and complete information on which to base decisions concerning impact mitigation. Some communities have already taken steps to assure this by enacting laws requiring industry to provide information prior to starting developmental activities. Also, some local communities or groups of communities have formed councils with industry to work together to plan for impacts.

Rocky Mountain communities have also used siting and permitting laws to control the pace of development in their area. Communities can withhold permits from energy developers or stagger their issuance to restrict growth and control the pace of development. By effectively managing the pace of development, communities can more readily control the rate and extent of developmental impacts.

In contrast to the situation in the Rocky Mountain area, Appalachian communities have been concerned with maintaining their social and economic health in the face of existing problems caused by the significant unemployment and resultant out-migration which occurred during 1940-70. Although this trend

was reversed during the 1970s, according to 1978 statistics, Appalachia, particularly the central portion, is still faced with a per capita income below the national average. Although Appalachia also anticipates the impacts from synthetic fuels development, these will, at least in the near future, be generally confined to a few counties in two States, and, therefore, will probably not have the wide-ranging impact which the drop-off in coal production had. Therefore, while areas experiencing synfuels development will probably have to cope with impacts of expanded population, the other Appalachian areas with deteriorating or inadequate public facilities would welcome energy or other types of development as a spur to the local economy.

Unlike the Rocky Mountain area which is attempting to control the pace of development, and thereby its impacts, Appalachian States are soliciting economic development, including energy, to take care of their existing needs. The three States we visited--West Virginia, Kentucky, and Ohio--all have State-level agencies responsible for attracting industry. For example, both Ohio and Kentucky have encouraged the development of synthetic fuels projects in their States. Ohio has promoted the development of a coal gasification plant in eastern Ohio, and Kentucky has attempted to attract synthetic fuels development since the early 1970s. The synfuel plants planned for western Kentucky will convert high-sulfur coal, which currently has a poor domestic market, into gas and liquid products.

The economic development goals in these States are generally consistent with local community goals. The local community links community development with economic growth. Increased jobs means an increased tax base, which in turn will help finance new or improved infrastructures. The State's goal of attracting economic growth and development is viewed favorably by local officials and trade unions. For example, at public hearings in western Kentucky for the coal liquefaction demonstration facility, there was an overwhelming turnout of union members speaking favorably for the siting of the facility in Kentucky.

The coastal zone region reflects the variance between the cause and control of community development problems in the Rocky Mountain and Appalachian areas. In some coastal areas energy development has been underway since the early 1900s, in others it has not yet occurred although exploration has increased in the last few years. With these varied circumstances, there are some communities which have been saddled with overburdened and deteriorating infrastructures caused by the past development of energy resources. In others the development has not yet occurred, but could be just around the corner with the accelerated oil and gas exploration in the outer continental shelf and the increased demand for coal exports.

States within the coastal zone also reflect the different approaches seen in the Rocky Mountain and Appalachian regions to meeting community needs. In Louisiana, like Appalachia, the

State solicits economic development for the depressed areas of the State. California, on the other hand, was one of the first States to create a coastal commission to control development and its impact on communities and the environment.

COMMUNITIES MORE CONCERNED WITH SOCIOECONOMIC PROBLEMS THAN THE CAUSES

Communities in both the boom and bust cycles of industrial development, whether it be energy or some other type, are primarily concerned with maintaining or improving their social and economic structures. They are, therefore, generally more concerned about the problems emanating from these cycles, rather than what caused them.

The need for additional facilities and services, such as classrooms, fire and police protection, housing, and social services, generally results from an increased population regardless of whether that increase was caused by energy or some other type of development. Therefore, whether a community will be host to a new steel mill, automobile assembly plant, coal mine, electric generating plant, or synthetic fuel plant, is not as relevant as what population increase will result from the proposed facility.

In order to address the impacts caused by increased population, a community needs to be able to expand its facilities and services and, at the same time, to maintain its social and economic well-being. Communities faced with out-migration and deteriorating infrastructure are also concerned with their social and economic health. Therefore, even though the causes of these two types of communities' problems differ, they are both concerned with the same problem--how to maintain or improve their social and economic well-being.

One of the few times the cause(s) become significant is when communities can obtain additional resources by linking their problems (needs) to a specific type of development. Communities in the Rocky Mountain, Appalachian, and coastal regions, in addition to obtaining assistance from various Federal sources not targeted to energy impacted areas, also obtained assistance from the Coastal Energy Impact Program (CEIP) and the Energy Impacted Area Development Assistance Program (EIADAP). These latter programs were specifically targeted to energy impacted communities. As a result communities had an incentive to show that their needs resulted from energy development.

FEDERAL CONTRIBUTION

Faced with the impacts caused by rapid industrial development, or the lack thereof, communities seek assistance in mitigating these impacts. In the three regions we reviewed the communities used various sources of assistance, including regional, State, industrial, and Federal sources. If the assistance

available from any one of these sources is reduced or terminated, the communities are then forced to look for additional assistance from the other sources.

One of the communities principal sources of assistance has been the Federal Government. Communities, whether impacted by current development or suffering through a bust cycle, have received funds from a variety of Federal programs. This assistance came not only from the two energy-related programs, but also from programs aimed at generic problems such as housing and waste-water treatment.

The President's economic recovery program, however, will reduce the amount of Federal funds available to these communities. As discussed on pages 13 and 14, this program resulted in the rescission of a portion of fiscal year 1981 funds for the EIADAP and CEIP programs. Also, no funds were appropriated in fiscal year 1982 and none were requested in fiscal year 1983. In addition, several other Federal assistance programs to States will be reduced.

We do not believe that the elimination of the EIADAP and CEIP programs will significantly affect the economic development of energy impacted communities. EIADAP funds only totaled about $69 million over the program's 3-year existence. These funds were allocated among 23 States, with individual State's shares ranging in fiscal year 1980 from $113,000 to $6 million. Due to the relatively limited amount of these funds, they were usually used in combination with other State and/or Federal programs. Also, the funds could only be used for planning and site acquisition and development. They could not be used for construction projects.

The termination of the CEIP program will probably impact one State more than the others. Louisiana, which used the program funds for public facility projects in an attempt to upgrade its deteriorating and/or inadequate infrastructure, received about 30 percent of the $321 million allocated from 1977 through 1980. The other States used the funds primarily for planning. As a result, States participating in the program have developed the planning capacity for addressing coastal energy development problems.

The President's economic recovery program would also affect both the form and structure of other Federal grant programs on which communities impacted by energy development have relied for assistance. In its March 1980 report (see page 36) OMB estimates that budget authority to provide Federal grants to States and local governments will be reduced $18.8 billion, from $105.0 billion in fiscal year 1980 to $86.2 billion in fiscal year 1982. Of the total, $1.86 billion is due to reductions in community and regional development assistance, including the CEIP and EIADAP programs, and a reduction of $4 billion is estimated for grants in the natural resources and environmental areas. These

reductions result from eliminating some programs, consolidating others into block grants, and reducing funding for others.

The administration believes that States should be responsible for providing needed services to their populations. In its opinion, this plan will enable States to plan and coordinate their own service programs, establish priorities, and exercise program control over Federal funds provided to their local communities.

We did not evaluate the effect of the changes and reductions in these other Federal programs on the local community's ability to address its economic development problems. However, it could have a severe impact on communities which relied heavily on these Federal programs.

Faced with such a situation, a community should concentrate on obtaining alternate sources of assistance, such as internally generated revenues and industrial and State funding. Some communities are better able than others to obtain such assistance. Some, as mentioned earlier, are hindered from generating revenues by State-imposed constraints and jurisdictional problems. Others have utilized the skills of a regional group and/or have grouped together with other communities to obtain the services of a grantsman. We believe that local and State governments should explore all possible methods of obtaining funds and of changing existing laws, regulations, and ordinances in order to allow local communities and/or areas to better respond to impacts from energy development.

Some communities demand more of industry than others as a prerequisite for permitting energy development within their boundaries. Also, industry is realizing, especially in rural areas like the Rocky Mountain States, that it is good business practice, and in some cases a matter of economic necessity, to provide for housing and other needs of their employees. Industry has to follow the resources and in the Rocky Mountain States that usually means locating a mine or other energy facility in a remote, sparsely populated area. The industry has begun to realize that to recruit and retain workers for these facilities it has to shoulder some of the burden of providing a community where the workers and their families can live in agreeable surroundings. Without such surroundings the industry is susceptible to high employee turnover rates. Communities must realize the options available to them to encourage industry participation in mitigating socioeconomic impacts, while also realizing that there must be a spirit of cooperation if both are to benefit from the development.

A State's willingness to increase assistance to local communities will depend on its relative priorities, given the reduced availability of Federal funds. Currently, funds available to local communities from the State level vary markedly from one State to another. For example, two of the Rocky Mountain States do not earmark Federal mineral leasing receipts for energy-

impacted communities. Therefore, even though the Department of the Interior projects the States' share of these revenues to increase from $315 million in 1980 to an estimated $901 million in 1985, the percentage of these funds returned to energy-impacted communities will depend on the individual State's relative priorities. We believe that State governments should, therefore, take the lead and work with local governments and regional organizations to better understand impact assistance needs, remove unnecessary legislative and regulatory barriers to revenue generation, encourage industry to share in the cost of mitigating impacts on a site-specific basis, and recognize energy impact assistance needs in establishing State funding priorities.

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The current emphasis on accelerating the development of the Nation's energy resources has heightened concern in some communities and regions of the country about their ability to mitigate the social and economic effects associated with such development. The Federal role is integral to this issue because of policies affecting the pace of energy development and programs providing impact mitigation assistance. In addition, there are differences in the ability and willingness of States and communities to address the impacts. Some regions are looking to control energy development, while others view such development as a means of improving their social and economic health.

We believe that all of these variables should be considered in determining the proper Federal role in energy impact mitigation. For example, the willingness of State and local governments to use their existing sources of revenues such as severance tax and Federal mineral leasing receipts to mitigate energy development impacts should be factored into decisions on the extent of Federal assistance to such areas. Also, some regions are faced with a deteriorating economy caused by past energy boom and bust cycles. While they may not be impacted from current energy development, they have been impacted in the past and are presently suffering the consequences. Therefore, their situation and economic condition should be considered in decisions on the proper Federal role for areas impacted by energy development.

Another factor which differs from project to project is the amount of assistance provided by industry. Some assistance is provided voluntarily and some under State or local law or regulation. Both types of industry assistance should be factored into deliberations on the Federal role.

In addition, we have noted that impacts are generally the same whether they are caused by energy or some other type of development. One caveat is that the energy developers have to go to where the resources are, whereas other types can go to areas more prepared to absorb the impacts. However, the similarities raise questions as to whether the assistance should be geared to the cause rather than the problem.

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