

October 14, 1993

To: Distribution

Cc: Bill White
Bob Rubin
Bo Cutter

From: Heather Ross

Subject: Natural Gas and Oil Initiative

Enclosed are further materials from DOE describing this initiative:

- * transmittal memorandum from Bill White and mailing list
- * edited policy statement, with modest changes from October 5th version highlighted
- * implementation plan

At our Friday meeting, we will consider the policy paper and determine whether interagency agreement on it has been reached. We will also consider the implementation plan and agree on any further steps to complete review of it.

Multiple attendees from agencies may overtax the large meeting room, 476 OE0B, which we have booked. If that happens, seating priority will be accorded to two participants per agency, with others welcome on a space available basis.

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**DOMESTIC NATURAL GAS AND OIL INITIATIVE
POLICY STATEMENT**

Revised October 12, 1993

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ADMINISTRATIVE MARKING
INITIALS: ΔΔΒ DATE: 9/5/13

DOMESTIC ~~NATURAL~~ GAS AND OIL INITIATIVE

I. INTRODUCTION

Earlier this year Secretary Hazel R. O'Leary announced that the Administration would develop a "plan that will lead to expanded opportunities for domestic gas and oil producers." The Secretary noted that "the end goal of this project will be to develop new and expanded opportunities for jobs in the domestic gas and oil industries, while fostering a climate which will increase production from domestic resource bases and reduce our reliance on foreign oil."

A viable and productive domestic gas and oil industry is essential to our shared national goals of increased economic, national security, and environmental preservation. Even with the aggressive increases in energy efficiency and new sources of supply -- increases the nation must strive to achieve -- a sound economic future requires an investment in our domestic gas and oil industry. By learning to use our gas and oil ~~more~~ resources ~~more~~ productively and ~~efficiently~~ ~~more wisely~~, we will preserve worldwide skill and product export opportunities that are vital to our economic future and our leadership role around the world.

This document summarizes the intent of the Domestic ~~Natural~~ Gas and Oil Initiative, which is to develop an effective approach for maintaining the viability of the American gas and oil industry without compromising economic efficiency or environmental quality. We fully recognize that this Initiative is only one part but an important part of the Administration's energy, economic, and environmental policies. In total, these policies reflect the need for job creation and security, global competitiveness, preservation of the environment, improved energy efficiency, and national security. The Administration has developed, and will continue to develop, initiatives that reflect these priorities.

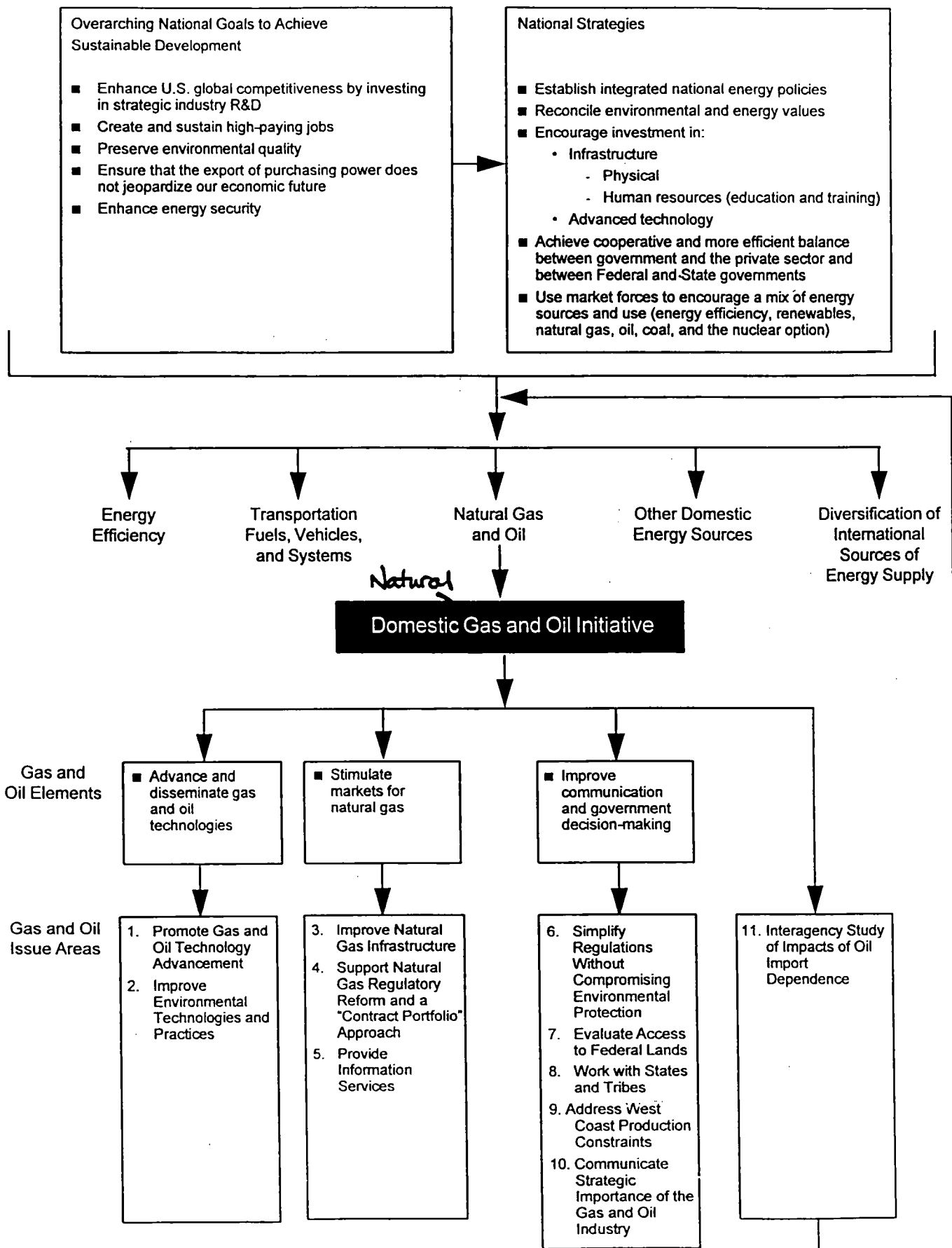
To cite just a few related examples:

- The Clean Car Initiative is dedicated to ~~working with the automobile industry to develop a fuel efficient car, in order to reduce our reducing long-run dependence on oil and associated green house gas emissions via improved transportation fuel economy.~~
- The Climate Change Plan represents the Administration's plan for reducing the growth of gases linked to global warming, primarily via increased energy efficiency actions, ~~spearheaded by the Department of Energy.~~

Natural Gas and Oil Initiative Roadmap

Figure 1

10/12/93



- The Natural Gas Utilization Initiative is focusing the Department of Energy's research and development efforts on new and more efficient types of natural gas end-use technologies, such as fuel cells and natural gas appliances.
- The Clean Cities Program and the Federal Fleet Conversion Task Force are working to accelerate the introduction of low-pollution, alternative fuel vehicles into our urban ~~transportation markets;~~ ~~airsheds.~~
- ~~The Renewable Fuels Programs are a continuing joint effort of the Departments of Energy and Agriculture to develop and promote with industry the cost-effective utilization of agricultural and forestry resources in the manufacture of biofuels (e.g. ethanol, methanol, fuel additives, and biodiesel) for transportation and the generation of electricity for utility applications.~~

In addition to these initiatives, the Department of Energy, the Federal Energy Regulatory Commission (FERC), and other Federal agencies are in the midst of implementing the Energy Policy Act and many other new programs and policies that affect transportation and energy use.

All of these efforts, and many more to follow, affect the nation's gas and oil producers and consumers. However, these efforts stop short of examining issues unique to the exploration, production, and refining of domestic gas and oil resources and the unique economic and energy issues posed by our ~~increasing~~ ~~tremendous~~ reliance on imported oil.

The purpose of this Initiative is to address these issues in the context of the array of new Federal policies. Moreover, the global economic and political environment has changed so much in the past few years that the effects of our petroleum dependence and loss of domestic activity may no longer be well understood.

The two key overarching goals of the Initiative are the creation of high-technology jobs and long-term economic opportunity and a reduction of the trend towards high imports. Most of our economic competitors strongly encourage petroleum conservation -- often through imposition of high consumption taxes -- in part to reduce their vulnerability to price shocks and supply interruptions and reduce the transfer of the purchasing power abroad. Americans have preferred to find other strategies to address these problems. As a complement to these efforts, ~~we propose additional policies~~ ~~it should be our~~ ~~policy~~ to strengthen exploration and production of domestic gas and oil resources in a cost-effective, pro-competitive manner.

The Initiative was developed by working with stakeholders and various Federal agencies with significant energy responsibilities. Figure 1 summarizes the three major elements of the Initiative:

- (1) to increase domestic gas and oil production and environmental protection through the advancement and dissemination of new exploration and production (E&P) technology;
- (2) to stimulate markets for natural gas; and
- (3) to streamline and improve communication and government decisionmaking.

In addition to these three elements, the Department of Energy will coordinate a broad new study, ~~coordinated~~ by the National Economic Council and the National Security Council of the impacts and risks of increased petroleum dependence. This study will form the basis for later additional actions found to be warranted under the study.

In assembling the Initiative, the Department has sought to achieve the specific objectives without sacrificing other paramount national interests, such as deficit reduction, economic stimulus and environmental protection. Wherever possible, the tactics and actions under the initiative take advantage of market forces, and also seek to achieve a cooperative and efficient balance between the public and private sectors and between Federal and State governments.

II. THE NEED FOR ACTION

A. The Worldwide and Domestic Importance of Gas and Oil

Natural gas and oil will remain critical elements in every nation for the foreseeable future. In 1990, United States consumers spent over \$300 billion on gas and oil--5.5 percent of ~~Gross Domestic Product (GDP)~~.¹ Gas and oil supply 99.9 percent of transportation fuel needs (almost entirely oil); 75 percent of industrial needs;² 61 percent of residential and commercial needs and 13 percent of electric utility needs.³

In the rest of the world, natural gas and oil are equally important, or, in some cases, even more important commodities, than in the United States. Gas and oil consumption represent 61% of total energy consumed worldwide in 1991.⁴ Because of the developing world's enormous appetite for energy, gas and oil are likely to play an ever-increasing economic role. In addition, global warming concerns may cause an even larger shift towards gas, and possibly oil, than might otherwise occur.

By any standard, the domestic gas and oil industry remains an important source of capital formation, technological development, and employment in the American economy. In 1990 the industry invested \$21.0 billion⁵ in infrastructure. The gas and oil industry, including the associated service industries, account for nearly 380,000 American jobs. Though this represents a relatively small fraction of the total U.S. work force, Figure 2 demonstrates that these jobs pay wages 30 percent above those of the average American worker, thus representing the sort of high-skill, high-value jobs America needs.⁶ Identification of hydrocarbon deposits far underground requires much training and application of advanced technologies.

¹Source: Energy Information Administration; The Annual Energy Review 1992. U.S. Department of Energy, Table 3.8, page 85.

²Includes non-utility electric generation, independent power producers, feedstocks and other industry users.

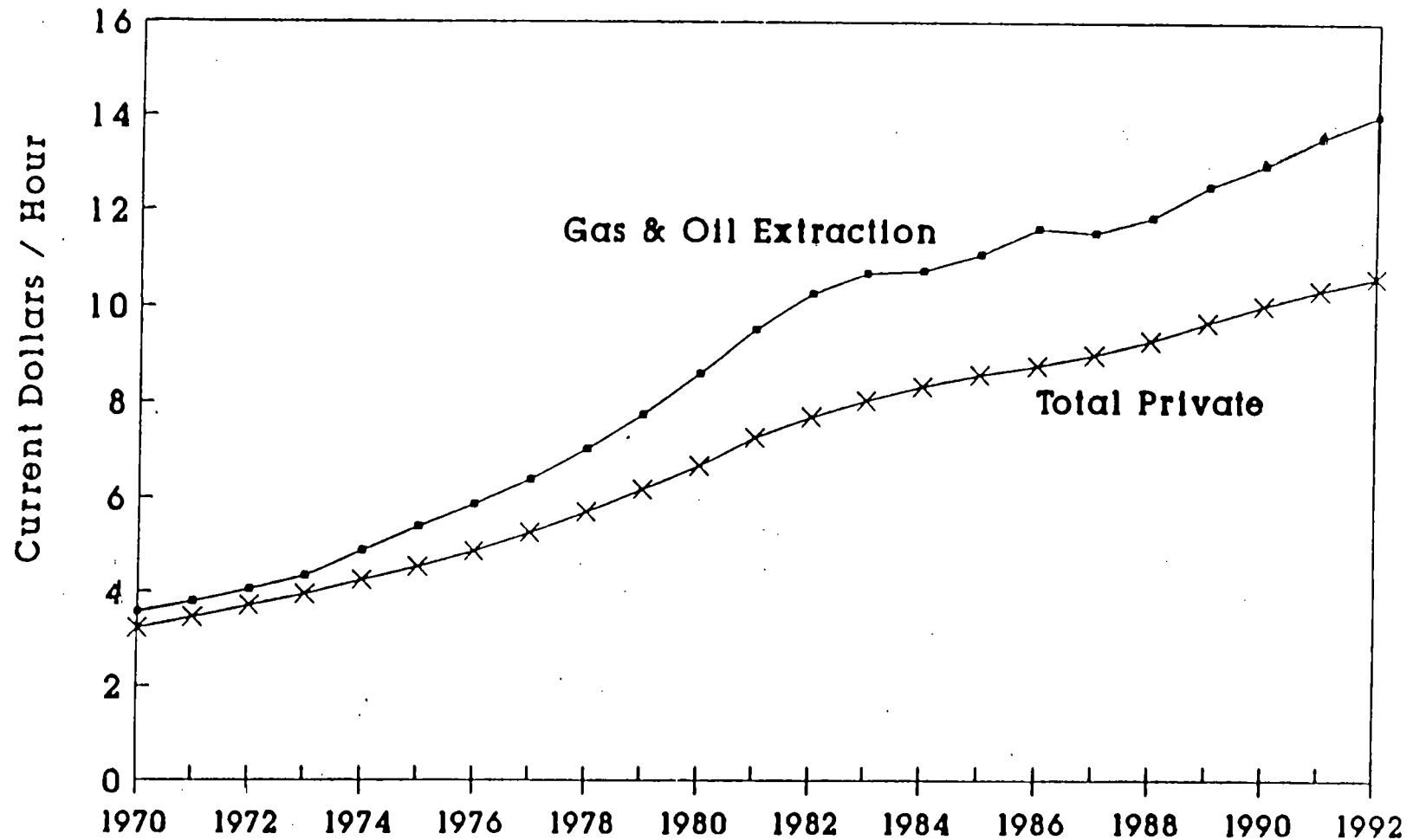
³Source: Energy Information Administration; The Annual Energy Review 1992. U.S. Department of Energy, Table 3.7, p. 83.]

⁴Energy Information Administration, International Energy Annual, 1991, Table ES2, page XVI.

⁵Source: Survey of Oil and Gas Expenditures 1990, American Petroleum Institute, November 1991, Table II, page 2.

⁶Source: Bureau of Labor Statistics, Department of Labor; Current Employment Statistics Survey.

Figure 2. Average Hourly Earnings for
the Gas & Oil Extraction Industry



Source: Energy Information Administration

B. Maintaining Our Lead in Gas and Oil Exploration and Extraction Technologies Will Benefit the Nation

Preserving Gas and Oil Jobs for Long-term Economic Opportunity

The American people have given this Administration the pre-eminent task of redirecting public resources to help create high-wage jobs and a secure economic future for American citizens. The American public and their government increasingly understand that the citizens of this country compete internationally for jobs, for investment, and for economic growth. Success in that competition will depend, in part, on an explicit strategy that emphasizes improvement in American technology and competitiveness.

The U.S. gas and oil industry is in transition. Most major domestic oil companies have shifted their exploration operations abroad. Independent producers play an increasing role in finding and extracting domestic gas and oil. Natural gas is an abundant and underutilized domestic resource which can be substituted for oil and has many environmental and economic benefits. Furthermore, the U.S. has large remaining resources of oil, but they require advanced, relatively high-cost technologies to locate and extract.

It is beyond question that natural gas and petroleum will remain critical materials in the world economy for the foreseeable future. Increasing scarcity anywhere in the world will increase the value of exploration and production skills that reduce the cost, or increase the availability of, natural gas and petroleum.

The gas and oil industry relies upon advanced technology, in which American firms traditionally have led the world. Modern gas and oil exploration and production represent the quintessential "high tech" industry. It is instructive to note that, when oil fires in Kuwait required unique firefighting skills, U.S.-based experts made important contributions to ending this economic and environmental nightmare. However, the number of trained young people in the United States entering the gas and oil business has shrunk to a small fraction of what it used to be.

As in many other industries, worldwide competition in extraction and exploration is fierce and increasing. If domestic producers are to continue to provide a substantial portion of U.S. oil needs, and compete in world oil markets, new and advanced technologies must be developed and widely applied. New technologies will also be vital in developing our abundant domestic natural gas resources to meet the widely-expected increased levels of demand.

In the long run, increased productivity of the American gas and oil industry will create jobs for Americans. First, by keeping U.S. technologies "on the cutting edge," we

ensure that they are the technologies of choice worldwide, thereby maintaining and expanding technology export opportunities and export-related jobs. Second, increased productivity can make more of a domestic energy resource economically available, ultimately allowing expanded domestic production and increased employment.

Revolutionary technologies that use state-of-the-art computer mapping of the sub-surface for exploration and production are being developed in the gas and oil industry today. A case in point is known as three dimensional (3-D) seismic surveying. This procedure can provide high-resolution images of subsurface gas and oil deposits, thus enabling more efficient exploration and development. Success using this approach has been documented by many companies. An example is in the Bay Marchand field in Louisiana (See Figure 3). Prior to 3-D utilization, production in this field had declined to 18,700 barrels per day in November 1985. Using 3-D technology, the decline in production was reversed and output more than doubled, rising to 45,200 barrels per day in April 1991. Other case studies suggest that, where new undrilled reservoir prospects lie adjacent to producing fields, the discovery success rate can be improved by as much as 50 percent through use of 3-D technology.

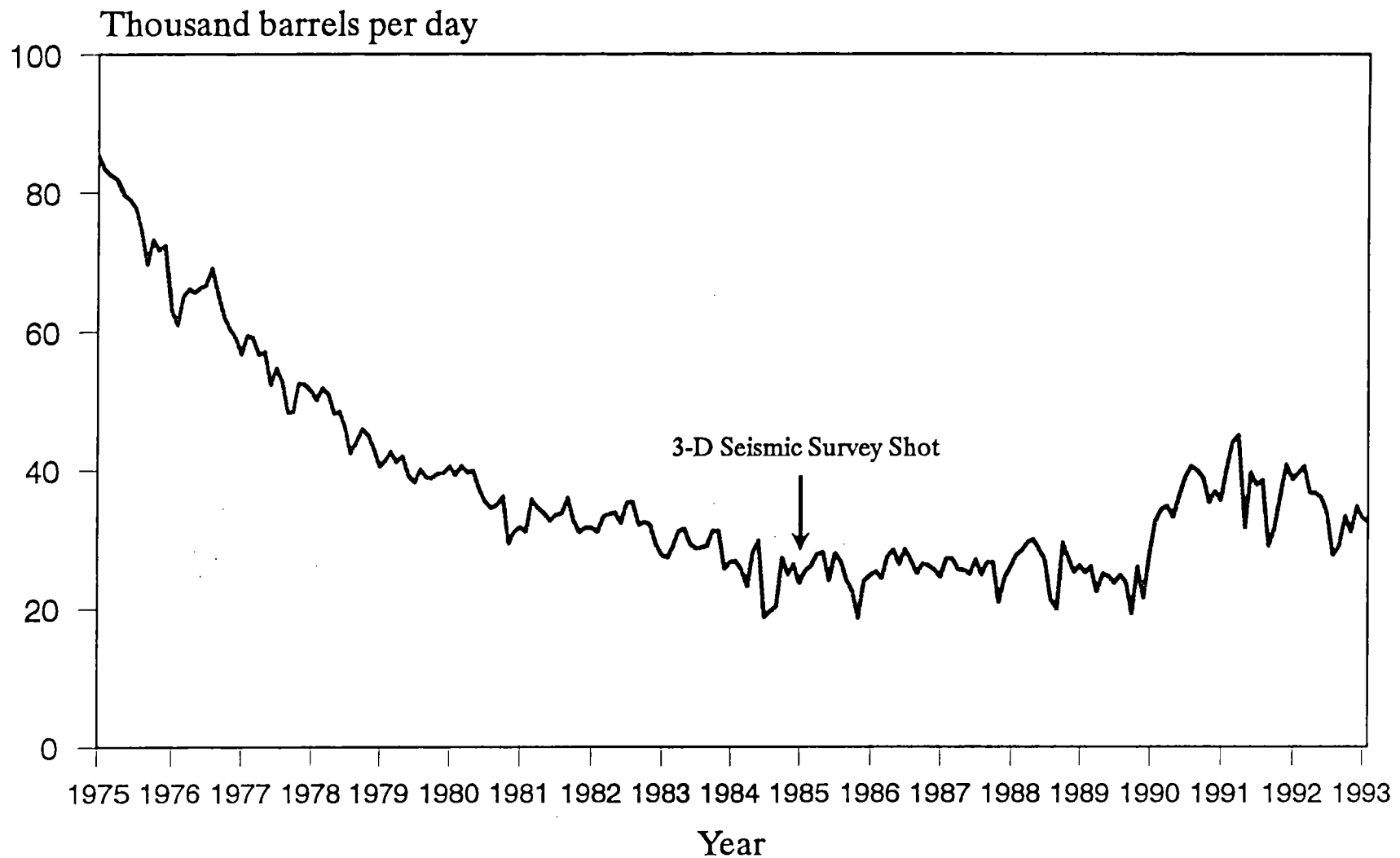
Independent producers, integrated major producers, and the gas and oil service industry believe that these technologies hold great promise for expanding production from our domestic resources. Furthermore, these technologies have great potential for developing gas and oil resources abroad, thus representing a significant export opportunity and allowing a diversification of international supply.

American industrial competitiveness will depend on improvements in productivity and technology equal to or better than that of other nations. The gas and oil industries are poised to research and adopt new methods of exploration and extraction that will allow us to expand our economically recoverable domestic resource base without compromising environmental quality. Increased reliability of subsurface mapping means fewer dry holes and increased reserves. If we develop and deploy these new procedures in a domestically-based industry, the U.S. will lay claim not only to increased energy production, but also technologies that can be marketed to our trading partners abroad. If we fail, the U.S. will likely be purchasing these technologies from other nations who recognized their strategic and economic value and had the courage to act.

Preserving Worldwide Environmental Quality

As we move toward the twenty-first century, our nation must reduce its dependence on fossil fuels, minimize wastes, preserve our water resources, and protect sensitive environments. This Administration will assert world leadership on such issues. The policies that encourage gas and oil exploration and production will be pursued with these environmental goals in mind and with the understanding that energy and environmental objectives are compatible. In doing so, the U.S. will be setting a

Figure 3. Bay Marchand Field
Monthly Average Production History
1975-Early 1993



Source: Dwight's Energydata, Inc. via Energy Information Administration.

standard for environmental sensitivity in the gas and oil industries that will demonstrate leadership and serve as a basis for environmental standards in other parts of the world.

III. THE DOMESTIC GAS AND OIL INITIATIVE

As mentioned in the introduction, the Domestic Gas and Oil Initiative has three principle elements:

1. Increase gas and oil production and environmental protection through the advancement and dissemination of technology;
2. Stimulate markets for natural gas; and
3. Improve communication and government decisionmaking.

In the remainder of this section, each of these elements are discussed and described. An implementation plan, making use of stakeholder and other agency comments to date, is currently being developed to address these elements.

Element 1. Advancement and Dissemination of Gas and Oil Technologies

Advanced computing technologies are revolutionizing the search for gas and oil. In some areas, for example, advanced computing technologies have allowed for the direct detection of natural gas through the analysis of seismic data.

American national defense labs--specifically Los Alamos, Sandia, and Livermore--historically have created the demands which spurred the development of cutting-edge computer technologies. American taxpayers have invested many billions of dollars in applying the scientific capability of the National Laboratories to the development of world-class modeling capabilities. National Laboratory scientists and facilities can and do model complex subsurface conditions for both underground nuclear testing and some current gas and oil projects.

The gas and oil industry is poised to realize enormous benefits from the advanced exploration and production techniques. To take maximum advantage of these opportunities, the Administration proposes an industry driven Advanced Computational Technology Initiative to enhance joint government/industry/university research, development, and deployment efforts on advanced computing problems related to exploration and production. These efforts will build on the longstanding leadership of the United States in developing and marketing new computer technologies and applications, and will help to maintain a strong U.S. position in this critical, high-wage field. These efforts will be expanded in FY-95 to a total federal commitment of \$50 million, in addition to substantial funds from private enterprises.

To meet this objective, the DOE shall expand its oil R&D program to increase advanced oil recovery capabilities and reduce the rate of reservoir abandonment. This will be accomplished through accelerating field demonstrations; conducting in-depth

evaluations of selected past and ongoing industry projects to pinpoint important unsolved problems; disseminating more complete information on technology developments; conducting field-based reservoir characterization and innovative recovery process experiments; and expanding supporting research to address industry-identified needs.

Domestic gas and oil producers face increasing costs of compliance with environmental regulations. To help reduce the costs of meeting environmental objectives, the DOE, with the assistance of the Environmental Protection Agency, the Office of Environmental Policy, the Office of Science and Technology Policy and the Department of the Interior, will establish an industry-focused environmental research advisory board. The express purpose of the Board will be to advise the government on energy related R&D issues. The Initiative will also create an environmental technology demonstration and technical assistance program and develop specific studies and demonstrations, such as an examination of the feasibility of significantly increasing the amount of lubricating oil that is recycled in the United States and exploring the Federal role in oil spill clean-up R&D.

The Administration also proposes to stimulate development of a nationwide technology transfer network and assistance program. Technology transfer efforts will be especially important in encouraging the 8,000 independent operators in the U.S. to adopt innovative exploration and production methods. Historically, these operators have led the exploration of our domestic resource base. Two-thirds of these independents have fewer than 20 employees and cannot individually finance large, long-term R&D programs.⁷ Smaller independents have expressed strong interest in organizing themselves to better disseminate technology.

Due to the increased upfront costs associated with new technologies such as advanced computing, some independents have formed associations that reduce the costs of gaining access to new technologies. By familiarizing individual firms and these associations with new technologies developed by both industry and government, technology transfer efforts can make a critical contribution to increasing domestic production and sustaining the viability of the domestic industry.

Finally, and in conjunction, the Department of the Treasury and the Department of Energy are examining legislation that would permit domestic companies that employ certain advanced ~~exploration and production (E&P)~~ techniques to expense rather than amortize their geological and geophysical outlays.

By encouraging the use of the most advanced technologies for gas and oil production and environmental compliance, the proposed Initiative will bolster technical progress,

⁷Source: Department, of Commerce, Bureau of the Census, 1987 Census of Mineral Industries, MIC 87-1-13A, Table 1, page 13A-5.

create high-wage employment for United States citizens, and reduce the transfer of American purchasing power abroad. Thus, advanced gas and oil extraction technologies represent a natural part of the Administration's technology strategy.⁸ Ultimately, investments in technology represent investments in people. Only superior skills of American workers will keep the domestic gas and oil industry at the forefront of international competition for advanced seismic exploration services..

Element 2. Stimulate Markets for Natural Gas

As the President has stated, the substitution of domestically-produced natural gas for energy purchased in the form of imported oil provides unqualified benefits to the nation. Substitution of domestic gas for imported oil helps the environment and helps keep jobs at home.

The remaining resource base for natural gas appears to be more abundant and cost-effective to tap than the remaining resource base for domestic oil. Independent studies indicate that the size of the gas resource base promises the availability of natural gas for several decades ~~without opening up new exploration provinces (Table 1)~~. Figure 4 indicates that since 1987, gas and oil exploratory drilling yields have nearly doubled. Most of this increase in productivity represents the discovery of new gas reserves.⁹

The Federal Energy Regulatory Commission (FERC) has taken a number of dramatic actions intended to improve competition and service in the natural gas industry. These actions shall continue. The Administration recognizes the valuable contribution these efforts have made to expanding and improving natural gas markets. We also recognize the need to carefully target new policies in order not to jeopardize the progress made to date.

Our discussions with other agencies and the FERC have demonstrated that there is scope for additional activity that will complement and support the FERC's efforts. To insure that the targeted efforts under this element work in concert with the FERC's activities, the Department of Energy and the FERC will establish an interagency working group that will meet on an ongoing basis to coordinate policy development and implementation. These meetings will be conducted so that infringement on either the FERC's, or the Department's rights and responsibilities under the law will not occur.

⁸President Clinton and Vice-President Gore, "Technology for America's Economic Growth: A New Direction to Build Economic Strength", February 22, 1993.

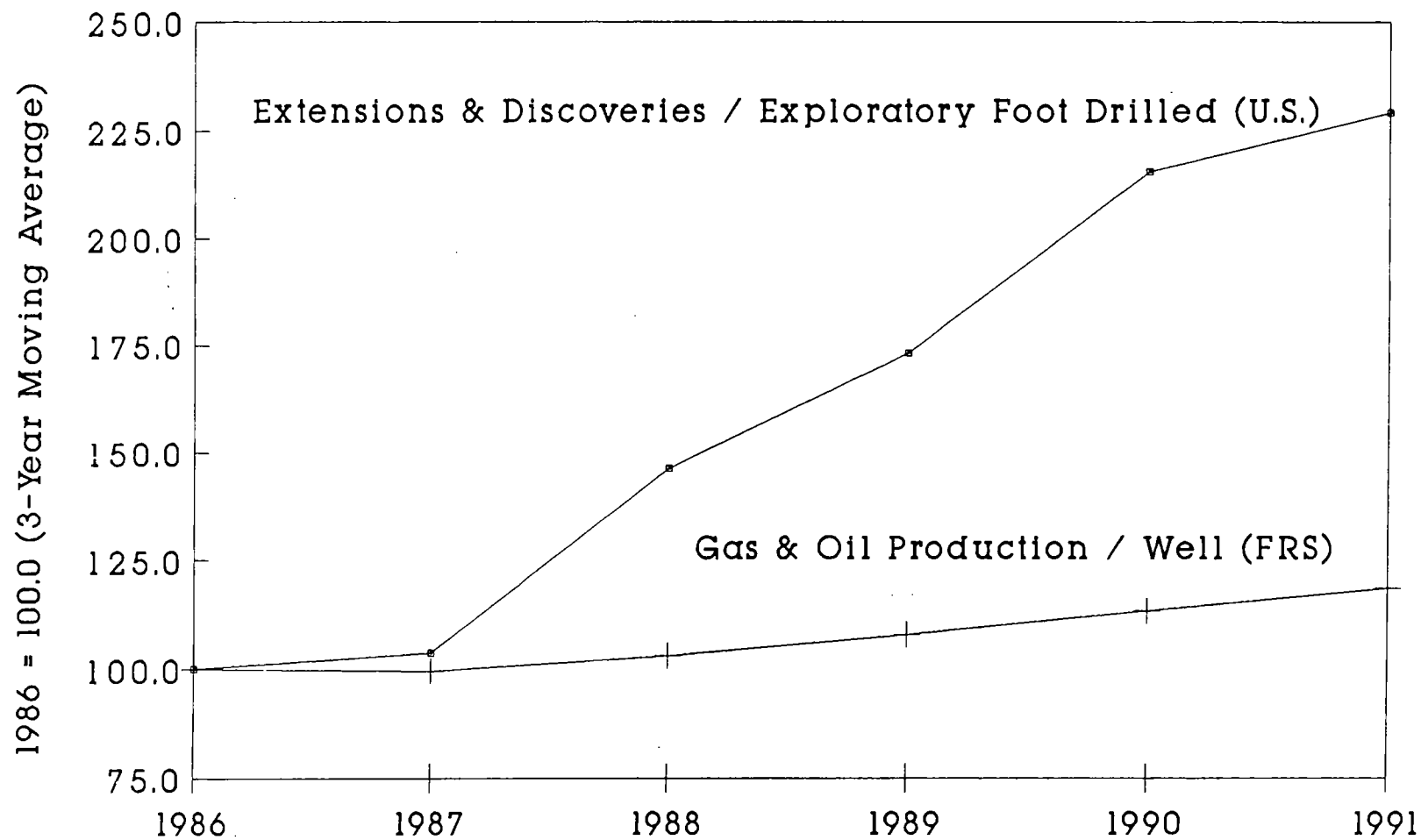
⁹Energy Information Administration; U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1991, Figures 10 and 11, page 18..

**Table 1. Recoverable Resources in the Lower-48 States
Comparison to Other Estimates
(Trillion Cubic Feet)**

	National Petroleum Council 1992	Potential Gas Committee 1990	Gas Research Institute 1992	Energy Information Administration
Proved Reserves	160	160	160	160
Conventional Resources				
Reserve Appreciation	203	170	150	265
New Fields	413	491	394	327
Total Conventional Resources	616	661	554	592
Nonconventional Resources				
Coalbed Methane	98	88	110	90
Shales	57	--	123	30
Tight Gas	349	--	238	383
Other	15	--	32	--
Total Nonconventional Resources	519	88	503	503
Total Assessed Resource	1,295	749	1,047	1,095
Total Resource	1,295	909	1,207	1,255
Adjust to 1/1/91	--	--	--	35
Total Adjusted Resource	1,295	909	1,207	1,220

Source: National Petroleum Council, The Potential for Natural Gas in the United States, December 1992, Volume II
- Source and Supply, page 37.

Figure 4. Indexes of Gas & Oil Productivity



Source: Energy Information Administration

In addition to these Federal regulatory reform initiatives, the Administration is pursuing two coordinated efforts whose net effect will, we believe, accelerate the use of natural gas in transportation markets: (1) The Federal Fleet Conversion Task Force, a program designed to convert public and private fleets to alternative fuels, including natural gas, over the next few years and to coordinate efforts leading to alternative fuel refueling infrastructure development; and (2) The Clean Cities Program, an effort to coordinate state and local public and private alternative fuel vehicle market development. Efforts such as these will have a major impact on reducing imports, creating jobs and opening new markets for alternative motor vehicle fuels.

Improving The Natural Gas Deliverability Infrastructure

Efficient delivery of natural gas from the wellhead to the burner tip is dependent on a well-functioning physical infrastructure for gathering, transporting, storing, and distributing gas, and on an accurate and timely information infrastructure for monitoring natural gas supply and demand.

To help improve the physical infrastructure, the Administration will work with the FERC to remove barriers to environmentally sound construction of additional pipeline and storage facilities; increase access to existing facilities; and accelerate the development and use of advanced technologies in natural gas storage and distribution.

The Administration will also support the industry's efforts to improve real-time capabilities for monitoring and modeling natural gas availability and flows, and to match gas storage to end-user requirements. Such efforts will be especially important in enabling greater use of natural gas in electric power generation.

One topic ripe for discussion between the Department of Energy, the FERC, Congress, and interested stakeholders is gas pipeline construction permitting and regulation. Discussions of this topic in the Department of Energy/FERC working group will also include the Departments of Agriculture and Interior as well as other key stakeholders.

Supporting Natural Gas Regulatory Reform and New Contracting and Hedging Mechanisms

Federal and State regulators should continue to promote a competitive industry structure. As noted above, changes under way in the private sector and industry restructuring prompted by the work of the FERC are already reducing the costs of information and transactions in natural gas markets.

At the State level, changes in regulations governing the distribution of natural gas and electricity can also lead to improved efficiency in energy use. DOE supports State efforts to revise electricity, gas, environmental, and energy conservation pricing policies and regulations that will help to clarify the true economic costs and lead to

greater economic value and a cleaner environment. Recognizing the States' jurisdictional authority in this area, we seek a cooperative effort between State utility regulators and energy offices and DOE to help foster regulatory reforms that will: (1) improve access to gas distribution facilities; (2) encourage efficient pricing for electricity and gas; (3) encourage the removal of fuel-specific subsidies that work against energy efficiency goals; (4) encourage cost-cutting by distributors; and (5) boost the use of natural gas transportation.

One of the most important topics for this State-Federal dialogue involves the use of an expanded portfolio of contracts for natural gas distribution companies and end users. New types of contracts and financial instruments can lead to improved gas availability and market performance, but only if all parties understand and utilize these new tools. DOE will expand its fact-based educational activities in these areas without attempting to prescribe specific state or customer contracting policies.

Providing information services

To facilitate all elements of this Initiative, and as a final implementation measure aimed at this objective, the Department will improve its ability to develop, collect, and disseminate information on natural gas deliverability and storage. To complement the proposed initiatives to improve natural gas deliverability and encourage regulatory reform, the DOE will enhance the capability of the Energy Information Administration (EIA) to collect these data, and will develop an Energy and Resources Mapping and Information System. EIA will work with other agencies and the private sector to provide a coordinating function and to avoid duplication while executing this task.

Element 3: Improve Communication and Government Decisionmaking, Including Issues of Access to Public Lands, and Investments in Environmental Improvements

The Report of the National Performance Review issues a challenge to Federal agencies to find new ways of problem-solving that emphasize collaboration, empowerment, and greater efficiency. The National Performance Review calls on Federal and State agencies to eliminate "regulatory overkill" and work together with greater coordination and flexibility.

This component of the Initiative contains seven specific action areas created in the spirit of these Administration priorities. The seven action areas are:

- (1) The Department of Energy should improve the level of public awareness of the strategic role of the gas and oil industry;
- (2) Various federal regulatory agencies and departments should streamline and simplify multi-jurisdictional, multi-layer, and overly complex regulatory processes, with no compromise in regulatory protection of the environment and the public interest ("eliminating regulatory overkill," in the words of the National Performance Review);
- (3) The Department of the Interior and the Department of Energy shall initiate new policies to generate greater leasing interest in mature areas of the Western and Central Gulf;
- (4) The Department of the Interior is initiating a regional process for examining Outer Continental Shelf (OCS) policy in certain frontier areas (the Arctic National Wildlife Refuge is not included). That process should include representation by the Department of Energy, the Environmental Protection Agency, and state and regional representatives of all significant stakeholders;
- (5) Various agencies and departments should work more closely and cooperatively with States and Tribes on gas and oil supply issues;
- (6) The Department of Energy shall examine the costs and benefits of removing constraints on West Coast gas and oil production; and
- (7) The Department of Energy shall work with Congress, the Bureau of Land Management, and the Office of Management and Budget to prepare and implement a plan for production of the Naval Oil Shale Reserves.

Better Understanding and Communication of the Strategic Value of the Gas and Oil Industry to the Nation

Public perceptions of the gas and oil industry have not kept pace with its changes during the last decade in which the industry has been devastated by recession. Further, the gas and oil industry has evolved into a business of high-tech, skilled, and educated professionals and is a far cry from the rough-and-tumble image formed many years ago. The government will play a role in increasing awareness of the strategic importance of this industry in the United States economy through public information programs and outreach activities.

To help increase the public's awareness of the strategic role of the gas and oil industry, the Department of Energy will conduct a joint study with the Department of Labor on the maturing of the work force in the domestic industry, and the relatively few young people entering the industry from college or graduate school. Educated young people are the life blood of any business. Universities responsible for the education of young petroleum engineers, geologists, geophysicists, landmen, and chemical engineers oriented to refining have sharply cut back their programs for lack of interest. This trend cannot continue for decades if we are to maintain a viable domestic industry. The Department of Energy and Department of Labor should use the resources of the National Petroleum Council to study this problem, and possible long-term remedies including scholarships and work force planning strategies.

"Eliminating Regulatory Overkill"

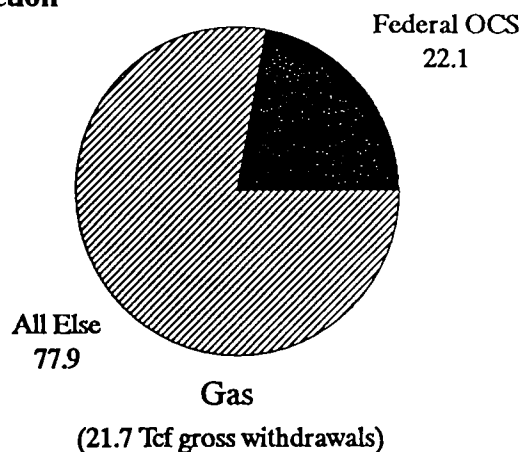
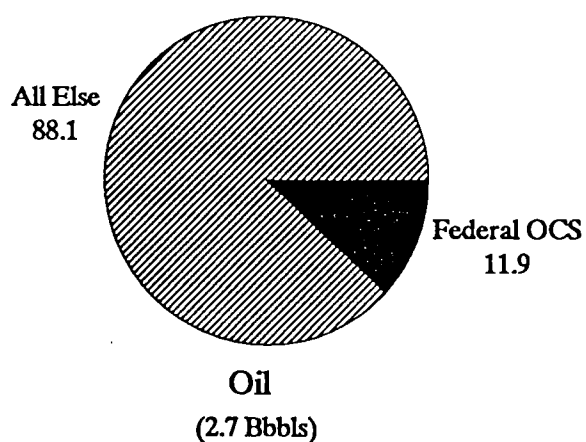
As in other industries, gas and oil producers have become subject to a vast number of overlapping, media-specific State and Federal environmental rules. As the Vice-President noted in the recent National Performance Review, these rules are usually created with the best of intentions. As the Vice-President further notes, it is time to "put aside our reverence for those good intentions" and focus on implementing regulatory protection with greater flexibility and efficiency.

Fortunately, a wealth of new regulatory solutions and processes are under development across the United States and around the world. Market-based and multi-media pollution control solutions are under development and in some cases a matter of law; Federal and State agencies are making increasing use of regulatory negotiations and formal collaborative processes; and agencies such as the Federal Energy Regulatory Commission are searching for self-enforcing, market-based processes that eliminate or reduce the need for formal hearings.

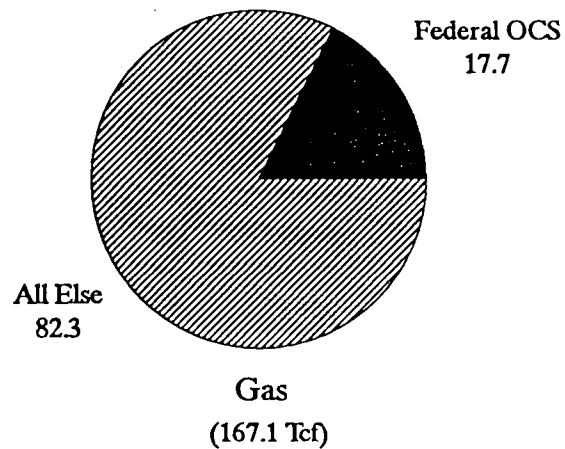
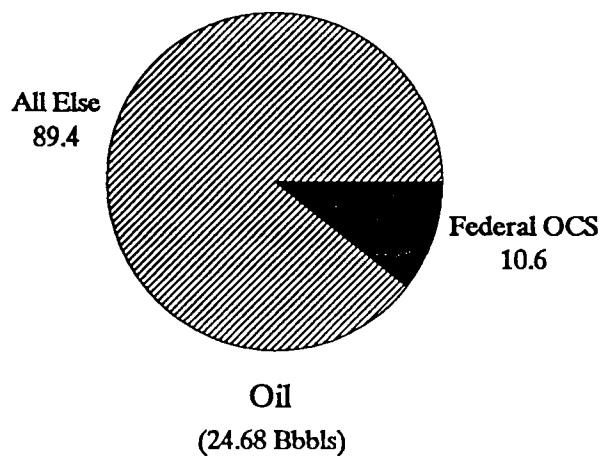
Encouraging progress has been made in this area in gas and oil production, as well as refining, but much more can be done. At Atlantic Richfield Corporation's Dauphin Island site in the Gulf of Mexico, early communication with State and local governments and the fishing community avoided unnecessary project delays and resulted in an environmentally superior and economically viable drilling project. In Pennsylvania, a collaborative process has been used to establish general permits for stripper oil and marginal gas wells. At the Yorktown refinery in Virginia, the cooperation of Amoco and the Environmental Protection Agency led to unprecedented new information concerning the structure, effects, and compliance strategies associated with environmental rules.

Figure 5. Federal Waters and Lands (Percent of U. S. Total)

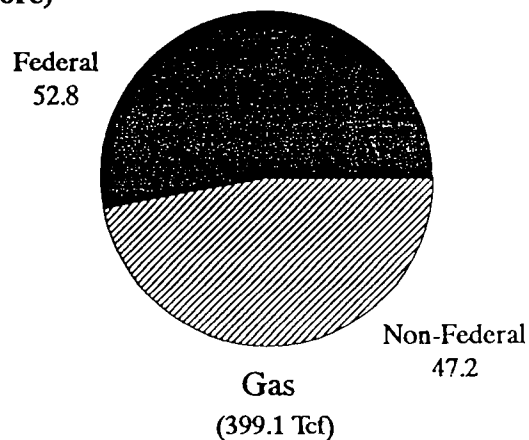
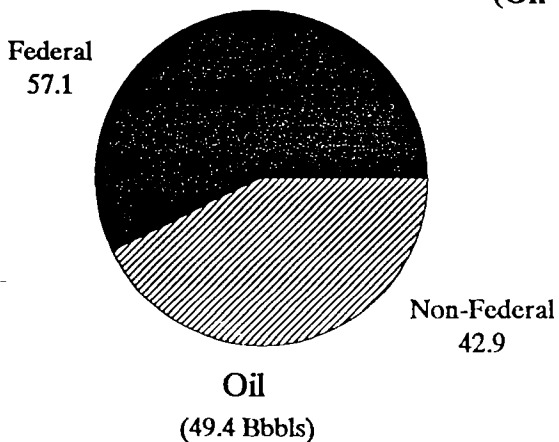
1991 Federal OCS Production



1991 Federal OCS Proved Reserves



Undiscovered Recoverable Oil and Gas Resources (On- and Offshore)



These efforts suggest great promise, but more action is needed. To accelerate progress, we will:

- Work cooperatively with States through organizations such as the Interstate Oil and Gas Compact Commission and the National Association of Regulatory Utility Commissioners to promote the streamlining and integration of State and Federal regulatory programs. The purpose of these concerted efforts will be to seek out and eliminate duplication in Federal and State regulatory programs, whether in the form of needless paperwork or duplicate permits or hearings. Wherever possible, one-stop permitting and market-based mechanisms will be encouraged.
- Enhance the capability of State and Federal governments ~~processes~~ to ~~make better policy decisions through the establishment and promotion of improved tradeoffs.~~ This enhancement is designed to dovetail with the streamlined interagency regulatory review process the Administration is proposing, which also seeks to minimize interagency rule conflicts and incorporate tradeoffs between regulatory impacts.
- Demonstrate the feasibility of alternative approaches to environmental regulation that more accurately balance costs and benefits, promote rather than stifle technological innovation, and allow for compliance flexibility.
- Promote dialogue and build partnerships of industry groups, States, the public, and other interested parties dedicated to resolving disputes and balancing the energy, economic, and environmental objectives necessary for sustainable development.
- Establish a joint Department of Energy and Environmental Protection Agency working group to review the National Petroleum Council report on the future of U.S. petroleum refining. The working group will develop a strategy for maintaining a more viable domestic petroleum refining industry, including the examination of the feasibility of innovative, cost-effective approaches to an "environmentally invisible" refining industry.

Re-Examine Access to Federal Lands

The Nation's public lands are one of its most precious resources, and it is entirely appropriate to safeguard and preserve these lands for future generations. However, with advanced technologies and careful extraction practices, it is no longer the case that our stewardship obligations are inconsistent with the extraction of subsurface resources.

Figure 5 shows the substantial percentage of gas and oil resources that underlie Federal lands and waters. Federal lands comprise some 727 million acres of property onshore, nearly one-third the entire land area of the United States.¹⁰ The Outer Continental Shelf (OCS) also contains a vast resource of gas and oil restricted from development for economic reasons or they are under executive and legislative moratoria.

With regard to the western and central Gulf of Mexico, incentives such as lower royalties should be considered to spur interest in tracts which are likely to contain reserves but have previously generated little interest. In addition, incentives should be considered for tracts which present difficult challenges for production in mature areas such as sub-salt deposits.

Access to frontier areas should be considered on a regional basis. The Department of Energy has joined with the Department of the Interior, and the Department of Agriculture Forest Service in establishing a Federal Lands Energy Coordinating Groups. The express purpose of these Coordinating Groups will be to ensure that national energy strategies are appropriately considered in leasing decisions related to Federal lands. DOE will participate with the Department of Interior in working groups to consider the technical and scientific issues involved in making decisions about access to these areas. A description of the scope of this process will be developed in a Memorandum of Understanding between the Departments. This Coordinating Group shall ensure energy and environmental inputs in the review of the prior Administration's Five-Year Leasing Plan. That review should be completed by October 1, 1994.

The U.S. leads the world in the development of environmentally effective technologies for exploration and development of gas and oil in frontier areas. We should retain this leadership not only for ourselves, but for the planet we share. This base of knowledge contributes to the tools available internationally for environmentally responsible gas and oil development, as other nations push offshore and into the Arctic.

Collaboration with States and Tribes

The States bear a primary responsibility for regulating the gas and oil industry in the areas of resource conservation, environmental protection, and the use of natural gas. Ongoing federal interactions with State organizations, such as the Interstate Oil and Gas Compact Commission, the Ground Water Protection Council, the Energy Council,

¹⁰Estimates of Undiscovered Conventional Resources of Oil and Gas for Federal Lands, and for Indian and Native Lands of the Continental United States, G. L. Dolton, R. F. Mast, R. A. Crovelli, U.S. Geological Survey Open-File Report 90-705, 1990. Table 2, page 10-12.

the National Governors' Association, the National Association of State Energy Offices and the National Association of Regulatory Utility Commissioners should be strengthened. The Federal government will work cooperatively with individual States to identify and resolve key issues constraining gas and oil supply at the State and regional levels.

As part of this Initiative, the Department will also forge new partnerships with Tribes to increase domestic gas and oil production on tribal lands. These partnerships will strive to recognize the importance of economic development, environmental preservation, and cultural sensitivity to tribal affairs.

Addressing West Coast Production Constraints

Crude oil production from the Alaskan North Slope (ANS) is likely to decline, leaving the West Coast once again a significant importer before the year 2000. To address this problem the Administration proposes removing many of the barriers that inhibit development of California resources by:

- Encouraging oil pipeline access for non-integrated producers in California. Most, if not all, of these large pipelines should operate as common carriers by virtue of their settlements in long-standing lawsuits, or their use of rights-of-way granted under the Mineral Leasing Act. Free and open access to transportation assets in the State will help to increase production.
- Working with California stakeholders to develop strategies to permit California refineries to process greater proportions of heavy indigenous crudes. The marginal barrel of oil produced in California today is a heavy crude that requires extensive refinery processing to satisfy the State's high demand for light, low-sulfur transportation fuels. Declining Alaska North Slope supply will make room in refinery "upgrading" units that can process California heavy crude oil.

Prepare and Implement a Plan For Production of the Naval Oil Shale Reserves

The Naval Oil Shale Reserves represent a significant natural gas resources that is currently unavailable for production. The Department of Energy will characterize the production potential of the Reserves and conduct sufficient economic analysis to prepare and implement a plan to develop these government owned lands in an environmentally responsible manner that will maximize revenues to the Treasury.

This plan will use the considerable work that has already been done by the Department of Energy, the Bureau of Land Management, the Office of Management and Budget, and Congress. An aggressive timetable will be set for quick implementation of the plan.

IV. New Interagency Study of the Impacts of Oil Import Dependence

As we pass the twentieth anniversary of the OPEC embargo, which staggered world financial markets, destabilized economic growth, and led to the notorious "gas lines," the U.S. remains vulnerable to ~~oil price shocks and~~ the disruption of its oil supply. Today, the developed world is just as dependent on open access to the Persian Gulf, the locus of most of the world's known oil reserves, as it was two decades ago.

It is also the case that much has changed during the past twenty years, with uncertain implications for our domestic gas and oil industries. While the world hopes that the Mideast has entered a new era of peace and stability, many threats to regional stability still exist. The ~~republics of the~~ Former Soviet Union ~~are~~ is slowly opening ~~their~~ its doors to gas and oil exploration, but the resource base and production timetable are highly uncertain. Global environmental concerns and constraints are much higher, and more prevalent, than they were 20 years ago. And as always, energy efficiency and new ~~renewable~~ technologies must be ~~poised to deal with~~ posed ~~against~~ the reality of an unevenly distributed and ultimately declining hydrocarbon reserve base.

During the past twenty years, oil imports have accounted for an enormous portion of our trade deficit. Since 1986, oil imports have risen by more than 25 percent, and the Energy Information Administration projects that we will cross the 50 percent net import threshold in 1995 or 1996.¹¹ This trend is shown in Figure 6. In 1992, petroleum provided 41 percent of the energy consumed in the United States and the nation imported 41 percent of its net petroleum supply.¹² The U.S. Office of Technology Assessment has estimated that U.S. imports could rise to levels as high as 70 percent by the year 2000.¹³

Our huge expenditures on oil imports are a major part of our negative balance of trade. Between 1980 and 1992, the U.S. paid to other countries \$742 billion (1987 dollars) to purchase imported crude oil and petroleum products.¹⁴ The potential effect of these imports is to transfer American wealth abroad at a time when public and private investment needs in the U.S. are substantial and growing. Savings from

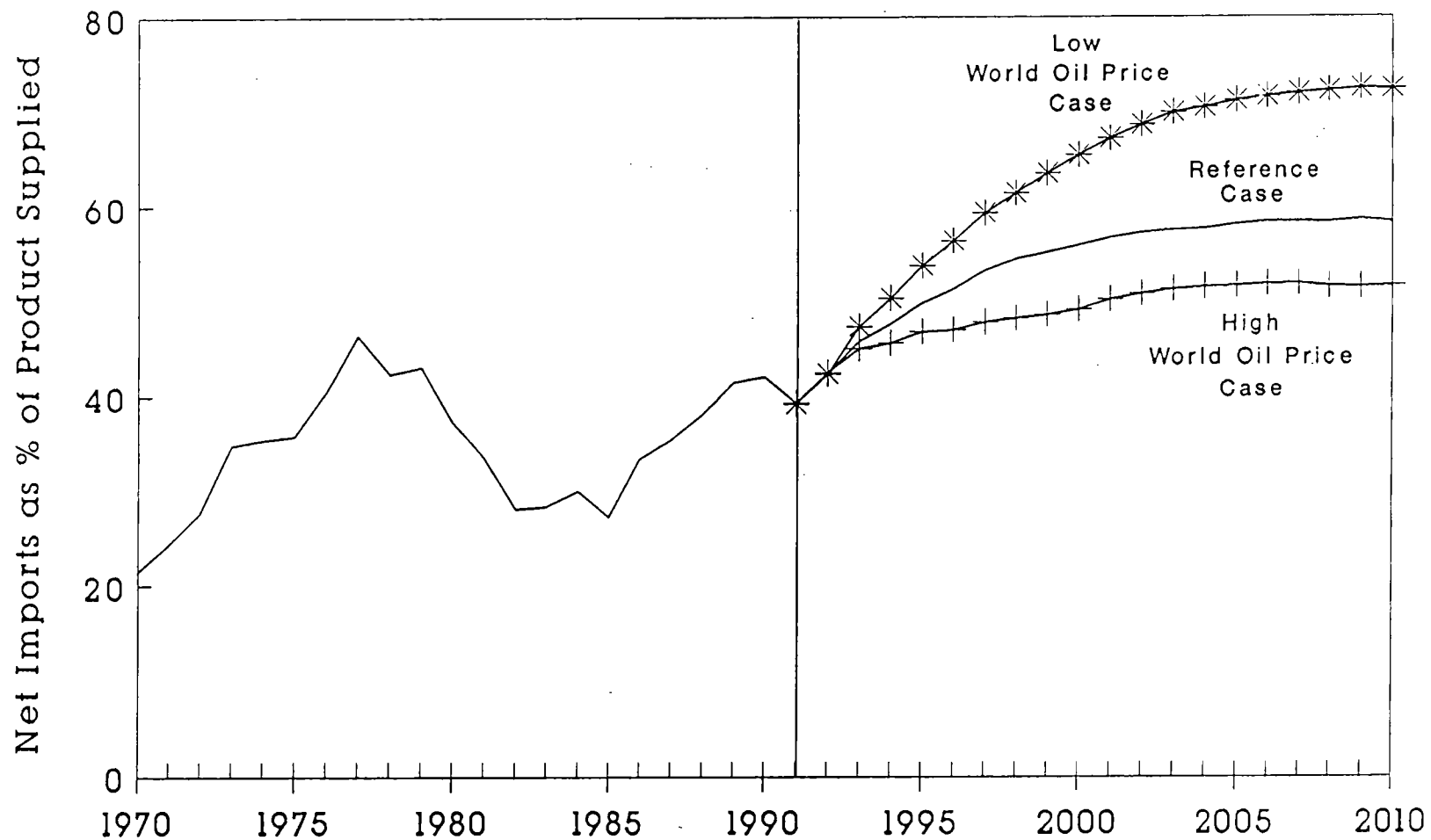
¹¹ Energy Information Administration: Annual Energy Outlook 1993, Table A1, page 81.

¹² Energy Information Administration; Annual Energy Review 1992, Table 1.3 and Table 5.1.

¹³ United States Congress, Office of Technology Assessment. U.S. Oil Import Vulnerability. October 1991, page 3.

¹⁴ Energy Information Administration; Annual Energy Review 1992, Table 3.3, p. 75.

Figure 6. U.S. Dependence on Petroleum
Net Imports



Source: Energy Information Administration

energy efficiency and the cost-effective substitution of domestic supply for oil imports represent a prospective fiscal stimulus and an investment in our future.

This Administration recognizes the substantial costs of imported oil to this country and the need to insure that such costs do not increase. We recognize, too, that there are also benefits to the nation from trade and ~~low reduced~~ oil prices. In addition to attempting to better quantify and characterize these costs and benefits, coordination of activities under this initiative with other policies influencing national energy supply and demand are needed to more effectively diminish the current trend toward increased U.S. energy dependency.

In the past, the federal government has too often ignored potential economic and geopolitical risks until they became certainties. In view of our rising import dependence as well as the many facets of economic and political change, it is essential that the nation conduct a broad, long-term re-examination of the full range of global gas and oil market risks and vulnerabilities the U.S. faces over the next twenty years.

As a result, the DOE will lead an interagency committee, coordinated by the NEC and NSC, to assess the economic, security, and environmental implications of rising U.S. oil import dependence. The assessment should define and characterize the short and long-term economic impacts associated with greater oil import dependence by the United States (including the contribution of oil imports to the loss of jobs and the nation's trade deficit). The assessment will also identify and evaluate the impacts of opportunities for the diversification of oil supply.

V. SUMMARY AND CONCLUSION

During his campaign, President Clinton stated that "a primary goal of the Clinton/Gore National Energy Policy will be reducing the amount of foreign oil consumed in America." The achievement of this ambitious goal will require a coordinated strategy that ranges far beyond policies primarily directed at gas and oil supplies. We must continue to improve our energy efficiency, increase our use of renewable energy resources, increase the use of alternative fuels for transportation, diversify our international sources of supply, and develop new methods of production that promise to reduce costs, pollution and energy use simultaneously.

This coordinated strategy, in turn, must reconcile conflicts between the need for energy supply and environmental preservation. Confrontation predicated on the erroneous belief that these two goals are incompatible has led to much delay, litigation, and frustration, and has threatened to lock up valuable resources that could benefit the nation. While the nation must protect the environmental heritage we hand down to future generations, these values can and must become compatible with careful resource development.

Of equal importance, it is time to acknowledge the fact that the exploration and extraction of fuels is an economically strategic industry. American competitiveness depends on the skills and productivity of American workers. We cannot maintain our present technological and skill-base edge in the international energy markets without a viable domestic gas and oil industry in which to train and deploy workers. Similarly, we cannot increase our technological edge, nor exercise world environmental leadership, if we no longer invest in R&D and produce domestic energy resources in an environmentally sound manner. To safeguard our security, improve our technology and skill base, and exercise environmental leadership, domestic gas and oil supplies must remain a part of this fabric and a full-fledged contributor to the nation's economic future.

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DOMESTIC NATURAL GAS AND OIL INITIATIVE
IMPLEMENTATION PLAN
October 13, 1993

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INITIALS: AOB DATE: 9/5/13

INTRODUCTION

This Implementation Plan is a companion document to the Department of Energy's Domestic Natural Gas and Oil Initiative Policy Statement. In the Policy Statement, the Department establishes certain policies to continue and improve our technological superiority in the domestic natural gas and oil industries, streamline regulations without sacrificing environmental protection, and other measures to enhance economic security, create jobs, and safeguard the environment.

The Initiative groups these activities into four main elements:

**ELEMENT I: ADVANCE AND DISSEMINATE
 GAS AND OIL TECHNOLOGIES**

ELEMENT II: STIMULATE MARKETS FOR NATURAL GAS

**ELEMENT III: IMPROVE COMMUNICATION AND GOVERNMENT
 DECISION MAKING**

INTERAGENCY STUDY OF IMPACTS OF OIL IMPORTS DEPENDENCE

This Implementation Plan describes, in additional detail, actions the Department of Energy and other federal agencies will carry out to implement each of these elements. The Plan is divided into four sections, each devoted to an element. Each section lists the specific nature of the implementation activity, the agencies involved, and the extent to which additional legislation or executive action is required to carry out the specific action.

Table 1 provides a tabular summary and overview of all four elements of the Implementation Plan. The leftmost column of the table lists specific actions and the next three columns highlight the major contributors involved in action implementation. The rightmost column of the table contains specific agencies involved and other comments.

Table 1
Summary of Domestic Natural Gas and Oil Initiative Implementation Actions

Action	Solution Requires:			Comments All R&D actions require Congress to provide funds and agencies to implement programs. DOE will maximize industry involvement in implementation.
	DOE Action	Action by Other Agencies	Legislative Action	
ELEMENT I: ADVANCE AND DISSEMINATE GAS AND OIL TECHNOLOGIES				
1.0 Promote Gas and Oil Technology Advancement				
1.1 Develop Advanced Computational Technology Initiative	●			
1.2 Develop Natural Gas Advanced Rock Drilling Systems	●			
1.3 Develop a Commercialization Strategy for Natural Gas Technologies	●	●		DOD, State/Tribe
1.4 Stimulate Development of a Nationwide, Regionally Based Gas and Oil Technology Transfer Network and Assistance Program	●			
1.5 Fund Expanded Industry-Driven RD&D for Advanced Oil Recovery Technologies	●			
1.6 Conduct Advanced Geological Basin Analysis to Target Exploration for Bypassed Gas and Oil	●	●		DOI
1.7 Target a Research Program Specifically at the Everyday Problems of Small Gas and Oil Producers	●			
1.8 Promote Expenditures on Advanced Computational Techniques and New Technologies Used in Exploration through More Favorable Tax Credits	●	●	●	Treasury
1.9 Utilize the Naval Petroleum and Oil Shale Reserves for Advanced Technology Testing, Evaluation, and Training	●			
2.0 Improve Environmental Technologies and Practices				
2.1 Improve Environmental Compliance Technologies and Practices	●	●		EPA
2.2 Establish Environmental Research Advisory Committee(s)	●	●		EPA, State/Tribe
2.3 Explore DOE's Role in Oil Spill R&D	●	●		DOT, DOE, OMB, State/Tribe
2.4 Study Used Oil Recycling	●	●		EPA, State/Tribe

Table 1
Summary of Domestic Natural Gas and Oil Initiative Implementation Actions

Action	Solution Requires:			Comments All R&D actions require Congress to provide funds and agencies to implement programs. DOE will maximize industry involvement in implementation.
	DOE Action	Action by Other Agencies	Legislative Action	
ELEMENT II: STIMULATE MARKETS FOR NATURAL GAS				
3.0 Improve Natural Gas Infrastructure				
3.1 Upgrade State Production Data Collection and Reporting	●			State/Tribe Requires budgetary support for fiscal year 1994
3.2 Build a National Deliverability Capacity Model	●			Requires budgetary support
3.3 Enhance Real-Time Monitoring and Automated Systems	●			No regulatory action required due to Order 636 implementation
3.4 Build System for Assessing Underground Storage Operations	●			State/Tribe Requires budgetary support
3.5 Match Gas Storage to End-User Requirements	●			State/Tribe No regulatory action required. Budgetary requirement for full demonstration
3.6 Demonstrate Storage Revitalization Technology	●			State/Tribe No regulatory action required. Project requires budgetary approval with funding by GRI.
3.7 Improve Storage Effectiveness for Problem Fields	●			State/Tribe No regulatory action required, only budgetary
3.8 Strengthen and Expand the Current Clean Cities Program	●	●		EPA
4.0 Support Natural Gas Regulatory Reform and a "Contract Portfolio" Approach				
Reform Federal Rate Regulations				
4.1 Ensure Robust Secondary Markets for Pipeline Capacity	●	●		FERC EBB/EDI essential
4.2 Encourage Open Access to the Electric Transmission Grid	●	●		FERC

Table 1
Summary of Domestic Natural Gas and Oil Initiative Implementation Actions

4

Action	Solution Requires:			Comments All R&D actions require Congress to provide funds and agencies to implement programs. DOE will maximize industry involvement in implementation.
	DOE Action	Action by Other Agencies	Legislative Action	
4.3 Expedite Construction of New Natural Gas Facilities	●	●		FERC, EPA
4.4 Develop Incentive-Based Rate Structures for Interstate Natural Gas Pipelines in Noncompetitive Markets	●	●		FERC
Reform State Rate Regulations				
4.5 Encourage Open Access for Gas Transporter through Distributor, to Resolve the "Contract Portfolio" Issue	●			State/Tribe
4.6 Promote the Use of Efficient Gas Pricing	●			State/Tribe
4.7 Encourage the End of Fuel-Specific Subsidies	●			State/Tribe
4.8 Promote Efficient Pricing of Electricity	●			State/Tribe
4.9 Foster the Use of Incentive Rate Design	●			State/Tribe
4.10 Encourage the Elimination of Regulations that Inhibit the Use of Natural Gas in Vehicles	●			State/Tribe States may have safety laws that need to be revised.

Table 1
Summary of Domestic Natural Gas and Oil Initiative Implementation Actions

Action	Solution Requires:			Comments All R&D actions require Congress to provide funds and agencies to implement programs. DOE will maximize industry involvement in implementation.
	DOE Action	Action by Other Agencies	Legislative Action	
5.0 Provide Information Services				
5.1 Develop an Energy and Resources Mapping and Information System (ERMIS)	●			State/Tribe Requires budgetary support
5.2 Enhance Energy Information Administration (EIA) Natural Gas Storage Data Collection	●			FERC, OMB, State/Tribe Requires OMB approval Requires budgetary support
5.3 Develop Contact Lists Readily Accessible to the Gas and Oil Industry	●	●		DOT, USDA, DOC, EPA, FERC, DOI, OMB, State/Tribe Requires participation by other agencies
ELEMENT III: IMPROVE COMMUNICATION AND GOVERNMENT DECISION-MAKING				
6.0 Simplify Regulations Without Compromising Environmental Protection				
6.1 Streamline State and Federal Regulation	●	●		EPA, DOI, DOT, USDA, State/Tribe
6.2 Expand Regulatory Impact Analyses -- E.O. 12291	●	●		EPA, DOI, DOT, USDA, OMB
6.3 Enhance State and Federal Regulatory Decision-Making Capability	●	●		EPA, DOI, State/Tribe
6.4 Provide Proactive Support to Legislative Processes	●	●		EPA, DOI, USDA, DOT, State/Tribe
6.5 Progress Beyond Command and Control Regulation	●	●	●	EPA, DOI, USDA, State/Tribe
6.6 Enhance Dialogue through Industry/Government/Public Partnerships	●	●		EPA, DOI, USDA, State/Tribe
6.7 Consider the Findings and Recommendations of the National Petroleum Council Report on U.S. Petroleum Refining	●	●		EPA
7.0 Evaluate Access to Federal Lands				USDA, DOI, State/Tribe
7.1 Implement Federal Lands Working Group	●	●		
7.2 Develop Gas and Oil Resources of the Naval Oil Shale Reserves	●			DOI
7.3 Increase Production on the Deepwater Outer Continental Shelf (OCS)	●	●		DOI

Table 1
Summary of Domestic Natural Gas and Oil Initiative Implementation Actions

6

Action	Solution Requires:			Comments All R&D actions require Congress to provide funds and agencies to implement programs. DOE will maximize industry involvement in implementation.
	DOE Action	Action by Other Agencies	Legislative Action	
7.4 Provide Incentives for Development of Marginal Prospects on the Gulf of Mexico Outer Continental Shelf (OCS)	●	●		
7.5 Enhance Ability of Smaller Operators to Meet Outer Continental Shelf (OCS) Financial Requirements	●			
8.0 Work with States and Tribes				
8.1 Work with States on the Domestic Natural Gas and Oil Initiative	●			State/Tribe
8.2 Increase Domestic Natural Gas and Oil Production and Environmental Protection of Tribal Lands	●	●		DOI, State/Tribe Requires additional funding
9.0 Address West Coast Production Constraints				
9.1 Open Access to Crude Oil Pipelines in California	●	●		DOI, DOJ, State agencies
10.0 Communicate the Strategic Role of the Gas and Oil Industry				
10.1 Develop and Implement a Public Awareness Program for Gas and Oil	●	●		DOL, DOI
10.2 Enhance National Petroleum Council Scope	●			
INTERAGENCY STUDY OF IMPACTS OF OIL IMPORT DEPENDENCE				
11.0 Interagency Study of Impacts of Oil Import Dependence				
11.1 Establish Interagency Oil Import Dependence Study Committee	●	●		NSC, NEC, CEA, Treasury, USTR, OMB, DOC, DOD, State/Tribe
11.2 Stabilize Prices with Government Fuel Expenditures	●	●	●	OMB, DOD, HHS Authorizing Legislation/program development

ELEMENT I: ADVANCE AND DISSEMINATE GAS AND OIL TECHNOLOGIES

Action Area 1: Promote Gas and Oil Technology Advancement

1.1 Develop an Advanced Computational Technology Initiative

DOE will pursue an Advanced Computational Initiative to enhance, apply, and transfer technologies developed within the Department's National Laboratories to improve the competitive stance of domestic gas and oil companies and to decrease the nation's dependence on foreign oil. This program will enable industry to capitalize on the capabilities of the National Laboratories in earth sciences, computer science, fluid dynamics, and mathematics. Driven by the needs of the domestic industry the Initiative will use advanced technologies, such as 3-D seismic and reservoir simulation, to integrate the fundamental geologic and engineering data and analyses required for the development of domestic gas and oil fields.

The first phase of the initiative will be organized under an expansion of the existing Petroleum Technology Partnership, currently operated for DOE's Office of Fossil Energy by Sandia and Los Alamos National Laboratories, with other National Laboratories being added the partnership. The Initiative will be driven by an industry forum which will review and prioritize all proposals.

1.2 Develop Natural Gas Advanced Rock Drilling Systems

DOE will initiate a comprehensive advanced drilling system development program to ensure future supplies of natural gas to the consumer at a reasonable price. Cost-effective drilling methods in medium- to hard-rock gas formations at current gas prices offers one of the most significant technological challenges for the domestic gas industries. The development of advanced underbalanced air drilling and high-efficiency drilling rig retrofit systems will result in more cost-effective development of gas supplies. DOE will initiate cost-shared development and field testing of these advanced drilling systems.

1.3 Develop a Commercialization Strategy for Natural Gas Technologies

DOE will develop, with input from industry and the DOE technology programs, department-wide policy guidelines and commercialization strategy for natural gas technologies for use in all sectors of the gas system, including (exploration and production), delivery and storage, end-use, environmental technologies. After policy guidelines and a commercialization strategy are developed, objectives and strategies for specific technology groups will be incorporated into the annual budgeting cycles.

1.4 Stimulate Development of a Nationwide, Regionally Based Gas and Oil Technology Transfer Network and Assistance Program

DOE will stimulate development of a comprehensive, nationwide technology transfer network and assistance program. The program will build on the strong core of gas- and oil-related technology transfer mechanisms already in place, including formal and informal efforts by industry, service companies, consultants, the Department of Energy and National Laboratories, other Federal and State agencies, and universities. It will encourage closer integration and coordination among existing technology transfer mechanisms and information networks, and further the development of new initiatives to meet client needs not adequately served under existing programs.

DOE will provide initial funding, on a cost-shared basis, for a focused and aggressive program to increase the availability and application of current information and technology throughout the domestic gas and oil industry. To the greatest extent possible, DOE will involve service companies, consultants, universities, the State Geological Surveys, other State agencies, professional societies, and existing consortia and industry associations in these programs, in order to take full advantage of existing networks and to encourage the formation of new networks. The program will also increase communication and interaction between the industry and the financial and environmental communities, and help disseminate the environmental compliance technologies discussed in other sections.

1.5 Fund Expanded Industry-Driven RD&D for Advanced Oil Recovery Technologies

DOE's existing program of cost-shared field demonstrations and supporting research will be expanded for a six-year period to increase advanced oil recovery capabilities and reduce the rate of reservoir abandonment. Currently, demonstration projects are selected in one new geologic class per year, with research funding at or below historical levels. The program will be expanded in four ways:

- Field demonstrations will be expanded to address two geologic classes per year.
- In-depth evaluations of past or ongoing projects will be done to (1) significantly increase information transfer on the most effective techniques for use under specific conditions, and (2) to define technological challenges for each class not currently being addressed.
- Field-based reservoir characterization and innovative recovery process

experiments will be conducted, starting with the highest priority classes to refine advanced technologies tested in the laboratory.

- Supporting research will be expanded to address industry-identified needs.

1.6 Conduct Advanced Geological Basin Analysis to Target Exploration for Bypassed Oil and Gas

DOE will lead a vigorous geologic analysis of oil-bearing basins, in order to open up new paths for oil discovery and associated gas discovery. In mature regions, yet-to-be-discovered oil reservoirs tend to be relatively small and subtle features. The most effective way to find more of these reservoirs is through geologic analysis which extrapolates patterns and similarities from one geologically comparable basin to another. This analysis will require pulling together teams to integrate the skills of geologists, engineers, and other geoscientists from industry, States, the U.S. Geological Survey and other sources.

1.7 Target a Research Program Specifically at the Everyday Problems of Small Gas and Oil Producers

DOE will add a component to its oil research program which specifically addresses the technical needs of smaller independent oil and gas producers. Many simple, everyday technical problems, often associated with the operation of marginal wells, could benefit from a disciplined scientific approach using expertise currently available within the industry, DOE, the National Laboratories, and other research organizations and inventors. For example, introducing some basic computer analysis, scientific, or engineering analyses to independents has allowed them to solve problems at a lower cost. The effort will be a joint program of DOE's Office of Fossil Energy (FE) and Office of Energy Efficiency (EE), and will be designed to assemble and/or develop improved operating procedures, equipment modifications, and new equipment, and the necessary demonstration and marketing of cost-saving and regulation-meeting products to small gas and oil operators.

This program will not compete with service companies and consultants but rather use them to commercialize and disseminate the products. In particular, it will encourage procedure/product field demonstration and marketing/manufacture links with product innovators/researchers and target operators.

1.8 Promote Expenditures on Advanced Computational Techniques and New Technologies Used in Exploration through More Favorable Tax Credits

This action will stimulate the development of advanced computational techniques (e.g. three-dimensional seismic mapping), horizontal drilling, and other technologies used in exploring for new gas and oil reserves. The tax code will be modified to allow expensing of all geological and geophysical (G&G) costs. (Currently, G&G costs for dry holes can be expensed, while G&G costs for successful wells must be capitalized.) Since G&G expenses are similar in many respects to intangible drilling costs, which can be expensed for tax purposes, similar treatment may be warranted.

Since the vast majority of gas and oil fields yet to be found in the U.S. will be small and/or subtle traps, finding costs are rising and such small fields are typically economically marginal. This incentive will encourage the use of existing technologies and the development of new technologies needed to improve exploration techniques and efficiencies to find the remaining reserves at the lowest cost.

1.9 Utilize the Naval Petroleum and Oil Shale Reserves (NPOSR) for Advanced Technology Testing, Evaluation and Training

The NPOSR sites offer opportunities for advanced technology testing, evaluation and training in new oil field and environmental technologies. NPOSR's Casper, Wyoming office is working closely with the Denver Regional Office of Energy Efficiency and Renewable Energy to establish an Advanced Technology Transfer and Training Center for the Rocky Mountain Region. This will be integrated with the National Technology Transfer Network and Assistance Program previously discussed in Action Area 1.4.

New applications that lead to increased production, lower operating costs and improved environmental compliance costs can be tested at the Naval Petroleum Reserve No. 3 (NPR-3) in Wyoming, which is owned and operated by DOE. These validated applications could be used in mature, marginally profitable oil fields, and transferred to newer fields, potentially increasing domestic oil production by prolonging the life of these oil fields. The Center will serve industry, DOE laboratories, and individual inventors through the Department's Energy Related Inventions Program. In addition, it will serve the academic and other communities, such as Indian tribal councils, by providing hands-on training opportunities for students and others who need oilfield experience.

Action Area 2: Improve Environmental Technologies and Practices

2.1 Improve Environmental Compliance Technologies and Practices

DOE will conduct an aggressive environmental technology development and demonstration program to enable the domestic gas and oil industry to more cost-effectively comply with rapidly evolving environmental regulatory requirements. A key objective will be to enhance the capability of gas and oil producers and refiners to reduce environmental compliance costs and liabilities, and to improve environmental performance.

The Department of Energy, in cooperation with the Environmental Protection Agency, the Department of the Interior, and others, will pursue the following activities:

- Develop a comprehensive strategy for improving environmental compliance technology and practices, including follow-up to the review of the National Petroleum Council report on the domestic refining industry discussed in Action Area 6.7 of Element III.
- Expand research to develop and field test more cost-effective environmental compliance technologies applicable to gas and oil exploration, production, and refining operations.
- Explore efforts to form "technology partnerships" between industry and the National Laboratories to address environmental issues specific to domestic gas and oil exploration, production, and refining operations.
- Support efforts by industry, government, and others to exchange technical information on the environmental aspects of oil and gas operations.
- Support individual company activities to establish programs to promote and institutionalize waste reduction.

2.2 Establish Environmental Research Advisory Committee(s)

DOE will work to improve coordination among industry, government, and others on environmental research and technology transfer activities related to oil and gas exploration, production, and refining. The Department will investigate mechanisms to improve coordination on oil and gas environmental research and technology transfer activities. This may entail examining the feasibility of:

- Working cooperatively with non-profit organizations such as the Society of

Petroleum Engineers, and the Ground Water Protection Council, the National Petroleum Refiners Association, and the Petroleum Environmental Research Forum to improve coordination and technology transfer on specific research topics.

- Establishing national and regional gas and oil environmental research advisory committees.

2.3 Explore DOE's Role in Oil Spill R&D

The Department of Energy will take a more active role in research and development efforts to improve technologies for preventing and managing oil spills. OPA 90 created the Interagency Coordinating Committee on Oil Pollution Research and identified DOE as a member. DOE will explore the potential for an appropriate contribution in oil spill R&D that will use the capability of the National Laboratories as well as coordinate with industry. This effort will be coordinated with the Coast Guard, as the lead agency for the Interagency Coordinating Committee on Oil Pollution Research, and the Minerals Management Service (MMS) of the Department of the Interior.

2.4 Study Used Oil Recycling

DOE will conduct a study to consider various policy alternatives on the complex issue of recycling used lubricating oil. The study will examine alternatives, such as (1) better collection of data, including used oil reprocessing, rerefining, and disposal statistics; (2) estimates of damage from improper used oil disposal; (3) estimates of future oil recycling given current EPA rulings and projected oil prices; (4) consultation with States to develop model State legislation if further recycling incentives are needed; (5) research on how to remove or render harmless metals in used oil such as lead and cadmium; and (6) analysis of possible additional Federal regulatory or legislative action.

ELEMENT II: STIMULATE MARKETS FOR NATURAL GAS

Action Area 3: Improve Natural Gas Infrastructure

3.1 Upgrade State Production Data Collection and Reporting

This initiative will endeavor to create a single information collection point in each State and to achieve information compatibility between States and the Federal government. This will be achieved by taking the following steps:

- Two or more States would join in cooperative demonstrations to upgrade their gas production systems to be compatible with the University of Oklahoma model with co-funding of hardware and software acquisition by DOE.
- Evaluation of the successful start-up of these initial systems would result in a plan for implementation of systems in all gas-producing States. Though not identical because of individual State needs, systems will be similar enough to assure complete compatibility among States.

3.2 Build a National Deliverability Capacity Model

This project will develop a model for estimating the capability of the United States to deliver natural gas to customers, linking wellhead productive capacity estimates with pipeline capacity on a State-to-State basis. This will be achieved by:

- A PC-based system developed for the analysis of domestic natural gas deliverability for use throughout DOE.
- A study using the PC-based system to determine the current capability, the impact of projected changes in supply and demand patterns, and planned pipeline expansion on the capability of the system.
- An annual EIA summary report on domestic natural gas deliverability capability, including presentation of the study.

3.3 Enhance Real-Time Monitoring and Automated Systems

This action will provide new and advanced technologies for use in the transportation of gas that will foster increased gas deliverability to customers, improved efficiency, reduced operating costs, and streamlined information gathering and dissemination on natural gas flow and pressure. The following steps will be taken:

- Facilitate the implementation of FERC Order No. 636 to develop a secondary market to provide for an efficient and competitive environment and help reduce the overall cost to end-users of natural gas.
- Support the recommendations of the Natural Gas Council to develop a Gas Industry Standards Board to develop a single national standard for the

reporting of gas transactions at all U.S. pipeline delivery points via electronic bulletin boards.

- Initiate a series of surveys to determine the level of communication technology, both hardware and software, that the gas industry would require to develop and demonstrate this project on a regional basis.
- This action may involve special use of telecommunication facilities for data transmission, and therefore require prior approval by the FCC.

3.4 Build System for Assessing Underground Storage Operations

This project would develop an information system for evaluating domestic storage capacity and deliverability on a site-specific basis, documenting and assessing new technologies for developing and managing storage as well as the role of storage in meeting variable demand patterns. This will be achieved by taking the following steps:

- Establish a database of site-specific information on storage facilities including geographical and geologic information, capacity, operational information (number of wells, peak day deliverability), ownership data, and withdrawal and injection information on a monthly basis.
- Merge the database into the EIA Energy and Natural Resource Information Mapping System (ENRIMS) to allow cross-referencing with pipeline connections, pipeline capacity, and market information.
- Develop a PC-based system for evaluating changes and efficiency gains from the development and use of storage in the national natural gas delivery system.

3.5 Match Gas Storage to End-User Requirements

This effort will identify market areas where new and expanding natural gas capacity can meet increasing industrial and power generation demand. It will also establish proof-of-concept and subsequent field demonstrations of alternative storage methods and identify improvements in the system from the alternative storage reservoir to the burner tip. To achieve this, DOE will:

- Identify strategic market areas for new and growing natural gas capacity; identify, screen, and rank each possible underground reservoir for its potential and complete geologic modeling, engineering design, and cost-to-develop studies.
- Conduct a feasibility study of alternative gas storage methods such as tight and tight/fractured reservoirs; thin-bedded salt formations; and nonreservoir rock, chambers, and surface facilities.
- Conduct one or more field demonstrations near power generation facilities to increase the amount of gas dedicated to the power generation market.

3.6 Demonstrate Storage Revitalization Technology

To maintain the storage system capability and reduce overall storage costs, new and improved storage technologies and techniques must be developed. In order to do this, the following steps will be taken:

- Conduct a gas storage revitalization project to evaluate new/improved techniques, e.g., propellant fracturing, chemical treatment, and hydraulic stimulation methods for existing wells. Multiple candidate wells will be selected for field verification tests.
- Through cooperative DOE/Industry agreements, develop a methodology to improve storage field technology through geologic modeling and reservoir simulation studies of selected storage fields. Field development strategies would be investigated, such as increasing injection/withdrawal rates using horizontal wells and optimizing surface facilities for reducing development costs.

3.7 Improve Storage Effectiveness for Problem Fields

The Department of Energy (DOE) storage program will develop and demonstrate new and improved technologies for detecting and inhibiting gas migration from the storage area, as well as develop methodologies to reduce other costs associated with managing underground gas storage fields. In order to do this, DOE will take the following steps:

- Conduct gas migration study of problem fields followed by field verification tests to determine the effectiveness of horizontal wells, surfactant/foams, or other technologies to reduce the costs of gas migration.
- Perform a gas trapping study in aquifer storage fields.
- Implement field verification tests of methods to reduce gas migration and gas trapping.

3.8 Strengthen and Expand the Current Clean Cities Program

Perhaps in no other program is the federal/state/local government partnership with industry more evident than in the Clean Cities Program. This is an initiative developed by DOE as a way to accelerate the use of alternative fuels in transportation markets. Although the Energy Policy Act mandates the acquisition of large numbers of alternative fuel vehicles (AFVs) for government fleets, it did not provide an implementation framework. The Clean Cities commitment by DOE will develop the infrastructure necessary to respond to the Energy Policy Act's requirements **as well as** the goals of the Clean Air Act Amendments (CAAA), that is, cleaning up the dirtiest air in the most cost-effective way possible. DOE, EPA and its state and local partners will take the following action:

Currently, 20 areas have expressed an interest in being designated as a Clean City or State. Prior to such a designation, all participants are required to make certain commitments. The goal is to aggregate purchases of alternative fueled vehicles, to expand the infrastructure available and to encourage automobile manufacturers to build more varieties of vehicles. In this effort, DOE will: appoint a Federal coordinator specifically for the selected city; encourage the placement of as many Federal AFVs as possible in or near the selected city under the provisions of AMFA, CAAA, and EPACT; provide a hotline/clearinghouse for technical and other information; provide sources for training for coordinators, open fleet operators, and other participants; provide information and general assistance on public relations and promotional activities; and, conduct information exchange workshops for participating cities and potential participants.

Action Area 4: Support Natural Gas Regulatory Reform and a "Contract Portfolio" Approach

Reform Federal Rate Regulations: Actions 4.1 through 4.4

Based on data developed from the experience of natural gas industry operations under FERC Order 636 in the 1993-94 winter hearing season.

DOE will work cooperatively with the FERC to undertake the following actions:

4.1 Ensure Robust Secondary Markets for Pipeline Capacity

The Department of Energy will work with FERC on a rulemaking that will address ceilings on secondary transactions of pipeline capacity, the extent to which monopoly abuse may be present in capacity resale markets and the way in which completed transactions will be posted. This will provide greater latitude in the arrangement of these buy-sell transactions. This change will be dependent upon the development of mechanisms, such as Electronic Bulletin Boards and Electronic Data Interchanges, that will make timely secondary market information available to all who use the pipeline system.

4.2 Encourage Open Access to the Electric Transmission Grid

The Energy Policy Act of 1992 set in motion a trend that is leading toward increased access to the electric transmission system and further competition in power generation. FERC has responded by issuing policies and inquiries into transmission pricing, regional transmission groups, good faith requests for electric transmission and the creation of a transmission data base. The DOE will work with FERC as it continues this process of establishing the rules which

govern access to the electric transmission grid, including the promotion of regional transmission groups.

4.3 Expedite Construction of New Natural Gas Facilities

The DOE will work with FERC to draft generic rulemaking(s) as necessary to expedite natural gas pipeline certification. Among other things, the rule will contemplate a negotiated rate mechanism whereby parties can get automatic FERC approval for new pipeline construction provided they have satisfied National Environmental Protection Act environmental regulations. The DOE, working with the FERC, the Environmental Protection Agency and other affected Federal agencies, will work to identify practices that can expedite the environmental review process for new pipeline certification.

4.4 Develop Incentive-Based Rate Structures for Interstate Natural Gas Pipelines in Noncompetitive Markets

The Department of Energy (DOE) will work with FERC, the National Association of Regulatory Utility Commissioners (NARUC), and a group of State utility commissions on promulgating new rulemakings which divorce the pipelines' rates from their costs. The rulemaking would go beyond FERC's policy statement on incentive ratemaking in moving the pipeline industry toward a competitive environment. Among the incentive rate mechanisms which would be considered are indexes, price caps, bounded rates, and incentive rates of return. Regulation would cap prices, not profits. This idea of "decoupling" costs from rates is addressed in the Energy Policy Act of 1992 in looking at Integrated Resource Planning, and States are beginning to consider this issue more seriously. To the extent that a particular market can be shown to be workably competitive, DOE will advocate market-based pricing.

Reform State Rate Regulations Actions 4.5 through 4.10

4.5 Encourage Open Access for Gas Transporter through Distributor, to Resolve the "Contract Portfolio" Issue

The Department of Energy (DOE) will work in cooperation with the National Association of Regulatory Utility Commissioners (NARUC) and several State regulatory commissions to establish additional pilot regulatory programs in which nondiscriminatory access to the distribution system will be available to customers through third-party merchants. Through analysis and pilot programs with interested State commissions and utilities, DOE will provide States the tools to lessen State regulation over those services over which the distributor has no market power. During the pilot program, DOE will be able to monitor

the changes that take place as a result of the reform. The results can then be used as a case study to show other States the value of the reform.

4.6 Promote the Use of Efficient Gas Pricing

This initiative will be carried out by working in cooperation with State regulators who are interested in making the suggested changes, but who do not necessarily have the required manpower or expertise to address marginal cost pricing. DOE will sponsor workshops, submit testimony, produce white papers, and make presentations at conferences supporting these reforms. In addition, DOE will survey some of the efficient pricing efforts in currently in place. Through analysis and pilot programs with interested State commissions and utilities, DOE will give States the tools to reshape gas pricing. During the pilot program, DOE will be able to monitor the changes that take place as a result of the reform. The results can then be used as a case study to help other States see the virtues of the reforms.

4.7 Encourage the End of Fuel-Specific Subsidies

The Department of Energy (DOE) will work cooperatively with State utility regulators, giving States the tools to evaluate integrated resource planning programs that consider electric, gas, and conservation measures simultaneously when determining the most efficient way to meet the needs of customers. This effort will be carried out by working with State regulators who are interested in making the suggested changes, but who do not necessarily have the required manpower or expertise. DOE will sponsor workshops, submit testimony, produce white papers, and make presentations at conferences supporting these reforms. During the pilot programs, DOE will be able to monitor the changes that take place as a result of the reforms. The results can then be used as a case study to help persuade other States of the importance of the reforms.

4.8 Promote Efficient Pricing of Electricity

This effort will be carried out by working with State regulators who are interested in trying marginal cost pricing in their jurisdiction, but do not necessarily have the required manpower or expertise. DOE will sponsor workshops, submit testimony, produce white papers, and make presentations at conferences supporting these reforms. Through analysis and pilot programs with interested State commissions and utilities, the Department will provide the States the tools to reshape electricity pricing. During the pilot program, DOE will be able to monitor the changes that take place as a result of the reform. The results can then be used as a case study to show other States the value of the reforms.

4.9 Foster the Use of Incentive Rate Design

This effort will be carried out by working cooperatively with State regulators who are interested in implementing the basic tenets of incentive ratemaking, but who may lack the required manpower or expertise. DOE will sponsor workshops, submit testimony, produce white papers, and make presentations at conferences supporting these reforms. Through analysis of the new proposals offered by utilities, and pilot programs with interested State commissions and utilities, the Department will make available to States the tools needed to apply incentive ratemaking to their specific situation. During the pilot program, DOE will be able to monitor the changes that take place as a result of the reforms. These results can then be used as a case study to impress on other States the virtues of the reforms.

4.10 Encourage the Elimination of Regulations that Inhibit the Use of Natural Gas in Vehicles

This initiative will be carried out by working cooperatively with State regulators and legislative representatives who are interested in making changes to allow greater use of natural gas vehicles. DOE will sponsor workshops, submit testimony before legislative and regulatory bodies, and make presentations at conferences supporting these reforms.

Action Area 5: Provide Information Services

5.1 Develop an Energy and Resources Mapping and Information System (ERMIS)

This initiative will enable the Department of Energy (DOE) to spatially analyze energy issues at a broad level in order to quickly understand and communicate to responsible parties the potential impact on energy activities of pending legislation, regulations, or policy decisions promulgated by Congress, other Government agencies, and the private sector, that have spatial implications. It will also provide a readily available system to provide consistent, coherent data and information to facilitate decision-making processes.

5.2 Enhance Energy Information Administration (EIA) Natural Gas Storage Data Collection

Under this option, the Energy Information Administration (EIA) of the Department of Energy would speed up the collection and publication of natural gas storage data from a monthly cycle to a weekly cycle, in order to enhance the efficiency of gas trading markets and of all energy users. EIA is already studying the efficacy of this option.

5.3 Develop Contact Lists Readily Accessible to the Oil and Gas Industry

Members of the oil and gas industry and the public often do not know whom to contact within the Federal government to have even their most basic questions answered. The lack of readily available answers can be costly to everyone. This initiative will establish a list within the Federal government for answers to such questions as where to apply for research and development funds, what are the current regulations governing waste water management, who issues site permits, etc. Such questions often arise during the exploration, development, and production of oil and gas and commercialization of new technologies. In order to do this buy-in from other Federal agencies, such as Department of Interior, Federal Energy Regulatory Commission, Environmental Protection Agency, will be obtained to prepare list of contacts, develop data base, and establish procedure for quarterly updates. The system will be advertised through Public Affairs and Energy Information Administration's marketing programs and marketing programs of other participating agencies.

ELEMENT III IMPROVE COMMUNICATION AND GOVERNMENT DECISION-MAKING

Action Area 6: Simplify Regulations Without Compromising Environmental Protection

6.1 Streamline State and Federal Regulation

DOE, working with other Federal and State agencies, will improve the efficiency and effectiveness of State and Federal regulatory programs and reduce undue burdens on the domestic gas and oil industry by improving coordination among regulatory agencies, eliminating redundant or unnecessary regulation, and avoiding duplication in Federal and State regulatory programs.

An interagency working group will be created with representatives from the Department of Energy, Environmental Protection Agency, Department of the Interior, Department of Transportation, Department of Agriculture, and other pertinent Federal agencies will convene to improve coordination on regulatory issues affecting gas and oil supply. DOE will also work cooperatively with States, through organizations such as the Interstate Oil and Gas Compact Commission, to (1) promote regulatory reform and improve the efficiency and effectiveness of State regulatory programs affecting the domestic gas and oil industry, and (2) expand opportunities for improved coordination between State and Federal regulatory agencies.

6.2 Expand Regulatory Impact Analyses -- E.O. 12291

DOE and the Environmental Protection Agency, in conjunction with other Federal agencies, will revitalize an earlier initiative to require Federal agencies to consider impacts on energy supply as part of Regulatory Impact Analyses mandated under Executive Order (E.O.) 12291 for proposed legislation and regulations. Such analyses are required for "major" Federal actions, which are defined as those that will exceed \$100 million in cost to the U.S. economy. Current Office of Management and Budget guidelines for implementing E.O. 12291 do not require consideration of energy supply impacts.

6.3 Enhance State and Federal Regulatory Decision-Making Capability

DOE, and other Federal agencies, will work to enhance the capability of State and Federal governments to make better regulatory decisions affecting the domestic gas and oil industry. DOE will support research and other efforts to (1) increase the availability of sound technical information on the environmental risks associated with gas and oil operations, and the costs and benefits of

alternative regulatory approaches; (2) make available and continue to utilize the unique capability of DOE for performing energy impact analyses to assist State and Federal decision-makers in assessing the impact of environmental and other regulatory actions on gas and oil supply; and (3) expand ongoing efforts by DOE and other Federal agencies to assist States with research and analysis, and improved data management to support risk-based regulatory decisions affecting the gas and oil industry.

6.4 Provide Proactive Support to Legislative Processes

The Administration will provide proactive support to legislative processes, articulating the national energy policy implications of alternative legislative approaches. The focus will be on legislation being considered by Congress, but in some instances it may be appropriate to address actions being considered by State legislatures.

6.5 Progress Beyond Command and Control Regulation

The Administration will develop alternative approaches to environmental regulation that balance the cost of regulation against realistic health and environmental risk, establish priorities among the various environmental protection programs in achieving goals, and promote innovative methods of achieving environmental objectives. A key objective is to hasten the evolution of the current regulatory framework affecting the domestic gas and oil industry from the traditional command-and-control approach to more innovative, cost-effective mechanisms that achieve the same or greater levels of environmental benefit.

6.6 Enhance Dialogue through Industry/Government/Public Partnerships

The Administration will promote dialogue among industry, States, the public, and other interested parties to: (1) address regional environmental issues constraining U.S. gas and oil resource recovery; (2) avoid unnecessary delays in the regulatory permitting process; (3) resolve outstanding disputes concerning gas and oil development; and (4) accomplish dual objectives of environmental protection and energy development.

6.7 Consider the Findings and Recommendations of the National Petroleum Council Report on U.S. Petroleum Refining

The Department of Energy (DOE) will consider the findings and recommendations of a two-and-one-half-year comprehensive study on the future of U.S. petroleum refining that was undertaken by the National Petroleum

Council (NPC), an advisory committee to the Secretary of Energy.¹

DOE will host in the near term one or more seminars for the experts who prepared the NPC report to present the findings, and describe the basis of the analysis to interested stakeholders, government, and congressional staff.

Action Area 7: Evaluate The Effect of Access to Federal Lands

7.1 Implement Federal Lands Working Group

DOE is working with the Department of the Interior (DOI), the United State Forest Service, the Environmental Protection Agency, and others to establish a Federal Lands Working Group to ensure that national energy strategies are appropriately considered in leasing decisions related to Federal lands. Since access to frontier areas should be considered on a regional basis, DOE will participate with DOI in regional or subregional working groups to consider the technical and scientific issues involved in making decisions about access to these areas. A description of the scope of this process will be developed in a Memorandum of Understanding between the Departments. The Coordinating Group will work together to encourage gas production and to consider questions of access to public lands, lease buybacks, and revenue sharing.

7.2 Develop Gas and Oil Resources of the Naval Oil Shale Reserves

DOE will assess the gas and oil resources of the Naval Oil Shale Reserves and make the resources available for development as appropriate if legislative authority is obtained. The first phase of the program, begun in January 1993, will consist of (1) reprocessing seismic data that are available in the DOE archive; (2) acquiring additional, commercially available seismic data; and (3) producing an assessment of the gas and oil potential of Naval Oil Shale Reserves Nos. 1, 2, and 3.

7.3 Increase Production on the Deepwater Outer Continental Shelf (OCS)

The deepwater portions of the Gulf of Mexico represent one of the most promising exploration targets in the United States, but the economic and technological challenges are substantial. Legislation has been proposed that would provide incentives to encourage development in new deepwater areas.

DOE and the Department of the Interior are currently studying the issues

¹ U.S. Petroleum Refining, National Petroleum Council, September 8, 1993.

related to these deepwater incentives. DOE and DOI have told Congress that they would support production incentives for non-moratoria OCS areas if appropriate distinctions are made between treatment of existing and potential future leases.

7.4 Provide Incentives for Development of Marginal Prospects on the Gulf of Mexico Outer Continental Shelf (OCS)

While there are bills before Congress to encourage leasing, exploration, and production from deep water Gulf of Mexico leases, these bills do not address the issue of encouraging exploration and production in the thousands of shallow water blocks in non-moratoria areas of the Gulf of Mexico outer continental shelf. Many of these blocks have not been exploited because the potential is small.

DOE, in conjunction with the Department of Interior, will assess incentives for development of marginal prospects (such as royalty relief) to determine the value of encouraging this shallow water development.

7.5 Enhance Ability of Smaller Operators to Meet OCS Financial Requirements

The Department of Energy and the Department of the Interior are studying the issues related to the loss of jobs and domestic gas and oil production represented by smaller companies who will have difficulty meeting the latest financial requirements for operating on the Outer Continental Shelf (OCS).

The Minerals Management Service has recently published an Advanced Notice of Proposed Rulemaking (ANPR) raising the minimum threshold of financial responsibility for operators on the OCS from \$35 million to \$150 million. The ANPR process is expected to identify several possible options for addressing concerns about the requirements. DOE has asked the National Petroleum Council to quickly provide an analysis of the criteria published in the Advanced Notice of Proposed Rulemaking, as well as recommendations of alternatives to fulfill the intent of the legislation.

Action Area 8: Work With States and Tribes

8.1 Work with States on the Domestic Natural Gas and Oil Initiative

The Federal government will work cooperatively with States, particularly gas and oil producing States, to develop and implement the Domestic Natural Gas and Oil Initiative. States have a primary role in regulating activities of the gas

and oil industry relative to resource conservation, environmental protection, and the use of natural gas.

In June 1993, the Interstate Oil and Gas Compact Commission (IOGCC), the association of the governors of 29 gas and oil producing States established in 1935, passed a resolution that broadly supports the Domestic Natural Gas and Oil Initiative and urges member States to immediately make available all resources at their disposal to assist the Administration in developing workable energy policies.

8.2 Increase Domestic Natural Gas and Oil Production and Environmental Protection on Tribal Lands

DOE will help Tribes gain access to energy technology and environmental management assistance by (1) working with the Administration for Native Americans, Department of Interior agencies, the Council of Energy Resource Tribes, and other Native American organizations including individual Tribes to provide internship opportunities at the Strategic and Naval Petroleum Reserves, and to encourage maintenance and operations (M&O) contractors to do likewise; (2) support proposed projects by individual Tribes while developing appropriate information transfer components that will benefit other Tribes as well; (3) work with the Council of Energy Resource Tribes to build a management and technical foundation at the Tribal level; (4) seek opportunities to facilitate and enhance the evolving alliance between Tribes and industry; (5) exercise leadership within the Administration to support and encourage an expanded Bureau of Indian Affairs resource assessment program; and (6) continue to foster basic science and math education for Native American youth.

This action will deal directly with the issue of possible disproportionate environmental risks borne by minority/low-income populations.

Action Area 9: Address West Coast Production Constraints

9.1 Open Access to Crude Oil Pipelines in California

The DOE will work with the FERC, the Justice Department, and the California Public Utilities Commission to ensure fair tariffs for central California pipelines and with the Department of the Interior on enforcing the common carrier requirements of the Mineral Leasing Act.

**Action Area 10: Communicate the Strategic Importance of
the Natural Gas and Oil Industry**

10.1 Develop and Implement a Public Awareness Program for Gas and Oil

Public perceptions of the gas and oil industry have not kept pace with its changes during the last decade in which the industry has been devastated by recession. The Administration will increase the public's awareness of the strategic importance of this industry in the United States economy through public information programs and outreach activities.

10.2 Enhance National Petroleum Council Scope

In renewing the NPC charter for an additional two-year term, DOE will increase the number of members, adding 15 to 20 from environmental organizations, public interest and consumer groups, and additional end-user groups (such as manufacturers). This will increase the total to approximately 30 who could bring a public/consumer/environmental perspective to the Council.

At the fall/winter meeting of the Council, the Secretary of Energy will formally commission a study of government/industry roles to (1) disseminate facts about the role of the gas and oil industry in the U.S. economy; (2) bring industry, government, and interest groups closer together where disagreements have created barriers to domestic production; and (3) identify ways to settle disputes without litigation.

Action Area 11: Interagency Study of Impacts of Oil Import Dependence

11.1 Establish Interagency Oil Import Dependence Study Committee

The Domestic Natural Gas and Oil Initiative will initiate a review that will assess the economic, security, and environmental implications of rising U.S. oil import dependence. Analysis of the issue centers on questions of national security, costs and benefits to the economy and environment, reactions to these impacts, and the role of the Federal government in addressing the situation. The study will define and characterize the short- and long-term economic impacts associated with greater oil import dependence by the United States. This analysis will also include the effects of oil imports on U.S. employment and trade deficit.

This policy development initiative will be undertaken by an interagency committee, coordinated by the NEC and the NSC with DOE as the lead agency.

The interagency working group will first produce a work plan that will identify the issues to be examined, detail the resources to be provided by group-member agencies, outline the level of involvement by outside experts or institutions, determine the milestones, and describe the final product.

11.2 Stabilize Prices with Government Fuel Expenditures

This initiative will establish a governmental program that will be a counter-part to oil price hedging strategies with domestic oil producers. The price swaps will stabilize both the producers' production revenues and the government's outlays

for fuel and fuel-related programs. The implementation team will include members from the Departments of Energy, Defense, and (perhaps) Health and Human Services, as well as agencies such as the Office of Management and Budget and the National Economic Council. The team will:

- design the program structure so that it is budgetarily and organizationally consistent with governmental statutory and procedural restrictions (e.g., the program might be operated from a revolving fund);
- perform legal research to determine if the program requires special legislative authorities;
- concomitant with the above, draft legislation granting authority for a pilot program that will involve making payment from the fund and receiving payments to the fund associated with hedging activities;
- conduct studies that define the resource requirements of the program and describe the reporting and controls required; and,
- design and conduct a producer outreach program that will recruit producers to the program through their lenders.

The planning phase of the project will be documented in a report that describes the program structure, strategy, resource requirements, and procedures.

THE WHITE HOUSE

WASHINGTON

October 8, 1993

To: Distribution

Cc. Bill White
Bob Rubin
Bo Cutter

From: Heather Ross 

Subject: Domestic Gas and Oil Initiative

The next interagency meeting to consider DOE's Domestic Gas and Oil Initiative will take place on Friday, October 15, at 8:30 a.m. in OEGB Room 476.

This is the first step in the NEC process through which the initiative, an important item on the Administration's economic agenda, will now flow. Further steps are a deputies and a principals meeting which will occur as soon as the interagency group has finished its work -- that is, when agreement has been reached on the content of the initiative or, if necessary, options reflecting unresolved differences have been laid out.

DOE's policy paper reflecting their response to previous agency comments is attached. Please be prepared to sign off on this paper on Thursday or offer alternative language where you believe material changes are needed. DOE is preparing further materials which are an integral part of the initiative and advises that they will be available for circulation to you next Tuesday. Agency contacts should arrange for any appropriate further distribution within their agency and assure that information is not publicly disclosed.

For OEGB clearance, please contact Gaylen Barbour at 456-2802.

PLEASE NOTE

Due to limited messenger availability, the office of the individual highlighted on the attached listing is requested to copy the enclosed documents and distribute them to the other officials in his/her department or agency.

*Cross between
Bill Murray and Pat Buchanan*

~~**CONFIDENTIAL DO NOT DISCLOSE**~~

DOMESTIC GAS AND OIL INITIATIVE
Revised October 5, 1993

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DETERMINED TO BE AN
ADMINISTRATIVE MARKING
INITIALS: 403 DATE: 9/5/13

DOMESTIC GAS AND OIL INITIATIVE

I. INTRODUCTION

Earlier this year Secretary Hazel R. O'Leary announced that the Administration would develop a "plan that will lead to expanded opportunities for domestic gas and oil producers." The Secretary noted that "the end goal of this project will be to develop new and expanded opportunities for jobs in the domestic gas and oil industries, while fostering a climate which will increase production from domestic resource bases and reduce our reliance on foreign oil."

A viable and productive domestic gas and oil industry is essential to our shared national goals of increased economic, national security, and environmental preservation. Even with the aggressive increases in energy efficiency and new sources of supply -- increases the nation must strive to achieve -- a sound economic future requires an investment in our domestic gas and oil industry. By learning to use our gas and oil more resources productively and more wisely, we will preserve worldwide skill and product export opportunities that are vital to our economic future and our leadership role around the world.

This document summarizes the intent of the Domestic Gas and Oil Initiative, which is to develop an effective approach for maintaining the viability of the American gas and oil industry without compromising economic efficiency or environmental quality. We fully recognize that this Initiative is only one part but an important part of the Administration's energy, economic, and environmental policies. In total, these policies reflect the need for job creation and security, global competitiveness, preservation of the environment, improved energy efficiency, and national security. The Administration has developed, and will continue to develop, initiatives that reflect these priorities.

To cite just a few related examples:

- The Clean Car Initiative is dedicated to reducing long-run dependence on oil via improved transportation fuel economy.
- The Climate Change Plan represents the Administration's plan for reducing the growth of gases linked to global warming, primarily via increased energy efficiency actions spearheaded by the Department of Energy.
- The Natural Gas Utilization Initiative is focusing the Department of Energy's research and development efforts on new and more efficient types of natural gas end-use technologies, such as fuel cells and natural gas appliances.

- The Clean Cities Program and the Federal Fleet Conversion Task Force are working to accelerate the introduction of low-pollution, alternative fuel vehicles into our urban airsheds;

In addition to these initiatives, the Department of Energy, the Federal Energy Regulatory Commission (FERC), and other Federal agencies are in the midst of implementing the Energy Policy Act and many other new programs and policies that affect transportation and energy use.

All of these efforts, and many more to follow, affect the nation's gas and oil producers and consumers. However, these efforts stop short of examining issues unique to the exploration, production, and refining of domestic gas and oil resources and the unique economic and energy issues posed by our tremendous reliance on imported oil.

The purpose of this Initiative is to address these issues in the context of the array of new Federal policies. Moreover, the global economic and political environment has changed so much in the past few years that the effects of our petroleum dependence and loss of domestic activity may no longer be well understood.

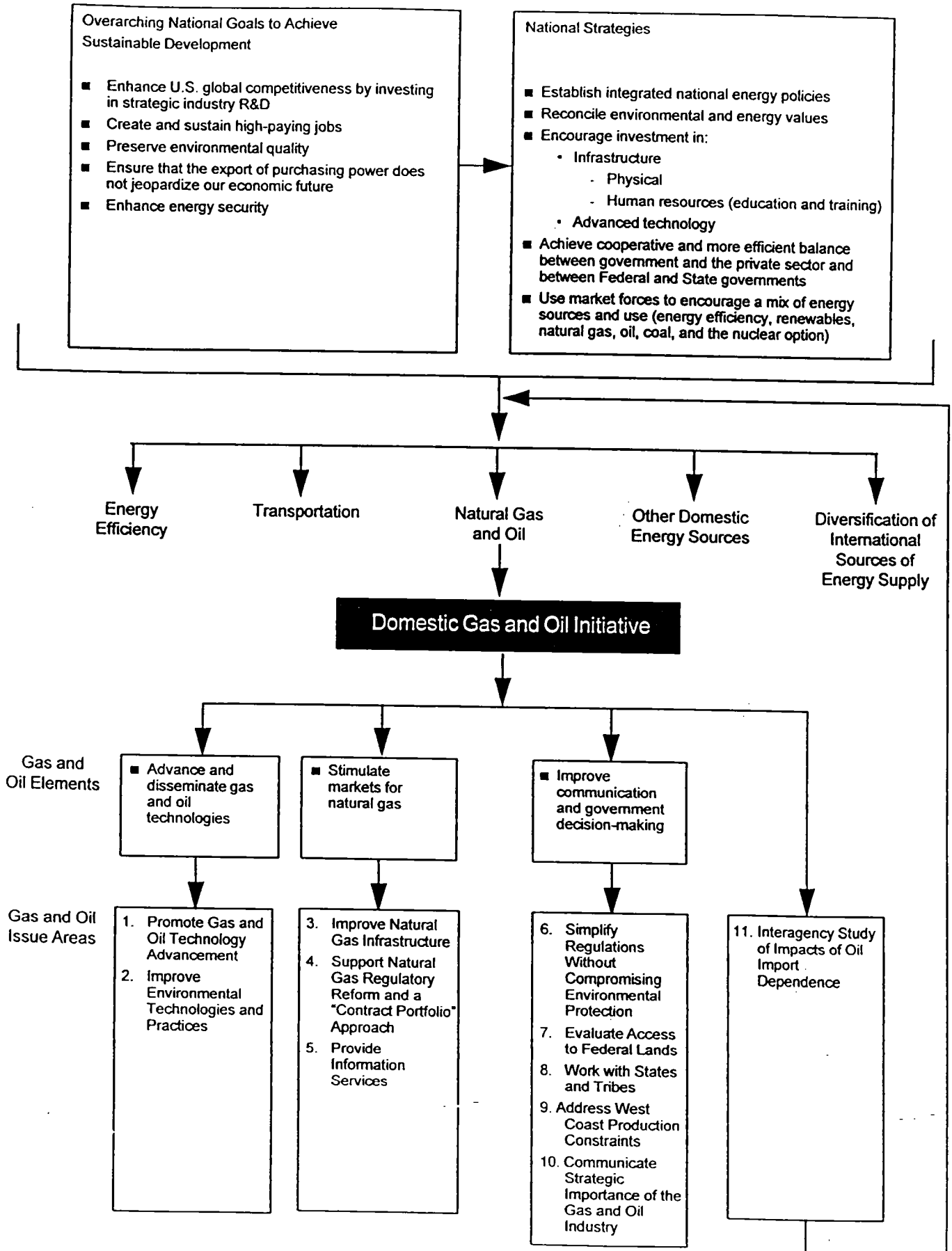
The two key overarching goals of the Initiative are the creation of high-technology jobs and long-term economic opportunity and a reduction of the trend towards high imports. Most of our economic competitors strongly encourage petroleum conservation -- often through imposition of high consumption taxes -- in part to reduce their vulnerability to price shocks and supply interruptions and reduce the transfer of the purchasing power abroad. Americans have preferred to find other strategies to address these problems. As a complement to these efforts, it should be our policy to strengthen exploration and production of domestic gas and oil resources in a cost-effective, pro-competitive manner.

The Initiative was developed by working with stakeholders and various Federal agencies with significant energy responsibilities. Figure 1 summarizes the three major elements of the Initiative:

- (1) to increase domestic gas and oil production and environmental protection through the advancement and dissemination of new exploration and production (E&P) technology;
- (2) to stimulate markets for natural gas; and
- (3) to streamline and improve communication and government decisionmaking.

In addition to these three elements, the Department of Energy will coordinate a broad new study by the National Economic Council and the National Security Council of the impacts and risks of increased petroleum dependence. This study will form the basis for later additional actions found to be warranted under the study.

Domestic Gas and Oil Initiative Roadmap



In assembling the Initiative, the Department has sought to achieve the specific objectives without sacrificing other paramount national interests, such as deficit reduction, economic stimulus and environmental protection. Wherever possible, the tactics and actions under the initiative take advantage of market forces, and also seek to achieve a cooperative and efficient balance between the public and private sectors and between Federal and State governments.

II. THE NEED FOR ACTION

A. The Worldwide and Domestic Importance of Gas and Oil

Natural gas and oil will remain critical elements in every nation for the foreseeable future. In 1990, United States consumers spent over \$300 billion on gas and oil--5.5 percent of GDP.¹ Gas and oil supply 99.9 percent of transportation fuel needs (almost entirely oil); 75 percent of industrial needs;² 61 percent of residential and commercial needs and 13 percent of electric utility needs.³

In the rest of the world, natural gas and oil are equally important, or, in some cases, even more important commodities, than in the United States. Gas and oil consumption represent 61% of total energy consumed worldwide in 1991.⁴ Because of the developing world's enormous appetite for energy, gas and oil are likely to play an ever-increasing economic role. In addition, global warming concerns may cause an even larger shift towards gas, and possibly oil, than might otherwise occur.

By any standard, the domestic gas and oil industry remains an important source of capital formation, technological development, and employment in the American economy. In 1990 the industry invested \$21.0 billion⁵ in infrastructure. The gas and oil industry, including the associated service industries, account for nearly 380,000 American jobs. Though this represents a relatively small fraction of the total U.S. work force, Figure 2 demonstrates that these jobs pay wages 30 percent above those of the average American worker, thus representing the sort of high-skill, high-value jobs America needs.⁶ Identification of hydrocarbon deposits far underground requires much training and application of advanced technologies.

¹Source: Energy Information Administration; The Annual Energy Review 1992. U.S. Department of Energy, Table 3.8, page 85.

²Includes non-utility electric generation, independent power producers, feedstocks and other industry users.

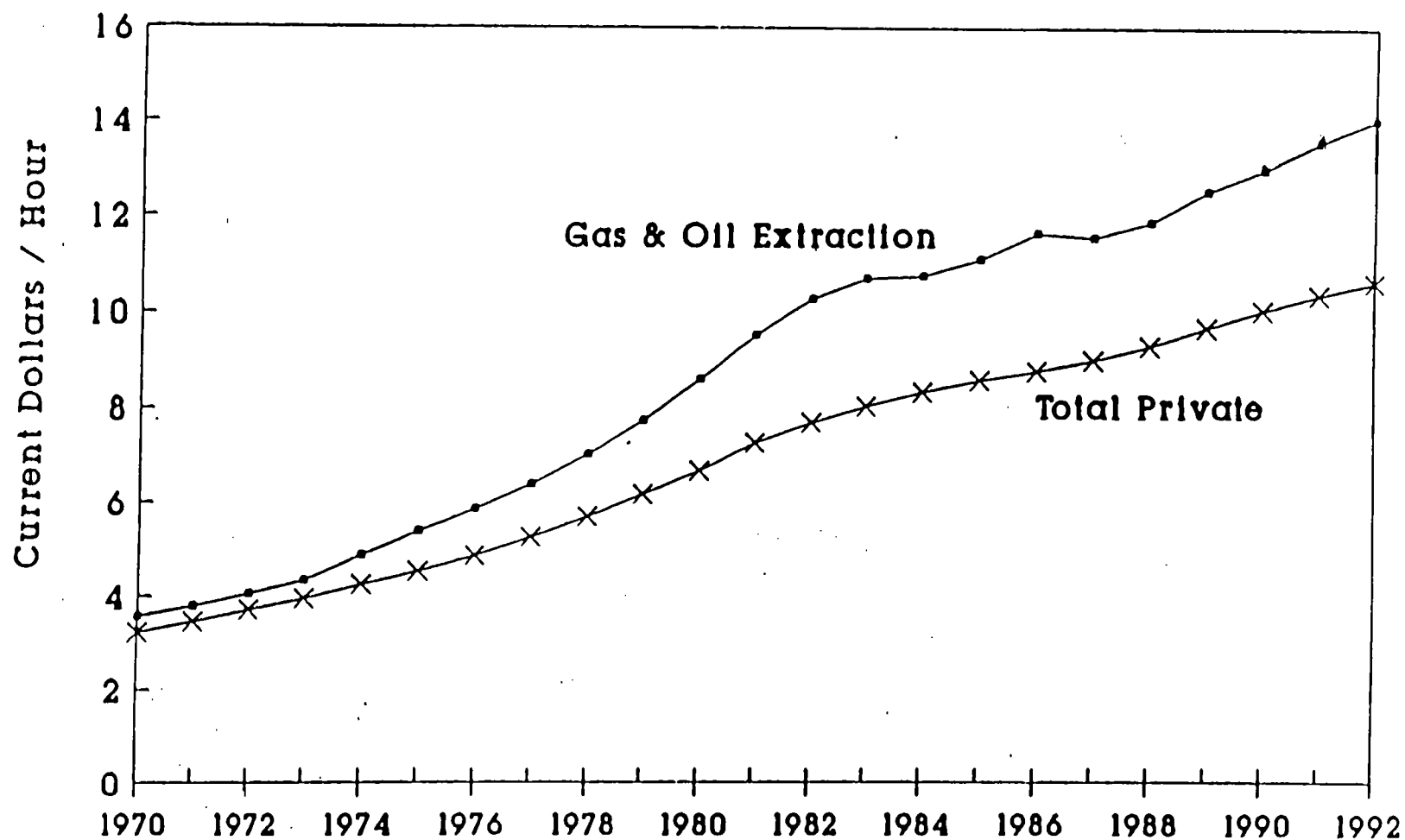
³Source: Energy Information Administration; The Annual Energy Review 1992. U.S. Department of Energy, Table 3.7, p. 83.]

⁴Energy Information Administration, International Energy Annual, 1991, Table ES2, page XVI.

⁵Source: Survey of Oil and Gas Expenditures 1990, American Petroleum Institute, November 1991, Table II, page 2.

⁶Source: Bureau of Labor Statistics, Department of Labor; Current Employment Statistics Survey.

Figure 2. Average Hourly Earnings for
the Gas & Oil Extraction Industry



Source: Energy Information Administration

B. Maintaining Our Lead in Gas and Oil Exploration and Extraction Technologies Will Benefit the Nation

Preserving Gas and Oil Jobs for Long-term Economic Opportunity

The American people have given this Administration the pre-eminent task of redirecting public resources to help create high-wage jobs and a secure economic future for American citizens. The American public and their government increasingly understand that the citizens of this country compete internationally for jobs, for investment, and for economic growth. Success in that competition will depend, in part, on an explicit strategy that emphasizes improvement in American technology and competitiveness.

The U.S. gas and oil industry is in transition. Most major domestic oil companies have shifted their exploration operations abroad. Independent producers play an increasing role in finding and extracting domestic gas and oil. Natural gas is an abundant and underutilized domestic resource which can be substituted for oil and has many environmental and economic benefits. Furthermore, the U.S. has large remaining resources of oil, but they require advanced, relatively high-cost technologies to locate and extract.

It is beyond question that natural gas and petroleum will remain critical materials in the world economy for the foreseeable future. Increasing scarcity anywhere in the world will increase the value of exploration and production skills that reduce the cost, or increase the availability of, natural gas and petroleum.

The gas and oil industry relies upon advanced technology, in which American firms traditionally have led the world. Modern gas and oil exploration and production represent the quintessential "high tech" industry. It is instructive to note that, when oil fires in Kuwait required unique firefighting skills, U.S.-based experts made important contributions to ending this economic and environmental nightmare. However, the number of trained young people in the United States entering the gas and oil business has shrunk to a small fraction of what it used to be.

As in many other industries, worldwide competition in extraction and exploration is fierce and increasing. If domestic producers are to continue to provide a substantial portion of U.S. oil needs, and compete in world oil markets, new and advanced technologies must be developed and widely applied. New technologies will also be vital in developing our abundant domestic natural gas resources to meet the widely-expected increased levels of demand.

In the long run, increased productivity of the American gas and oil industry will create jobs for Americans. First, by keeping U.S. technologies "on the cutting edge," we ensure that they are the technologies of choice worldwide, thereby maintaining and expanding technology export opportunities and export-related jobs. Second, increased productivity can make more of a domestic energy resource economically available, ultimately allowing expanded domestic production and increased employment.

Revolutionary technologies that use state-of-the-art computer mapping of the sub-surface for exploration and production are being developed in the gas and oil industry today. A case in point is known as three dimensional (3-D) seismic surveying. This procedure can provide high-resolution images of subsurface gas and oil deposits, thus enabling more efficient exploration and development. Success using this approach has been documented by many companies. An example is in the Bay Marchand field in Louisiana (See Figure 3). Prior to 3-D utilization, production in this field had declined to 18,700 barrels per day in November 1985. Using 3-D technology, the decline in production was reversed and output more than doubled, rising to 45,200 barrels per day in April 1991. Other case studies suggest that, where new undrilled reservoir prospects lie adjacent to producing fields, the discovery success rate can be improved by as much as 50 percent through use of 3-D technology.

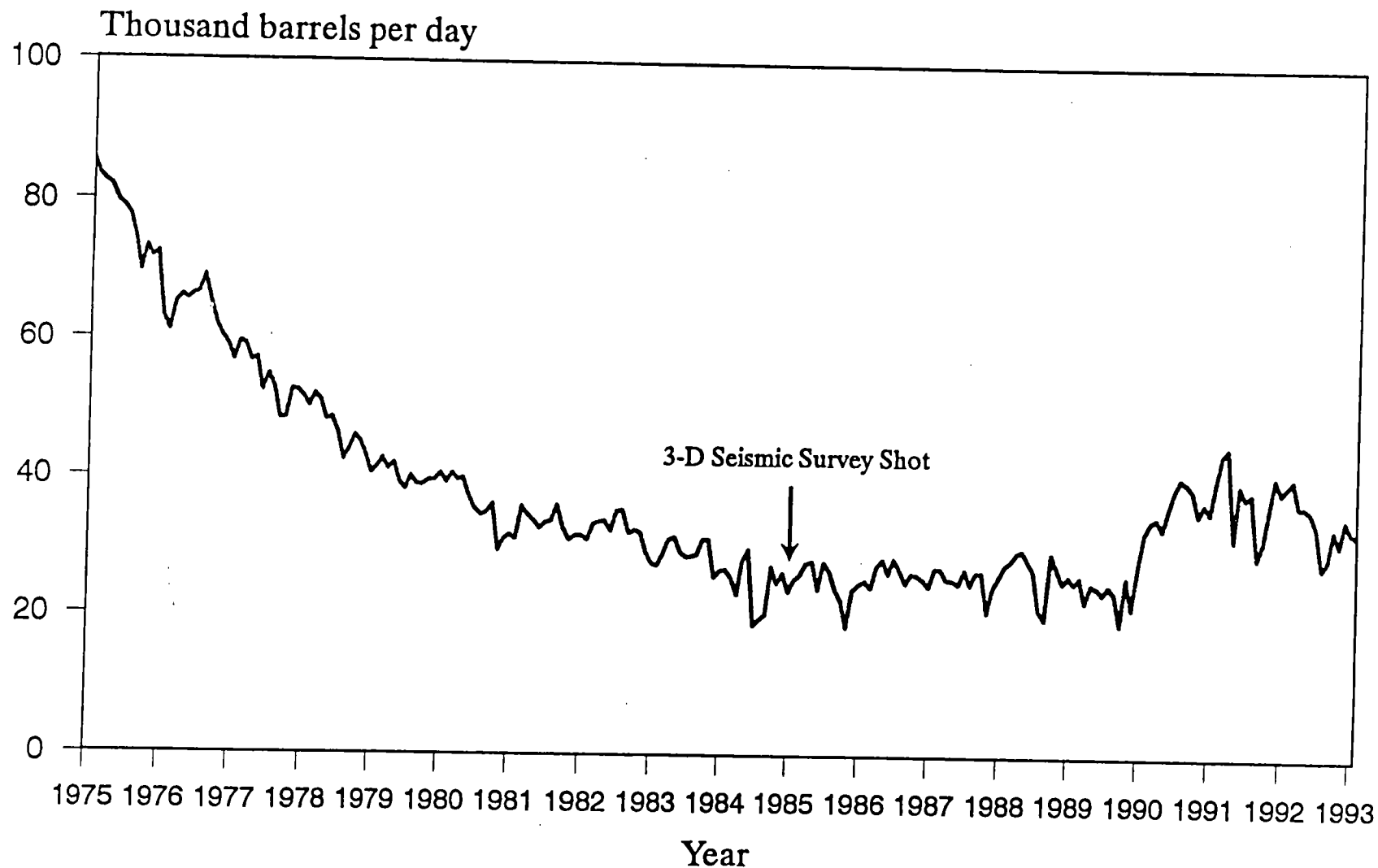
Independent producers, integrated major producers, and the gas and oil service industry believe that these technologies hold great promise for expanding production from our domestic resources. Furthermore, these technologies have great potential for developing gas and oil resources abroad, thus representing a significant export opportunity and allowing a diversification of international supply.

American industrial competitiveness will depend on improvements in productivity and technology equal to or better than that of other nations. The gas and oil industries are poised to research and adopt new methods of exploration and extraction that will allow us to expand our economically recoverable domestic resource base without compromising environmental quality. Increased reliability of subsurface mapping means fewer dry holes and increased reserves. If we develop and deploy these new procedures in a domestically-based industry, the U.S. will lay claim not only to increased energy production, but also technologies that can be marketed to our trading partners abroad. If we fail, the U.S. will likely be purchasing these technologies from other nations who recognized their strategic and economic value and had the courage to act.

Preserving Worldwide Environmental Quality

As we move toward the twenty-first century, our nation must reduce its dependence on fossil fuels, minimize wastes, preserve our water resources, and protect sensitive environments. This Administration will assert world leadership on such issues. The policies that encourage gas and oil exploration and production will be pursued with

Figure 3. Bay Marchand Field
Monthly Average Production History
1975-Early 1993



Source: Dwight's Energydata, Inc. via Energy Information Administration.

these environmental goals in mind and with the understanding that energy and environmental objectives are compatible. In doing so, the U.S. will be setting a standard for environmental sensitivity in the gas and oil industries that will demonstrate leadership and serve as a basis for environmental standards in other parts of the world.

III. THE DOMESTIC GAS AND OIL INITIATIVE

As mentioned in the introduction, the Domestic Gas and Oil Initiative has three principle elements:

1. Increase gas and oil production and environmental protection through the advancement and dissemination of technology;
2. Stimulate markets for natural gas; and
3. Improve communication and government decisionmaking.

In the remainder of this section, each of these elements are discussed and described. An implementation plan, making use of stakeholder and other agency comments to date, is currently being developed to address these elements.

Element 1. Advancement and Dissemination of Gas and Oil Technologies

Advanced computing technologies are revolutionizing the search for gas and oil. In some areas, for example, advanced computing technologies have allowed for the direct detection of natural gas through the analysis of seismic data.

American national defense labs--specifically Los Alamos, Sandia, and Livermore--historically have created the demands which spurred the development of cutting-edge computer technologies. American taxpayers have invested many billions of dollars in applying the scientific capability of the National Laboratories to the development of world-class modeling capabilities. National Laboratory scientists and facilities can and do model complex subsurface conditions for both underground nuclear testing and some current gas and oil projects.

The gas and oil industry is poised to realize enormous benefits from the advanced exploration and production techniques. To take maximum advantage of these opportunities, the Administration proposes an industry driven Advanced Computational Technology Initiative to enhance joint government/industry/university research, development, and deployment efforts on advanced computing problems related to exploration and production. These efforts will build on the longstanding leadership of the United States in developing and marketing new computer technologies and applications, and will help to maintain a strong U.S. position in this critical, high-wage field. These efforts will be expanded in FY-95 to a total federal commitment of \$50 million, in addition to substantial funds from private enterprises.

To meet this objective, the DOE shall expand its oil R&D program to increase advanced oil recovery capabilities and reduce the rate of reservoir abandonment. This

will be accomplished through accelerating field demonstrations; conducting in-depth evaluations of selected past and ongoing industry projects to pinpoint important unsolved problems; disseminating more complete information on technology developments; conducting field-based reservoir characterization and innovative recovery process experiments; and expanding supporting research to address industry-identified needs.

Domestic gas and oil producers face increasing costs of compliance with environmental regulations. To help reduce the costs of meeting environmental objectives, the DOE, with the assistance of the Environmental Protection Agency, the Office of Environmental Policy, the Office of Science and Technology Policy and the Department of the Interior, will establish an industry-focused environmental research advisory board. The express purpose of the Board will be to advise the government on energy related R&D issues. The Initiative will also create an environmental technology demonstration and technical assistance program and develop specific studies and demonstrations, such as an examination of the feasibility of significantly increasing the amount of lubricating oil that is recycled in the United States and exploring the Federal role in oil spill clean-up R&D.

Domestic Policy should be included on this board

The Administration also proposes to stimulate development of a nationwide technology transfer network and assistance program. Technology transfer efforts will be especially important in encouraging the 8,000 independent operators in the U.S. to adopt innovative exploration and production methods. Historically, these operators have led the exploration of our domestic resource base. Two-thirds of these independents have fewer than 20 employees and cannot individually finance large, long-term R&D programs.⁷ Smaller independents have expressed strong interest in organizing themselves to better disseminate technology.

Due to the increased upfront costs associated with new technologies such as advanced computing, some independents have formed associations that reduce the costs of gaining access to new technologies. By familiarizing individual firms and these associations with new technologies developed by both industry and government, technology transfer efforts can make a critical contribution to increasing domestic production and sustaining the viability of the domestic industry.

Finally, and in conjunction, the Department of the Treasury and the Department of Energy are examining legislation that would permit domestic companies that employ certain advanced E&P techniques to expense rather than amortize their geological and geophysical outlays.

⁷Source: Department, of Commerce, Bureau of the Census, 1987 Census of Mineral Industries, MIC 87-1-13A, Table 1, page 13A-5.

By encouraging the use of the most advanced technologies for gas and oil production and environmental compliance, the proposed Initiative will bolster technical progress, create high-wage employment for United States citizens, and reduce the transfer of American purchasing power abroad. Thus, advanced gas and oil extraction technologies represent a natural part of the Administration's technology strategy.⁸ Ultimately, investments in technology represent investments in people. Only superior skills of American workers will keep the domestic gas and oil industry at the forefront of international competition for advanced seismic exploration services..

Element 2. Stimulate Markets for Natural Gas

As the President has stated, the substitution of domestically-produced natural gas for energy purchased in the form of imported oil provides unqualified benefits to the nation. Substitution of domestic gas for imported oil helps the environment and helps keep jobs at home.

The remaining resource base for natural gas appears to be more abundant and cost-effective to tap than the remaining resource base for domestic oil. Independent studies indicate that the size of the gas resource base promises the availability of natural gas for several decades without opening up new exploration provinces (Table 1). Figure 4 indicates that since 1987, gas and oil exploratory drilling yields have nearly doubled. Most of this increase in productivity represents the discovery of new gas reserves.⁹

The Federal Energy Regulatory Commission (FERC) has taken a number of dramatic actions intended to improve competition and service in the natural gas industry. These actions shall continue. The Administration recognizes the valuable contribution these efforts have made to expanding and improving natural gas markets. We also recognize the need to carefully target new policies in order not to jeopardize the progress made to date.

Our discussions with other agencies and the FERC have demonstrated that there is scope for additional activity that will complement and support the FERC's efforts. To insure that the targeted efforts under this element work in concert with the FERC's activities, the Department of Energy and the FERC will establish an interagency working group that will meet on an ongoing basis to coordinate policy development and implementation. These meetings will be conducted so that infringement on either

⁸President Clinton and Vice-President Gore, "Technology for America's Economic Growth: A New Direction to Build Economic Strength", February 22, 1993.

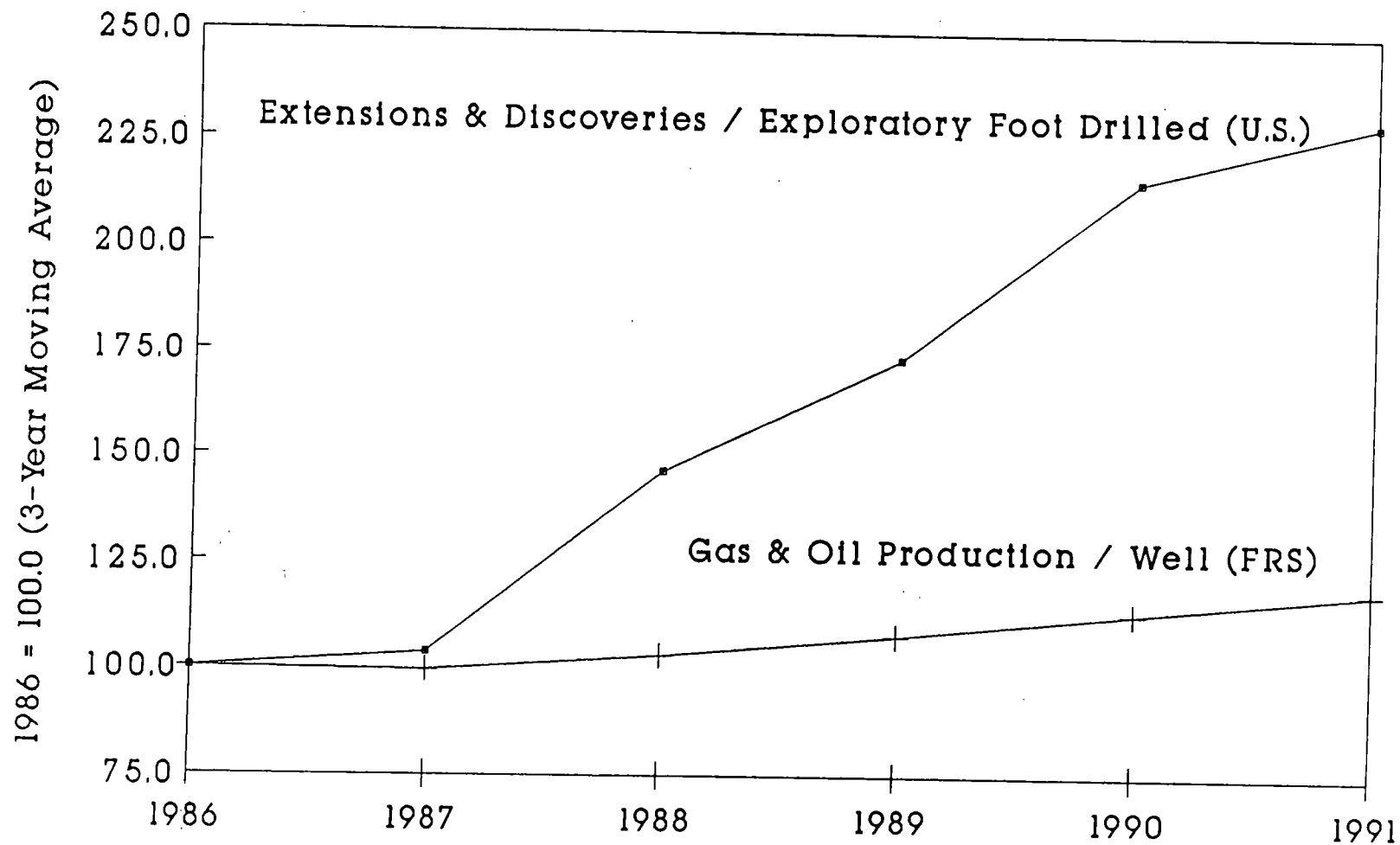
⁹Energy Information Administration; U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 1991, Figures 10 and 11, page 18..

Table 1. Recoverable Resources in the Lower-48 States
Comparison to Other Estimates
(Trillion Cubic Feet)

	National Petroleum Council 1992	Potential Gas Committee 1990	Gas Research Institute 1992	Energy Information Administration
Proved Reserves	160	160	160	160
Conventional Resources				
Reserve Appreciation	203	170	150	265
New Fields	413	491	394	327
Total Conventional Resources	616	661	554	592
Nonconventional Resources				
Coalbed Methane	98	88	110	90
Shales	57	--	123	30
Tight Gas	349	--	238	383
Other	15	--	32	--
Total Nonconventional Resources	519	88	503	503
Total Assessed Resource	1,295	749	1,047	1,095
Total Resource	1,295	909	1,207	1,255
Adjust to 1/1/81	--	--	--	35
Total Adjusted Resource	1,295	909	1,207	1,220

Source: National Petroleum Council, The Potential for Natural Gas in the United States, December 1992, Volume II
- Source and Supply, page 37.

Figure 4. Indexes of Gas & Oil Productivity



Source: Energy Information Administration

the FERC's, or the Department's rights and responsibilities under the law will not occur.

In addition to these Federal regulatory reform initiatives, the Administration is pursuing two coordinated efforts whose net effect will, we believe, accelerate the use of natural gas in transportation markets: (1) The Federal Fleet Conversion Task Force, a program designed to convert public and private fleets to alternative fuels, including natural gas, over the next few years and to coordinate efforts leading to alternative fuel refueling infrastructure development; and (2) The Clean Cities Program, an effort to coordinate state and local public and private alternative fuel vehicle market development. Efforts such as these will have a major impact on reducing imports, creating jobs and opening new markets for alternative motor vehicle fuels.

Improving The Natural Gas Deliverability Infrastructure

Efficient delivery of natural gas from the wellhead to the burner tip is dependent on a well-functioning physical infrastructure for gathering, transporting, storing, and distributing gas, and on an accurate and timely information infrastructure for monitoring natural gas supply and demand.

To help improve the physical infrastructure, the Administration will work with the FERC to remove barriers to environmentally sound construction of additional pipeline and storage facilities; increase access to existing facilities; and accelerate the development and use of advanced technologies in natural gas storage and distribution.

The Administration will also support the industry's efforts to improve real-time capabilities for monitoring and modeling natural gas availability and flows, and to match gas storage to end-user requirements. Such efforts will be especially important in enabling greater use of natural gas in electric power generation.

One topic ripe for discussion between the Department of Energy, the FERC, Congress, and interested stakeholders is gas pipeline construction permitting and regulation. Discussions of this topic in the Department of Energy/FERC working group will also include the Departments of Agriculture and Interior as well as other key stakeholders.

Supporting Natural Gas Regulatory Reform and New Contracting and Hedging Mechanisms

Federal and State regulators should continue to promote a competitive industry structure. As noted above, changes under way in the private sector and industry restructuring prompted by the work of the FERC are already reducing the costs of information and transactions in natural gas markets.

At the State level, changes in regulations governing the distribution of natural gas and electricity can also lead to improved efficiency in energy use. DOE supports State efforts to revise electricity, gas, environmental, and energy conservation pricing policies and regulations that will help to clarify the true economic costs and lead to greater economic value and a cleaner environment. Recognizing the States' jurisdictional authority in this area, we seek a cooperative effort between State utility regulators and energy offices and DOE to help foster regulatory reforms that will: (1) improve access to gas distribution facilities; (2) encourage efficient pricing for electricity and gas; (3) encourage the removal of fuel-specific subsidies that work against energy efficiency goals; (4) encourage cost-cutting by distributors; and (5) boost the use of natural gas transportation.

One of the most important topics for this State-Federal dialogue involves the use of an expanded portfolio of contracts for natural gas distribution companies and end users. New types of contracts and financial instruments can lead to improved gas availability and market performance, but only if all parties understand and utilize these new tools. DOE will expand its fact-based educational activities in these areas without attempting to prescribe specific state or customer contracting policies.

Providing Information services

To facilitate all elements of this Initiative, and as a final implementation measure aimed at this objective, the Department will improve its ability to develop, collect, and disseminate information on natural gas deliverability and storage. To complement the proposed initiatives to improve natural gas deliverability and encourage regulatory reform, the DOE will enhance the capability of the Energy Information Administration (EIA) to collect these data, and will develop an Energy and Resources Mapping and Information System. EIA will work with other agencies and the private sector to provide a coordinating function and to avoid duplication while executing this task.

Element 3: Improve Communication and Government Decisionmaking, Including Issues of Access to Public Lands, and Investments in Environmental Improvements

The Report of the National Performance Review issues a challenge to Federal agencies to find new ways of problem-solving that emphasize collaboration, empowerment, and greater efficiency. The National Performance Review calls on Federal and State agencies to eliminate "regulatory overkill" and work together with greater coordination and flexibility.

This component of the Initiative contains seven specific action areas created in the spirit of these Administration priorities. The seven action areas are:

- (1) The Department of Energy should improve the level of public awareness of the strategic role of the gas and oil industry;
- (2) Various federal regulatory agencies and departments should streamline and simplify multi-jurisdictional, multi-layer, and overly complex regulatory processes, with no compromise in regulatory protection of the environment and the public interest ("eliminating regulatory overkill," in the words of the National Performance Review);
- (3) The Department of the Interior and the Department of Energy shall initiate new policies to generate greater leasing interest in mature areas of the Western and Central Gulf;
- (4) The Department of the Interior is initiating a regional process for examining Outer Continental Shelf (OCS) policy in certain frontier areas (the Arctic National Wildlife Refuge is not included). That process should include representation by the Department of Energy, the Environmental Protection Agency, and state and regional representatives of all significant stakeholders;
- (5) Various agencies and departments should work more closely and cooperatively with States and Tribes on gas and oil supply issues;
- (6) The Department of Energy shall examine the costs and benefits of removing constraints on West Coast gas and oil production; and
- (7) The Department of Energy shall work with Congress, the Bureau of Land Management, and the Office of Management and Budget to prepare and implement a plan for production of the Naval Oil Shale Reserves.

Better Understanding and Communication of the Strategic Value of the Gas and Oil Industry to the Nation

Public perceptions of the gas and oil industry have not kept pace with its changes during the last decade in which the industry has been devastated by recession. Further, the gas and oil industry has evolved into a business of high-tech, skilled, and educated professionals and is a far cry from the rough-and-tumble image formed many years ago. The government will play a role in increasing awareness of the strategic importance of this industry in the United States economy through public information programs and outreach activities.

To help increase the public's awareness of the strategic role of the gas and oil industry, the Department of Energy will conduct a joint study with the Department of Labor on the maturing of the work force in the domestic industry, and the relatively few young people entering the industry from college or graduate school. Educated young people are the life blood of any business. Universities responsible for the education of young petroleum engineers, geologists, geophysicists, landmen, and chemical engineers oriented to refining have sharply cut back their programs for lack of interest. This trend cannot continue for decades if we are to maintain a viable domestic industry. The Department of Energy and Department of Labor should use the resources of the National Petroleum Council to study this problem, and possible long-term remedies including scholarships and work force planning strategies.

"Eliminating Regulatory Overkill"

As in other industries, gas and oil producers have become subject to a vast number of overlapping, media-specific State and Federal environmental rules. As the Vice-President noted in the recent National Performance Review, these rules are usually created with the best of intentions. As the Vice-President further notes, it is time to "put aside our reverence for those good intentions" and focus on implementing regulatory protection with greater flexibility and efficiency.

Fortunately, a wealth of new regulatory solutions and processes are under development across the United States and around the world. Market-based and multi-media pollution control solutions are under development and in some cases a matter of law; Federal and State agencies are making increasing use of regulatory negotiations and formal collaborative processes; and agencies such as the Federal Energy Regulatory Commission are searching for self-enforcing, market-based processes that eliminate or reduce the need for formal hearings.

Encouraging progress has been made in this area in gas and oil production, as well as refining, but much more can be done. At Atlantic Richfield Corporation's Dauphin Island site in the Gulf of Mexico, early communication with State and local governments and the fishing community avoided unnecessary project delays and resulted in an environmentally superior and economically viable drilling project. In Pennsylvania, a collaborative process has been used to establish general permits for stripper oil and marginal gas wells. At the Yorktown refinery in Virginia, the cooperation of Amoco and the Environmental Protection Agency led to unprecedented new information concerning the structure, effects, and compliance strategies associated with environmental rules.

These efforts suggest great promise, but more action is needed. To accelerate progress, we will:

- Work cooperatively with States through organizations such as the Interstate Oil and Gas Compact Commission and the National Association of Regulatory Utility Commissioners to promote the streamlining and integration of State and Federal regulatory programs. The purpose of these concerted efforts will be to seek out and eliminate duplication in Federal and State regulatory programs, whether in the form of needless paperwork or duplicate permits or hearings. Wherever possible, one-stop permitting and market-based mechanisms will be encouraged.
- Enhance the capability of State and Federal governments to make better policy decisions through the establishment and promotion of improved tradeoffs. This enhancement is designed to dovetail with the streamlined interagency regulatory review process the Administration is proposing, which also seeks to minimize interagency rule conflicts and incorporate tradeoffs between regulatory impacts.
- Demonstrate the feasibility of alternative approaches to environmental regulation that more accurately balance costs and benefits, promote rather than stifle technological innovation, and allow for compliance flexibility.
- Promote dialogue and build partnerships of industry groups, States, the public, and other interested parties dedicated to resolving disputes and balancing the energy, economic, and environmental objectives necessary for sustainable development.
- Establish a joint Department of Energy and Environmental Protection Agency working group to review the National Petroleum Council report on the future of U.S. petroleum refining. The working group will develop a strategy for maintaining a more viable domestic petroleum refining industry, including the examination of the feasibility of innovative, cost-effective approaches to an "environmentally invisible" refining industry.

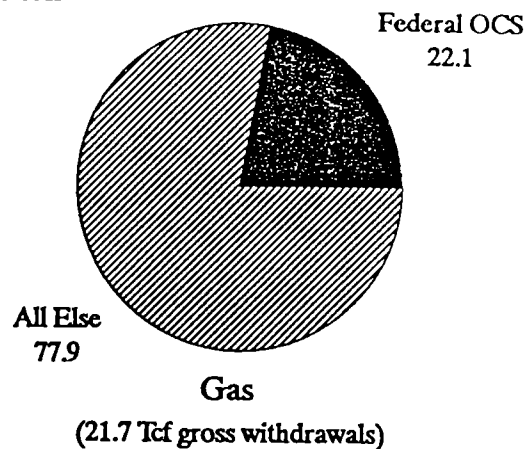
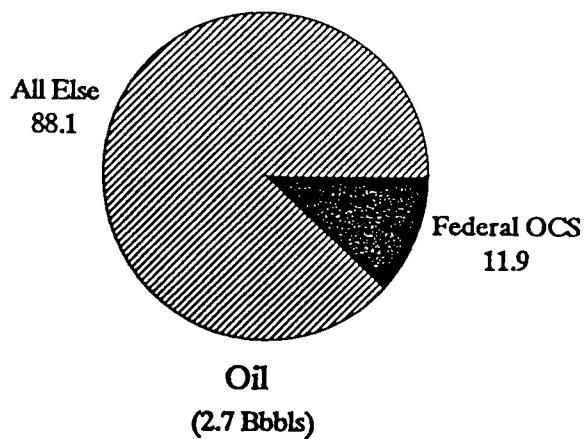
Re-Examine Access to Federal Lands

The Nation's public lands are one of its most precious resources, and it is entirely appropriate to safeguard and preserve these lands for future generations. However, with advanced technologies and careful extraction practices, it is no longer the case that our stewardship obligations are inconsistent with the extraction of subsurface resources.

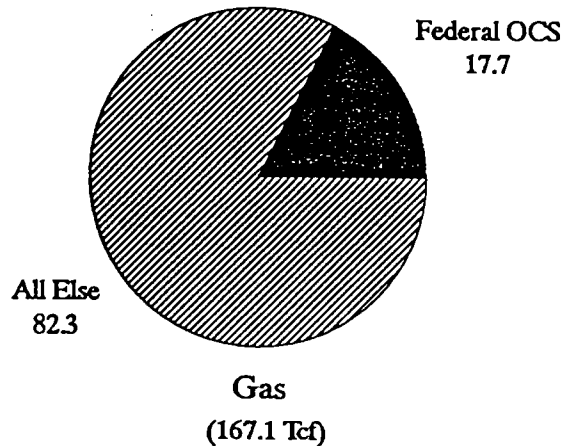
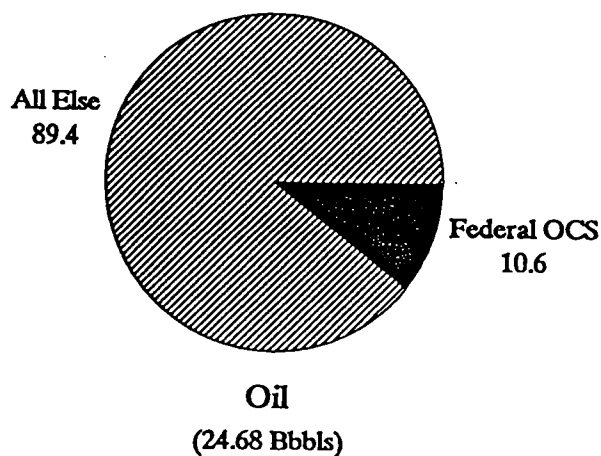
Figure 5 shows the substantial percentage of gas and oil resources that underlie Federal lands and waters. Federal lands comprise some 727 million acres of property

Figure 5. Federal Waters and Lands
(Percent of U. S. Total)

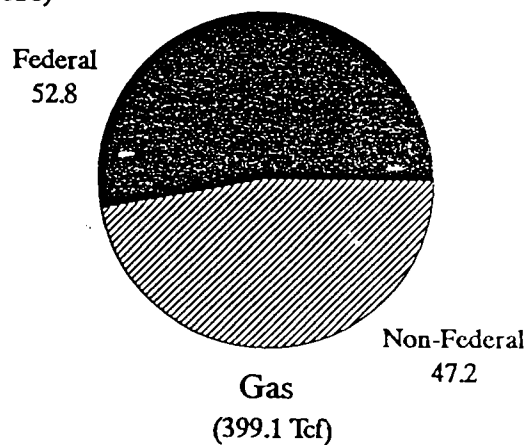
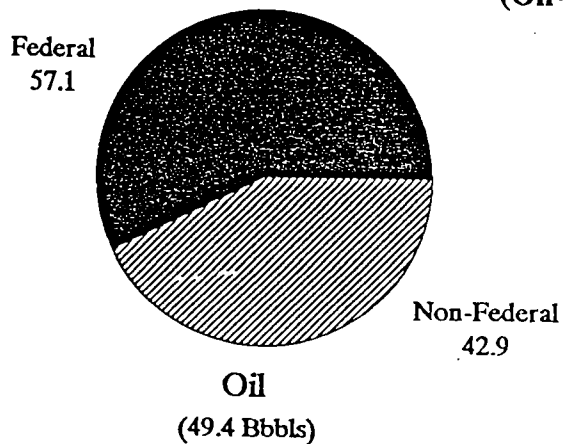
1991 Federal OCS Production



1991 Federal OCS Proved Reserves



Undiscovered Recoverable Oil and Gas Resources
(On- and Offshore)



onshore, nearly one-third the entire land area of the United States.¹⁰ The Outer Continental Shelf (OCS) also contains a vast resource of gas and oil restricted from development for economic reasons or they are under executive and legislative moratoria.

With regard to the western and central Gulf of Mexico, incentives such as lower royalties should be considered to spur interest in tracts which are likely to contain reserves but have previously generated little interest. In addition, incentives should be considered for tracts which present difficult challenges for production in mature areas such as sub-salt deposits.

Access to frontier areas should be considered on a regional basis. The Department of Energy has joined with the Department of the Interior, and the Department of Agriculture Forest Service in establishing a Federal Lands Energy Coordinating Groups. The express purpose of these Coordinating Groups will be to ensure that national energy strategies are appropriately considered in leasing decisions related to Federal lands. DOE will participate with the Department of Interior in working groups to consider the technical and scientific issues involved in making decisions about access to these areas. A description of the scope of this process will be developed in a Memorandum of Understanding between the Departments. This Coordinating Group shall ensure energy and environmental inputs in the review of the prior Administration's Five-Year Leasing Plan. That review should be completed by October 1, 1994.

The U.S. leads the world in the development of environmentally effective technologies for exploration and development of gas and oil in frontier areas. We should retain this leadership not only for ourselves, but for the planet we share. This base of knowledge contributes to the tools available internationally for environmentally responsible gas and oil development, as other nations push offshore and into the Arctic.

Collaboration with States and Tribes

The States bear a primary responsibility for regulating the gas and oil industry in the areas of resource conservation, environmental protection, and the use of natural gas. Ongoing federal interactions with State organizations, such as the Interstate Oil and Gas Compact Commission, the Ground Water Protection Council, the Energy Council, the National Governors' Association, the National Association of State Energy Offices and the National Association of Regulatory Utility Commissioners should be

¹⁰Estimates of Undiscovered Conventional Resources of Oil and Gas for Federal Lands, and for Indian and Native Lands of the Continental United States, G. L. Dolton, R. F. Mast, R. A. Crovelli, U.S. Geological Survey Open-File Report 90-705, 1990. Table 2, page 10-12.

strengthened. The Federal government will work cooperatively with individual States to identify and resolve key issues constraining gas and oil supply at the State and regional levels.

As part of this Initiative, the Department will also forge new partnerships with Tribes to increase domestic gas and oil production on tribal lands. These partnerships will strive to recognize the importance of economic development, environmental preservation, and cultural sensitivity to tribal affairs.

Addressing West Coast Production Constraints

Crude oil production from the Alaskan North Slope (ANS) is likely to decline, leaving the West Coast once again a significant importer before the year 2000. To address this problem the Administration proposes removing many of the barriers that inhibit development of California resources by:

- Encouraging oil pipeline access for non-integrated producers in California. Most, if not all, of these large pipelines should operate as common carriers by virtue of their settlements in long-standing lawsuits, or their use of rights-of-way granted under the Mineral Leasing Act. Free and open access to transportation assets in the State will help to increase production.
- Working with California stakeholders to develop strategies to permit California refineries to process greater proportions of heavy indigenous crudes. The marginal barrel of oil produced in California today is a heavy crude that requires extensive refinery processing to satisfy the State's high demand for light, low-sulfur transportation fuels. Declining Alaska North Slope supply will make room in refinery "upgrading" units that can process California heavy crude oil.

Prepare and Implement a Plan For Production of the Naval Oil Shale Reserves

The Naval Oil Shale Reserves represent a significant natural gas resources that is currently unavailable for production. The Department of Energy will characterize the production potential of the Reserves and conduct sufficient economic analysis to prepare and implement a plan to develop these government owned lands in an environmentally responsible manner that will maximize revenues to the Treasury.

This plan will use the considerable work that has already been done by the Department of Energy, the Bureau of Land Management, the Office of Management and Budget, and Congress. An aggressive timetable will be set for quick implementation of the plan.

IV. New Interagency Study of the Impacts of Oil Import Dependence

As we pass the twentieth anniversary of the OPEC embargo, which staggered world financial markets, destabilized economic growth, and led to the notorious "gas lines," the U.S. remains vulnerable to the disruption of its oil supply. Today, the developed world is just as dependent on open access to the Persian Gulf, the locus of most of the world's known oil reserves, as it was two decades ago.

It is also the case that much has changed during the past twenty years, with uncertain implications for our domestic gas and oil industries. While the world hopes that the Mideast has entered a new era of peace and stability, many threats to regional stability still exist. The Former Soviet Union is slowly opening its doors to gas and oil exploration, but the resource base and production timetable are highly uncertain. Global environmental concerns and constraints are much higher, and more prevalent, than they were 20 years ago. And as always, energy efficiency and new technologies must be posed against the reality of an unevenly distributed and ultimately declining hydrocarbon reserve base.

During the past twenty years, oil imports have accounted for an enormous portion of our trade deficit. Since 1986, oil imports have risen by more than 25 percent, and the Energy Information Administration projects that we will cross the 50 percent net import threshold in 1995 or 1996.¹¹ This trend is shown in Figure 6. In 1992, petroleum provided 41 percent of the energy consumed in the United States and the nation imported 41 percent of its net petroleum supply.¹² The U.S. Office of Technology Assessment has estimated that U.S. imports could rise to levels as high as 70 percent by the year 2000.¹³

Our huge expenditures on oil imports are a major part of our negative balance of trade. Between 1980 and 1992, the U.S. paid to other countries \$742 billion (1987 dollars) to purchase imported crude oil and petroleum products.¹⁴ The potential effect of these imports is to transfer American wealth abroad at a time when public and private investment needs in the U.S. are substantial and growing. Savings from

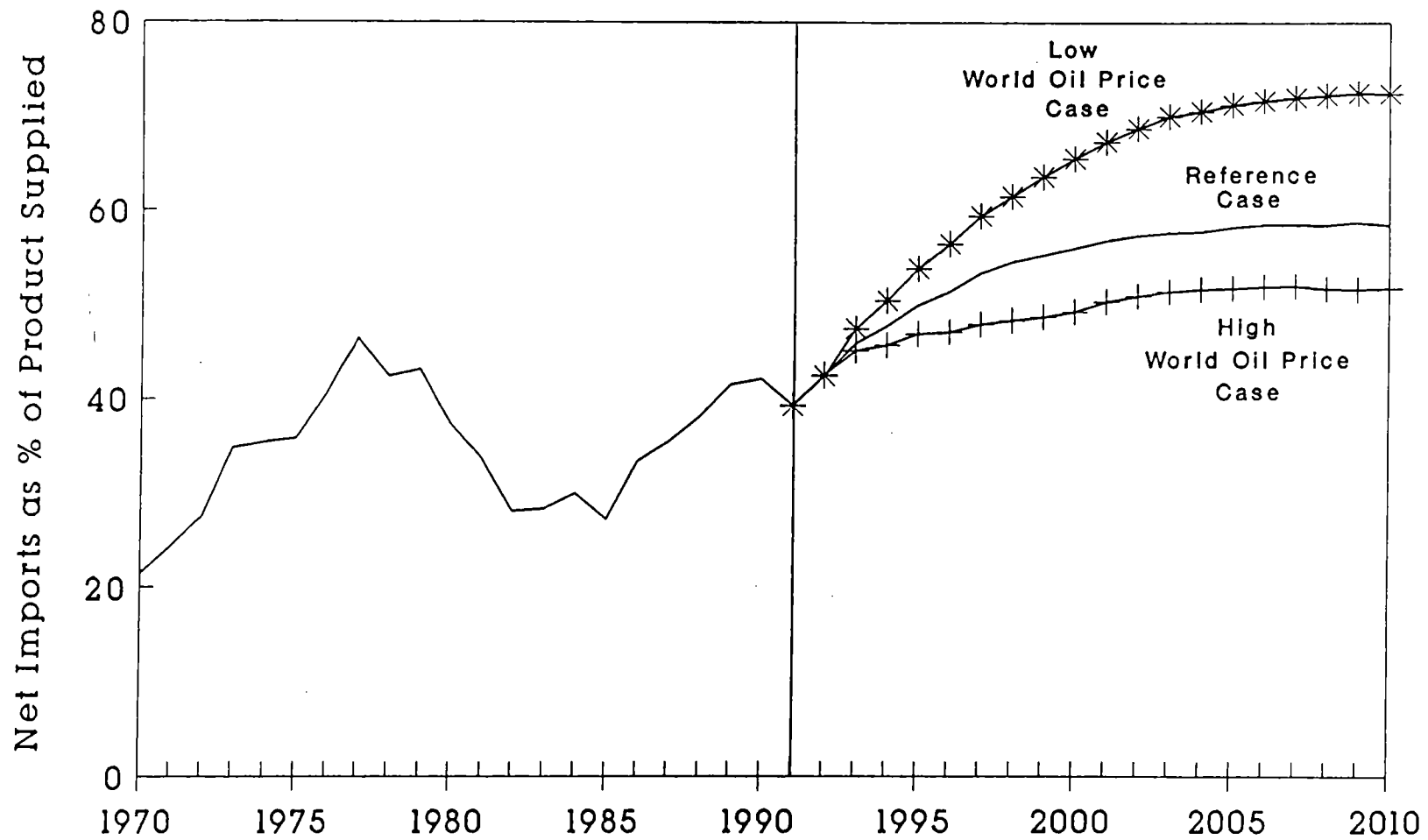
¹¹ Energy Information Administration: Annual Energy Outlook 1993, Table A1, page 81.

¹² Energy Information Administration; Annual Energy Review 1992, Table 1.3 and Table 5.1.

¹³ United States Congress, Office of Technology Assessment. U.S. Oil Import Vulnerability. October 1991, page 3.

¹⁴ Energy Information Administration; Annual Energy Review 1992, Table 3.3, p. 75.

Figure 6. U.S. Dependence on Petroleum
Net Imports



Source: Energy Information Administration

energy efficiency and the cost-effective substitution of domestic supply for oil imports represent a prospective fiscal stimulus and an investment in our future.

This Administration recognizes the substantial costs of imported oil to this country and the need to insure that such costs do not increase. We recognize, too, that there are also benefits to the nation from trade and reduced oil prices. In addition to attempting to better quantify and characterize these costs, and benefits, coordination of activities under this initiative with other policies influencing national energy supply and demand are needed to more effectively diminish the current trend toward increased U.S. energy dependency.

In the past, the federal government has too often ignored potential economic and geopolitical risks until they became certainties. In view of our rising import dependence as well as the many facets of economic and political change, it is essential that the nation conduct a broad, long-term re-examination of the full range of global gas and oil market risks and vulnerabilities the U.S. faces over the next twenty years.

As a result, the DOE will lead an interagency committee, coordinated by the NEC and NSC, to assess the economic, security, and environmental implications of rising U.S. oil import dependence. The assessment should define and characterize the short and long-term economic impacts associated with greater oil import dependence by the United States (including the contribution of oil imports to the loss of jobs and the nation's trade deficit). The assessment will also identify and evaluate the impacts of opportunities for the diversification of oil supply.

V. SUMMARY AND CONCLUSION

During his campaign, President Clinton stated that "a primary goal of the Clinton/Gore National Energy Policy will be reducing the amount of foreign oil consumed in America." The achievement of this ambitious goal will require a coordinated strategy that ranges far beyond policies primarily directed at gas and oil supplies. We must continue to improve our energy efficiency, increase our use of renewable energy resources, increase the use of alternative fuels for transportation, diversify our international sources of supply, and develop new methods of production that promise to reduce costs, pollution and energy use simultaneously.

This coordinated strategy, in turn, must reconcile conflicts between the need for energy supply and environmental preservation. Confrontation predicated on the erroneous belief that these two goals are incompatible has led to much delay, litigation, and frustration, and has threatened to lock up valuable resources that could benefit the nation. While the nation must protect the environmental heritage we hand down to future generations, these values can and must become compatible with careful resource development.

Of equal importance, it is time to acknowledge the fact that the exploration and extraction of fuels is an economically strategic industry. American competitiveness depends on the skills and productivity of American workers. We cannot maintain our present technological and skill-base edge in the international energy markets without a viable domestic gas and oil industry in which to train and deploy workers. Similarly, we cannot increase our technological edge, nor exercise world environmental leadership, if we no longer invest in R&D and produce domestic energy resources in an environmentally sound manner. To safeguard our security, improve our technology and skill base, and exercise environmental leadership, domestic gas and oil supplies must remain a part of this fabric and a full-fledged contributor to the nation's economic future.

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Department of Energy

Washington, DC 20585
September 3, 1993

MEMORANDUM FOR BRIAN BURK ~~←~~

BILL BURTON
MARK CHUPKA
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HEATHER ROSS
SUE TIERNEY

FROM: KYLE SIMPSON 
Executive Assistant to the Deputy
Secretary

SUBJECT: Domestic Gas and Oil Initiatives

In preparation for the Interagency Deputies meeting to be held September 9 (copy of invitation attached) to discuss the Department of Energy's Domestic Gas and Oil Initiative, the attached draft document has been prepared. Before we make a broad distribution of this document, we wanted your comments and insight. I realize that time is short, but we consider your input to be critical.

We plan to distribute a draft document incorporating your comments prior to the Deputies Meeting on September 9. Therefore, I must ask you to have your comments to me before noon on September 7.

If you need any additional information, please call me at (202) 586-5500.

Attachments

cc: Secretary O'Leary
Bill White
Rich Rosenzweig

It is my pleasure to invite you to participate in an Interagency Deputies meeting to discuss the Department of Energy Domestic Gas and Oil Initiative. The meeting will be held on September 9, 1993, from 9:00-11:00 a.m. in the Program Review Center, Room 8E-069 at the U.S. Department of Energy, Forrestal Building, 1000 Independence Ave., SW, Washington, D.C. A list of the Federal officials who have been invited to attend the meeting is enclosed for your information.

The purpose of this meeting is to brief you on the Department's Gas and Oil Initiative. The goal of this Initiative will be to develop new and expanded opportunities for jobs in our domestic gas and oil industries, to increase production from domestic resource bases in an environmentally responsible manner, and to reduce our reliance on imported oil.

Prior to September 9, my staff will provide you with a summary of the policy proposals we are currently considering for this Initiative. This will give you an overview of the progress we have made thus far in the development of this Initiative. We are also tentatively scheduling a follow-up meeting on September 20, 1993, from 2:00-4:00 p.m. to resolve any outstanding issues raised at the September 9th meeting.

If you need any additional information, please have your staff contact Melissa Tell at (202) 586-1596.

Sincerely,

A handwritten signature in black ink that reads "Bill White". The signature is written in a cursive, flowing style.

Bill White

Enclosure

FINAL Figures

To Be

Apart of the Text.

DOMESTIC GAS AND OIL INITIATIVE

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DOMESTIC GAS AND OIL INITIATIVE

I. Energy Policy and American Economic Strategy

Introduction

On April 26, 1993, Secretary Hazel R. O'Leary announced a *Domestic Gas and Oil Initiative*. The purpose of this Initiative is to develop a coherent approach for increasing production of domestic gas and oil resources while preserving the environment. Key objectives include creating jobs in the domestic gas and oil industry and reducing reliance on foreign oil. The initiative was developed by working with stakeholders and Federal agencies.

This initiative focuses on gas and oil. Other efforts are underway to examine energy efficiency, transportation and renewable and other domestic energy sources, as well as the diversification of international energy supply sources. The Domestic Gas and Oil Initiative has four key strategies: (1) develop an integrated policy for changing the

trend in oil imports, (2) improve markets for natural gas, (3) increase gas and oil production and environmental protection through technology advancement and dissemination, and (4) improve communication and government decisionmaking.

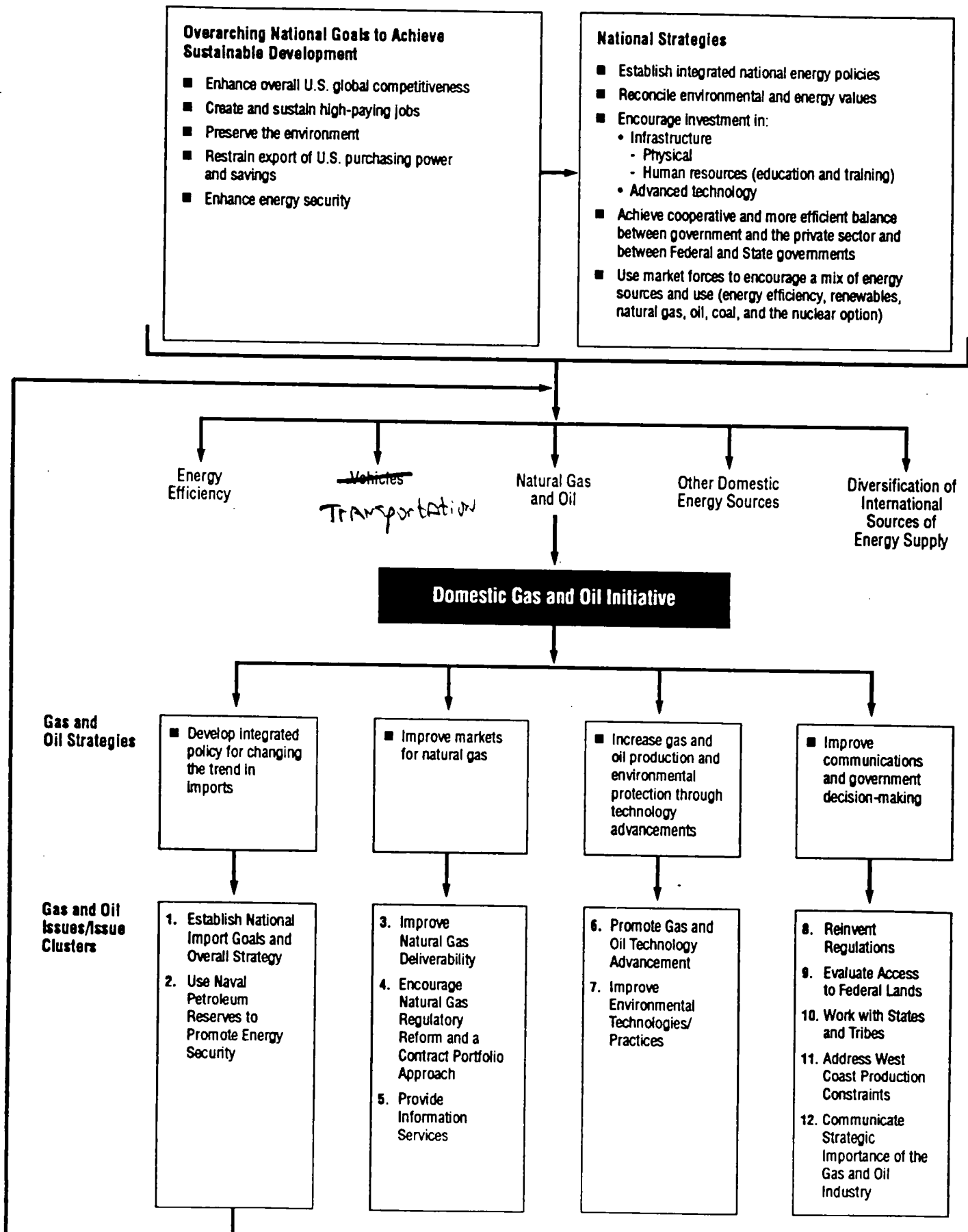
Figure 1 is the Domestic Gas and Oil Initiative Roadmap that summarizes the goals and strategies of the Initiative.

Preserving High Wage Jobs for Americans

The American people have given this Administration the pre-eminent task of redirecting public resources to help create high-wage jobs for American citizens. The American public and their government increasingly understand that this country competes internationally for jobs, for investment, and for economic growth. Success in that competition will depend, in part, on explicit national energy strategy.

Figure 1

Domestic Gas and Oil Initiative 9/1/93 Preliminary Roadmap



The growth of Pacific Rim economies demonstrates the power of national economic strategies at work, as does the historical success of American national policies ranging from the nineteenth-century emphasis upon railroads to the focus on defense-related industries since World War II. Whatever one's beliefs about the role of government, there can be no doubt that the growth of strategic industries in any country will enhance the number and quality of jobs available. In this nation, any listing of strategic industries must include the gas and oil industry.

In 1990, United States consumers spent over \$300 billion on gas and oil--5.5 percent of GDP. In addition, in 1990, the industry invested \$21.0 billion¹ in infrastructure.

The gas and oil industry, including the service industries, account for nearly 380,000 (Figure 2) American jobs, which pay wages 30 percent above that of the average American worker. (See Figure 3). What's more, fundamental sectors of our economy depend on these fuels. Gas and oil supply 99.9 percent of transportation fuel needs

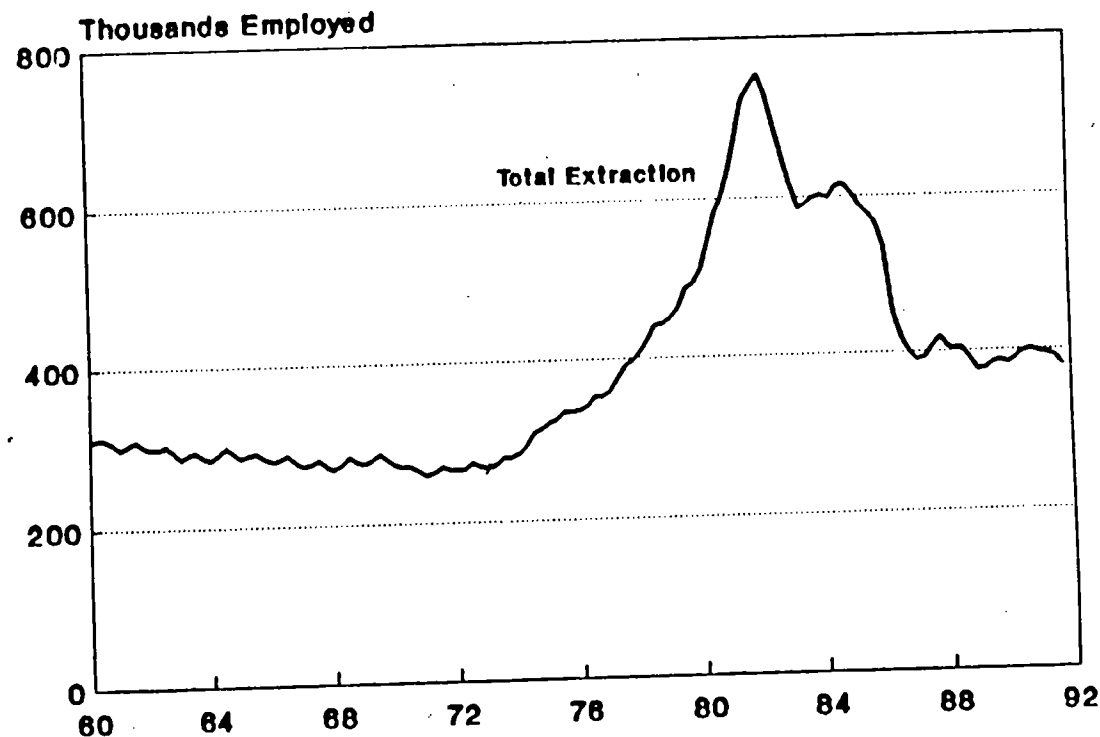
¹Source: API

49% decrease

Figure 3

- Employment in the oil and gas extraction industry rose during the post-embargo period, peaking at 754 thousand in 1982. Since then, total employment declined by 373 thousand.

Employment in Oil & Gas Extraction

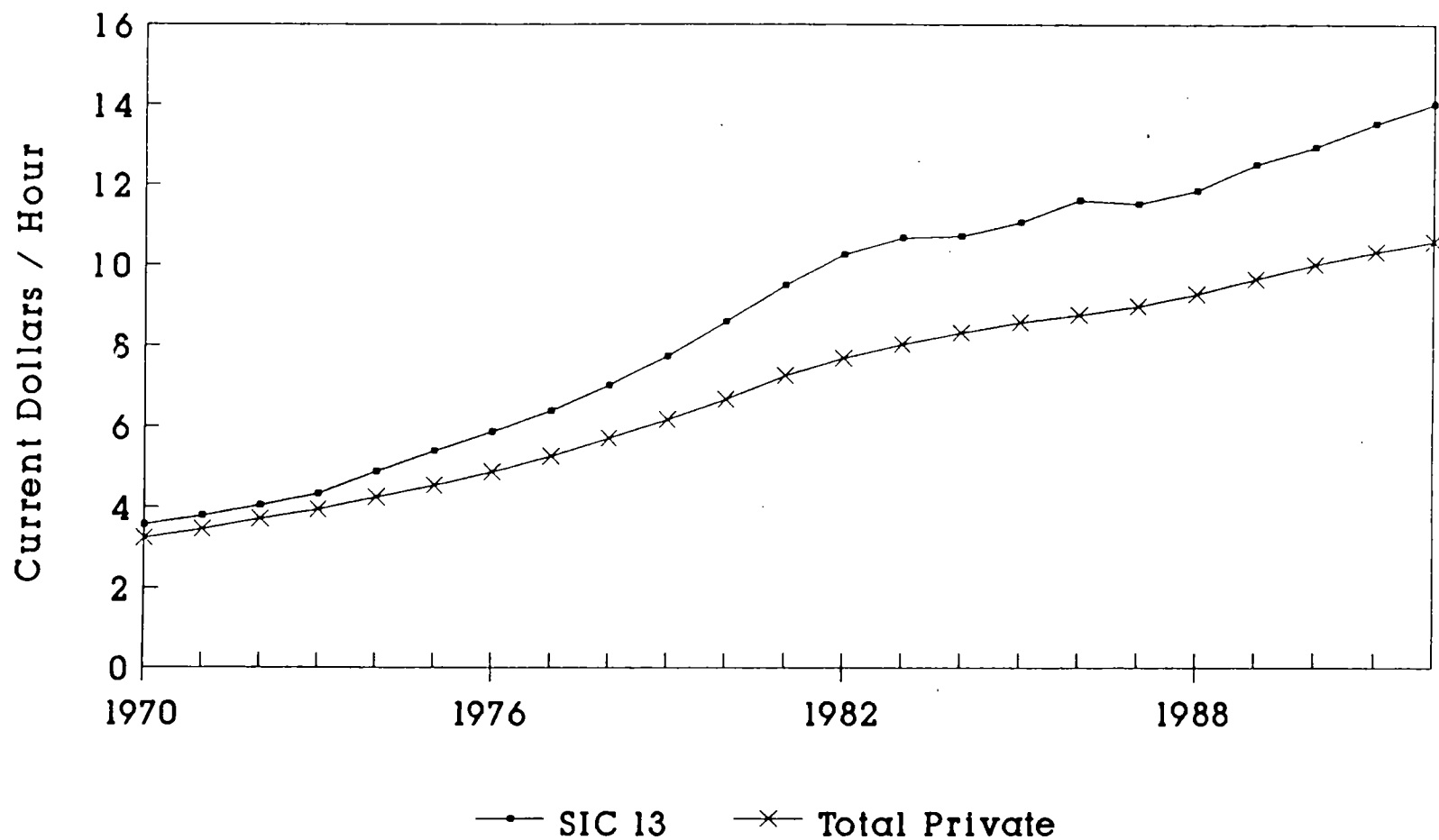


Source: Energy Information Administration

$778/754 = 49\%$

3

Figure 1. Average Hourly Earnings for
the Oil and Gas Extraction Industry



Source: Energy Information Administration

(almost entirely oil); 75 percent of industrial needs; 61 percent of residential and commercial needs and 13 percent of electric utility needs.²

The U.S. gas and oil industry is in transition. Most major oil companies have shifted their exploration operations abroad. The U.S. has large remaining resources of oil, but they require advanced and integrated technologies to locate and extract. Natural gas, however, is an abundant and under utilized domestic resource which can help to reduce our dependence on oil in many applications.

Increased exploration and production of domestic gas and oil has other strategic value besides creating high wage jobs. These are: (1) enhancing overall U.S. global competitiveness; (2) preserving the environment; (3) bolstering the economy by preventing the export of American purchasing power and savings and improving the

Source: EIA

Includes non-utility electric generation, independent power producers, feedstocks and other industry users.

balance of trade; and (4) increasing energy security by reducing vulnerability to supply disruption of the United States or its allies.

1. Enhancing overall U.S. global competitiveness. American industry no longer operates in isolated markets. Through mass communication and global transportation networks, goods and services flow across national boundaries seeking out consumers. U.S. policies should enhance--not diminish-- the ability of our domestic industries to participate globally. Nor should our policies drive domestic industries offshore. The United States must be able to draw upon strong domestic industries, such as the gas and oil industry, to enhance its overall global competitiveness.

2. Preserving the environment. As we move toward the twenty-first century, the nation must help avoid global climate change, minimize solid wastes, preserve our water resources, and protect sensitive environments. This Administration will assert world leadership on such issues. The policies that encourage gas and oil exploration

and production will be pursued with these environmental goals in mind and with the understanding that energy and environmental objectives are compatible.

3. Bolstering the economy by keeping American purchasing power and savings at home. Huge expenditures on oil imports are a major part of the nation's negative balance of trade. The effect of these import transfers American wealth and purchasing power abroad. Savings from energy efficiency and substitution of domestic supply for oil imports would maintain purchasing power in the U.S. economy.

4. Increasing energy security by reducing vulnerability to supply disruption. From 1970 to the present, oil imports alone have accounted for well over half of the U.S. trade deficit; and since 1986, oil imports have risen by more than 25 percent, with projections indicating that we will cross the 50 percent import threshold in 1995 or

1996.³ This trend is shown in Figure 4. As we approach the twentieth anniversary of the OPEC embargo which staggered U.S. financial markets and sent motorists scurrying to long gas lines, we remain vulnerable to the disruption of oil supply. Today, the developed world is even more dependent on open access to the Persian Gulf, the locus of most of the world's known oil reserves.

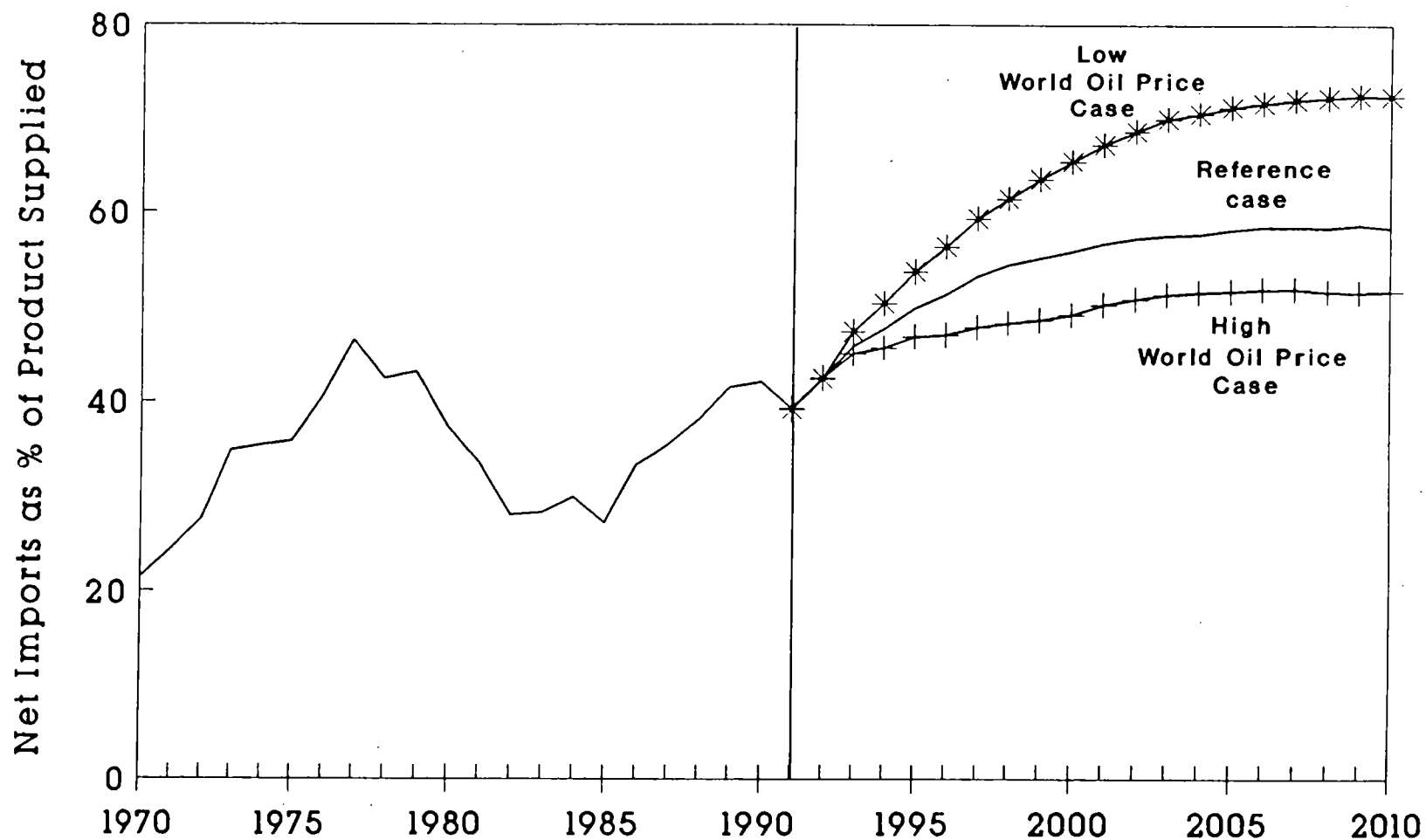
The other foreign resource base with the most potential for new reserves over the next 20 years -- the Republics of the former Soviet Union -- provides potential diversification of these international risks. The stability of these Republics may remain uncertain for years to come, but developing their gas and oil resource base will contribute to their stability and help diversify our oil supply portfolio.

Most of our economic competitors strongly encourage petroleum conservation -- often through imposition of high taxes -- in part to reduce vulnerability to supply

³ EIA: Annual Energy Outlook.

4

Figure 2. U.S. Dependence on Petroleum
Net Imports



Source: Energy Information Administration

interruptions. Americans have preferred to find other strategies to address this problem. To reduce our vulnerability to imported oil one of our principal strategies must be to strengthen exploration and production of domestic gas and oil resources.

II. Gas and Oil Policy, a Crucial Part of Core National Strategies

Reconciling Environmental and Energy Values

During his campaign, President Clinton stated that: "A primary goal of the Clinton/Gore National Energy Policy will be reducing the amount of foreign oil consumed in America."

Achieving this goal requires a coordinated strategy that far transcends gas and oil alone. We must integrate initiatives on energy efficiency and renewable energy

resources, transportation, other domestic energy sources, and diversification of international sources of supply.

This coordinated energy strategy, in turn, must reconcile energy and environmental values. The confrontation over these issues has led to much delay, litigation, and frustration, and has threatened to lock up valuable resources that could benefit the nation. While the nation must protect the environmental heritage we hand down to future generations, these values can be made compatible with resource development.

We need to encourage constructive dialogue among the various interests to educate all parties about the costs and benefits involved to achieve agreements that benefit the nation.

This initiative focuses on natural gas and oil strategies, but is not an attempt to be a complete energy strategy. This Administration has created a Council on Sustainable Development, a Clean Car Initiative, a Federal Fleet Conversion Task Force, and

other measures to bring together diverse components of energy policy. A bipartisan group of political leaders recognizes the need for integrated energy strategy in this nation. The Energy Policy Act attempts to weave a number of diverse energy supply and demand components into this fabric.

The Domestic Gas and Oil Initiative sought strategies to achieve its goals without sacrificing other paramount national interests, such as deficit reduction and economic stimulus. Wherever possible, the strategies seek to take advantage of market forces. In establishing the new gas and oil policies, the government also seeks to achieve a cooperative and more efficient balance between the public and private sectors, and between Federal and State governments.

III. The Domestic Gas and Oil Initiative

As previously stated, the Domestic Gas and Oil Initiative has four basic strategies.

They are:

Strategy 1. Develop an integrated policy for changing the trend in oil imports;;

Strategy 2. Improve markets for natural gas;

Strategy 3. Increase gas and oil production and environmental protection through
technology advancement and dissemination; and

Strategy 4. Improve communication and government decision-making.

Strategy I. Develop an Integrated Policy for Changing the Trend in Imports

In 1992, petroleum provided 41 percent of the energy consumed in the United States.

The United States also imported 41 percent of its net petroleum supply. As indicated earlier, imports will comprise 50 percent of the oil consumed by 1996 if current trends continue. That level of importation will compound the national problems already identified.

The first leg of the Domestic Gas and Oil Initiative addresses a process for developing an integrated strategy for changing the trend in imports. Two approaches for developing this strategy are being considered:

- o In the first approach, the process would develop a goal for a maximum dependence on imported oil, and further define the set of actions, or policies, that the Federal government would adopt if the goal was not achieved.
- o In the second, the process would address only the policies that the Federal government would use to reduce oil imports.

Establishing national import goals and overall strategies

In developing a process for determining an import strategy, at least three questions must be considered:

- How important are oil imports to national security?
- At what point should the Federal government respond?
- When, or if, it responds, what action should the government take?

To address this issue, the Administration should establish an interdepartmental working group, coordinated by the National Economic Council, with the Department of Energy as the lead agency. This working group would examine approaches and develop recommendations. Topics for study would include goals and thresholds for future import levels and optional responses to be available should imports exceed a specified threshold. These options could be as diverse as making more aggressive and substantial energy efficiency investments in Federal buildings, measures to increase efficiency in vehicles, or implementing some mechanism to make oil imports

more costly. Policies for reducing the growth of imports would be integrated with other U.S. trade and fiscal policies.

In earlier reviews of the impact of oil imports on national security, the sole consideration had been the fraction of U.S. oil consumption that was imported. A broader perspective is needed that will take into consideration the fraction that oil imports constitute of total U.S. energy consumption. In 1978, for example, just before the Iranian overthrow reduced world oil supplies and created gasoline lines in the United States, 23 percent of U.S. total energy consumption was imported oil. By 1983-84, high prices and an economic recession reduced this measure of energy dependency to 12-13 percent. By 1992, however, it had climbed back to the 18 percent range.

A broader view of U.S. dependence on imports will take into consideration other energy-related areas where the Clinton Administration is active. As shown in the Domestic Gas and Oil Initiative "road map," these include:

- o Promoting and encouraging energy efficiency
- o Transportation initiatives and programs
- o Development of other energy sources
- o Diversification of international sources of energy supply

Thorough review of the progress being made in these areas is required to develop an integrated strategy for dealing with the growing problem of oil imports.

Strategy 2. Improve Markets for Natural Gas

As stated by President Clinton, the substitution of a BTU of domestically produced natural gas for a BTU produced by imported oil provides unqualified benefits to the country. Substitution of gas for imported oil helps the environment and keeps jobs at home.

The remaining resource base for natural gas appears to be more abundant than the remaining resource base for domestic oil. Independent studies indicate that the size of the gas resource base promises the availability of natural gas for several decades, without opening up virgin exploration provinces such as parts of Alaska (Table 1).

Figure 5 indicates that since 1987, the returns from development have nearly doubled. Most of this increase in productivity represents the finding of new gas reserves.

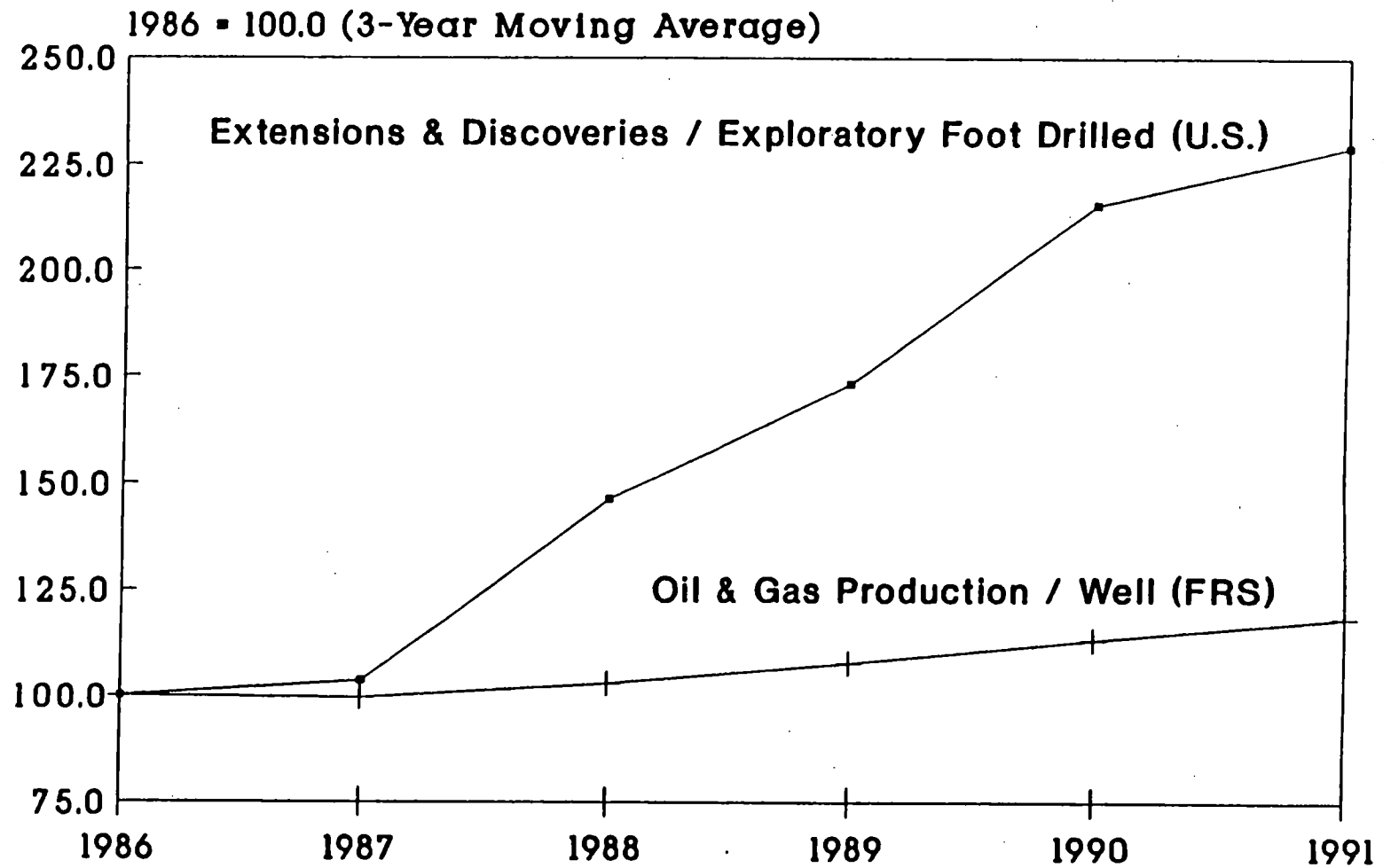
**Table 1. Recoverable Resources in the Lower-48 States
Comparison to Other Estimates
(Trillion Cubic Feet)**

	National Petroleum Council	Potential Gas Committee	Gas Research Institute	Energy Information Administration
	1992	1990	1992	1990
Proved Reserves	160	160	160	160
Conventional Resources				
Reserve Appreciation	203	170	150	265
New Fields	413	491	394	327
Total Conventional Resources	616	661	554	592
Nonconventional Resources				
Coalbed Methane	98	88	110	90
Shales	57	--	123	30
Tight Gas	349	--	238	383
Other	15	--	32	--
Total Nonconventional Resources	519	88	503	503
Total Assessed Resource	1,295	749	1,047	1,095
Total Resource	1,295	909	1,207	1,255
Adjust to 1/1/91	--	--	--	35
Total Adjusted Resource	1,295	909	1,207	1,220

Source: National Petroleum Council, The Potential for Natural Gas in the United States, December 1992, Volume II - Source and Supply, page 37.

5

Figure 3. Indexes of Oil and Gas Productivity



Source: Energy Information Administration

The Administration's strategy includes strengthening natural gas distribution capabilities; supporting continuing gas regulatory reforms; encouraging regulators to permit companies to enter into a portfolio of contracting arrangements, including longer-term contracts and hedging, designed to stabilize pricing and supply; and providing information services. These efforts would be implemented using market-oriented mechanisms, in cooperation with the elements of the natural gas industry that most aggressively produce and market gas. These measures are expected to boost the consumption of lower cost, cleaner burning, plentiful domestic natural gas, which would often replace oil imports, and keep jobs in the U.S.

Improving natural gas deliverability

Efficient delivery of natural gas from the wellhead to the burner tip is currently limited by an incomplete physical infrastructure for gathering, transporting, storing, and distributing gas, and by an incomplete information infrastructure for monitoring natural

gas supply and demand. To improve the physical infrastructure, the Administration will work to remove barriers to environmentally sound construction of additional pipeline and storage facilities; increase access to existing facilities; and accelerate the development and use of advanced technologies in natural gas storage and distribution. The Administration should promote policies and encourage public and private action to improve real-time capabilities for monitoring and modeling natural gas availability and flows, and match gas storage to end-user requirements. Such efforts will be especially important in enabling greater use of natural gas in electric power generation.

A reliable properly functioning, competitive gas market requires distribution and information systems that will meet the demands of the market. Competition will improve when timely and accurate information is readily available to allow buyers, sellers, and transporters to make informed choices.

Encouraging natural gas regulatory reform and removing barriers to new contracting and hedging mechanisms

Federal and State regulators should continue to promote a competitive, customer oriented industry structure. Changes under way in the private sector and market restructuring by the Federal Energy Regulatory Commission are already reducing the costs of information and transactions in natural gas markets. The proposed initiatives will build on these changes, with emphasis on encouraging a flexible portfolio of contracts approach for gas purchasers to stabilize gas supply and pricing.

At the State level, changes in regulations governing the distribution of natural gas and electricity can also lead to improved efficiency in energy use. States may find that revising electricity, gas, environmental, and energy conservation regulations to better reflect true economic costs will lead to greater economic value and a cleaner environment. A cooperative effort between State Commissions and DOE will foster

regulatory reforms that will: (1) improve access to gas distribution facilities; (2) encourage efficient pricing for electricity and gas; (3) encourage the removal of fuel-specific subsidies that work against energy efficiency goals; (4) encourage cost-cutting by distributors; and (5) boost the use of natural gas transportation.

In addition to these Federal and State regulatory reform initiatives, the Administration is pursuing three efforts to accelerate the use of natural gas in transportation markets:

(1) The Clean Car Initiative--a large research and development project involving

General Motors, Ford, Chrysler, and the Federal government; (2) The Clean Cities

Program--A coordinated development of alternative fuel vehicle infrastructure; (3) The

Federal Fleet Conversion task force--A program in 38 metropolitan areas designed to

convert fleets to natural gas and other fuels over the next year. Efforts such as these

will have a tremendous impact on reducing imports, creating jobs and opening new

markets for natural gas.

Providing information services

The Department of Energy shall improve its ability to develop, collect, and disseminate information on natural gas deliverability and storage. To complement the proposed initiatives to improve natural gas deliverability and encourage regulatory reform, the DOE would enhance the capabilities of the Energy Information Administration in collecting this data, and would develop an Energy and Resources Mapping and Information System. The Energy Information Administration also should work with other agencies and the private sector to provide a coordinating function, and avoid duplication.

Strategy 3. Increase Gas and Oil Production and Environmental Protection through Technology Advancement and Dissemination

The gas and oil industry relies upon advanced technology, in which American firms traditionally have led the world. Gas and oil exploration and production represent the quintessential "high tech" industry. As in many industries, however, worldwide competition is fierce and increasing. If domestic producers are to continue to provide a substantial portion of U.S. oil needs and compete in world oil markets, new and advanced technologies must be developed and widely applied to improve efficiency, minimize environmental impact, and lower production costs. New technologies will also be vital in developing our abundant domestic natural gas resources to meet projected demand.

Increasing the efficiency with which gas and oil can be produced may not directly increase high-wage jobs *in the short run*. In the longer run, however, increased productivity through new technologies has job-creating effects. First, by keeping U.S. technologies world class and on the cutting edge, we ensure that they are the technologies of choice worldwide, thereby maintaining and expanding export

opportunities and export-related jobs. Second, increased productivity can make more of a domestic energy resource available, ultimately allowing expanded production with increased employment.

The Administration will encourage the development and use of sophisticated technologies to (a) enhance recovery of the large quantities of oil left in the ground by conventional production methods; (b) increase exploration success in the discovery of new gas and oil fields reducing the cost of exploration; and (c) enable domestic gas and oil producers to more cost-effectively comply with environmental regulations and improve environmental performance.

Revolutionary technologies, using state-of-the-art computer mapping for exploration and production are being developed and applied. For example, three dimensional (3-D) seismic analysis can provide clear high-resolution images of the subsurface targets. Success using this approach has been documented by several oil companies.

Figure 6 is an example of Chevron's success in its Bay Marchand field in Louisiana.

Prior to 3-D utilization, production in this field had declined to 18,500 barrels per day.

Using the 3-D technology, production decline was reversed and almost doubled to

32,500 barrels of oil per day. Other case studies suggest that where new undrilled

prospects lay adjacent to producing fields, the discovery success rate can be

improved by as much as 50 percent.

While these computer mapping technologies are new, independent producers,

integrated major producers, and the service industry believe that they hold great

promise for expanding production from our domestic reserves. Furthermore, such

technologies have great potential in developing gas and oil resources abroad, and

represent a significant export market. To take advantage of these opportunities, the

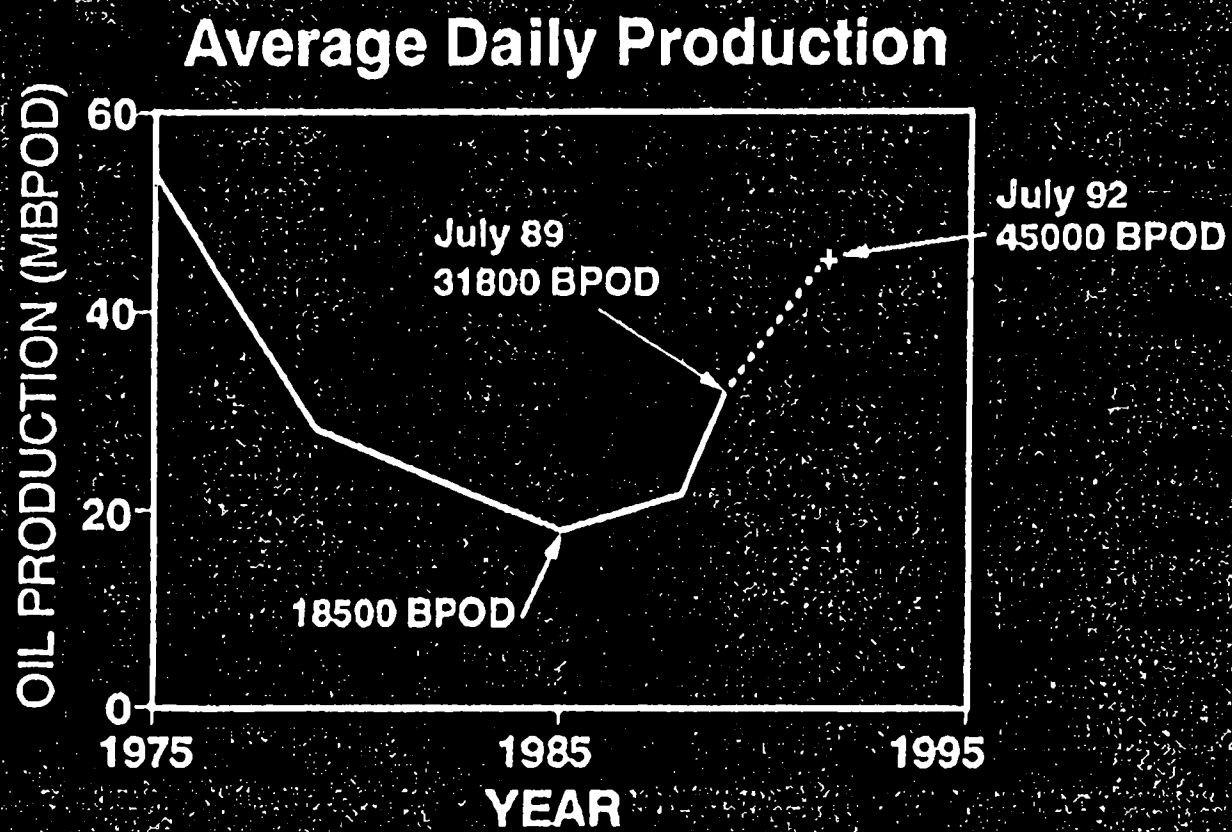
Administration will enhance joint government/industry/university research and

development efforts on fundamental computing problems related to exploration and

production. These efforts would build on the longstanding leadership of the United

Figure 6A.

Chevron - Bay Marchand



*"Modern technology in an old area:
Bay Marchand revisited"; TLE, June '91*



States in developing and marketing new computer technologies and applications, and would help to maintain a strong U.S. position in this critical, high-wage field.

Public/private R&D partnerships are particularly important as industry has generally cutback funding for R&D.

The initiative also proposes to accelerate and expand upon the current DOE oil R&D program to increase advanced oil recovery capabilities and reduce the rate of reservoir abandonment. This will be accomplished through expanding field demonstrations from one to two reservoir classes per year; conducting in-depth evaluations of selected past and ongoing industry projects to pinpoint important problems yet to be solved; disseminating more complete information on technology developments; conducting field-based reservoir characterization and innovative recovery process experiments; and expanding supporting research to address industry-identified needs.

Domestic gas and oil producers face increasing costs of compliance with environmental regulations. To help reduce these costs through technology, the DOE, with the assistance of the EPA, would establish an industry-based environmental research advisory board to advise the government on R&D issues; create an environmental technology demonstration and technical assistance program; and develop specific studies and demonstrations such as assessing the feasibility of significantly increasing the amount of lubricating oil that is recycled in the United States.

The Administration will stimulate development of a nationwide technology transfer network and assistance program. Technology transfer efforts will be especially important in encouraging the 8,000 independent operators in the U.S. to adopt innovative methodologies. Because of the increased productivity and costs associated with new technologies such as advanced computing, many independents have formed associations that give them access to new technologies. As major oil companies shift

activities abroad, these independents have become the heart of the domestic industry.

They drill about 85 percent of all domestic wells, exploratory and development. Two thirds of the independents have fewer than 20 employees, contributing to lower overhead cost structures that enable them to operate at a profit where majors could not. By assisting operators in using new technologies developed by both industry and government, technology transfer efforts can make a critical contribution to increasing domestic production and sustaining the viability of the domestic industry.

New technologies can also be promoted through targeted tax changes to encourage research and development expenditures in the gas and oil industry. Tax policy should encourage new expenditures associated with geophysical and environmental research even when they result in successful wells. This can be done without significant loss in revenue.

By encouraging the use of the most advanced technologies for gas and oil production and environmental compliance, the proposed initiatives will help boost high-technology, create high-wage employment in the United States, and reduce the transfer of American savings and purchasing power abroad. Ultimately, investments in technology should be investments in people; only superior knowledge and skills of American workers will keep them at the forefront of international competition.

Strategy 4: Improve Communication and Government Decision-Making

This strategy addresses many problems of traditional government and counterproductive regulation affecting United States gas and oil supply. It supports the Administration's objective of "reinventing government" by seeking to enhance the ability of government to make sound regulatory and policy decisions, and to improve

cooperation among Federal agencies, between Federal and State bodies, among government, environmental and consumer groups, and the gas and oil industry.

Specifically, the strategy consists of initiatives to (1) reinvent regulation; (2) create a formal framework to assess the effect of access to Federal lands on United States energy policy; (3) work cooperatively with States and Tribes; (4) address constraints on West Coast production; and (5) better understand and communicate the strategic role of the gas and oil industry.

Future environmental regulations and access limitations have the potential to adversely affect industry's ability to explore for and produce domestic gas and oil resources. At the end-use sectors, however, this reduces the opportunities to use abundant natural gas resources as a cleaner burning fuel source to solve the nation's air quality problems, and it reduces the nation's ability to decrease its dependence on imported oil.

During the last decade many American industries, including the gas and oil industry, restructured themselves to improve quality and increase performance in response to fast-changing, ever-more-competitive world markets. It is now time for the Federal and State governments to go through a similar process in their regulatory and permitting functions.

Reinventing regulation. Over the past several decades, patchwork environmental policies and regulations have too often failed to address problems as subsets of a comprehensive scheme for protecting the environment and achieving other national objectives such as energy and economic security. Better analysis of environmental regulation might both improve the environment and revitalize the industry by removing barriers to exploration and production of domestic natural gas and oil. A host of recent studies have shown the need for greater flexibility and innovation in regulating

the gas and oil industry and more cost-effective approaches to protecting the environment.

The proposed initiatives are:

- Work cooperatively with States through organizations such as the Interstate Oil and Gas Compact Commission to promote the streamlining of State regulatory programs and avoid duplication in Federal and State regulatory programs.
- Enhance coordination and the capability of State and Federal governments to make better legislative and regulatory decisions through better analysis and information concerning tradeoffs.
- Demonstrate the feasibility of alternative approaches to environmental regulation that balance cost and benefits and promote innovative approaches to achieving

environmental objectives based on knowledge gained from various National Petroleum Council studies and by the Environmental Protection Agency and Amoco at the Yorktown refinery.

- Consider the implications of the National Petroleum Council's refinery study, taking into account that capital needs at one end of an integrated corporation may reduce the availability of capital at the other end.
- Promote dialogue and build partnerships among industry, States, the public, and other interested parties to resolve disputes and balance competing energy, economic, and environmental objectives necessary for sustainable development.

Access to Federal lands. This Nation's public lands represent a precious resource to be preserved for future generations. Careful treatment of public lands does not

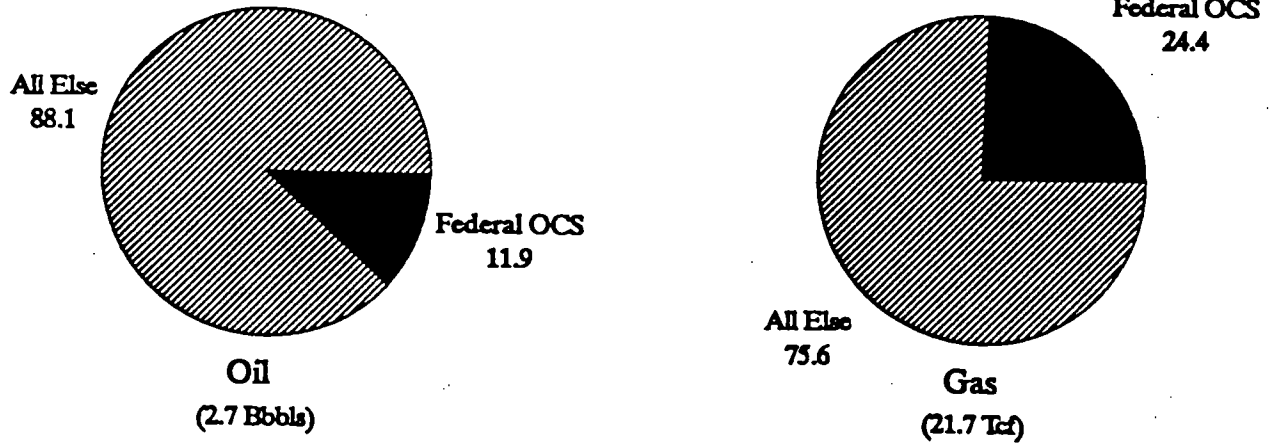
require, however, that no extraction of subsurface resources should occur. Extraction should occur in a manner having minimum impact on the environment.

Figure 7 shows the substantial percentage of gas and oil resources that underlie Federal lands and waters. Federal lands comprise some 720 million acres of property onshore, nearly one-third the entire land area of the United States. Approximately 41 percent of these lands are currently unavailable to the gas and oil industry. Today, large portions of the Outer Continental Shelf are restricted from gas and oil development under executive and legislative moratoria.

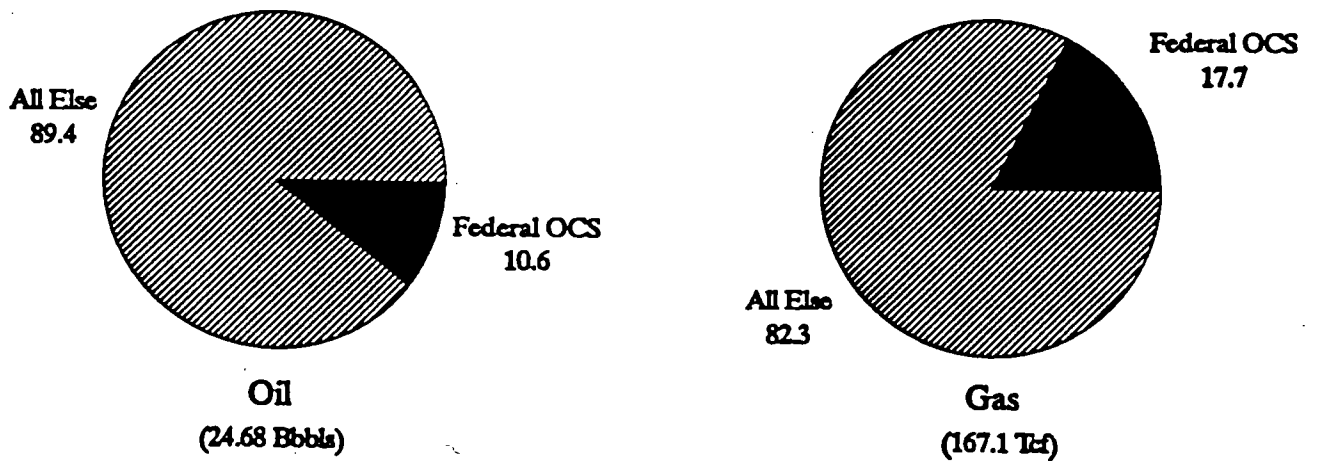
Under the Domestic Gas and Oil Initiative, the Department of Energy and the Department of Interior propose to establish a Federal Lands Energy Task Force to ensure that national energy strategies are appropriately considered in leasing decisions related to Federal lands. A description of the scope of this process should be contained in a Memorandum of Understanding between the Departments.

Figure 5. Federal Lands and Waters (Percent of U. S. Total)

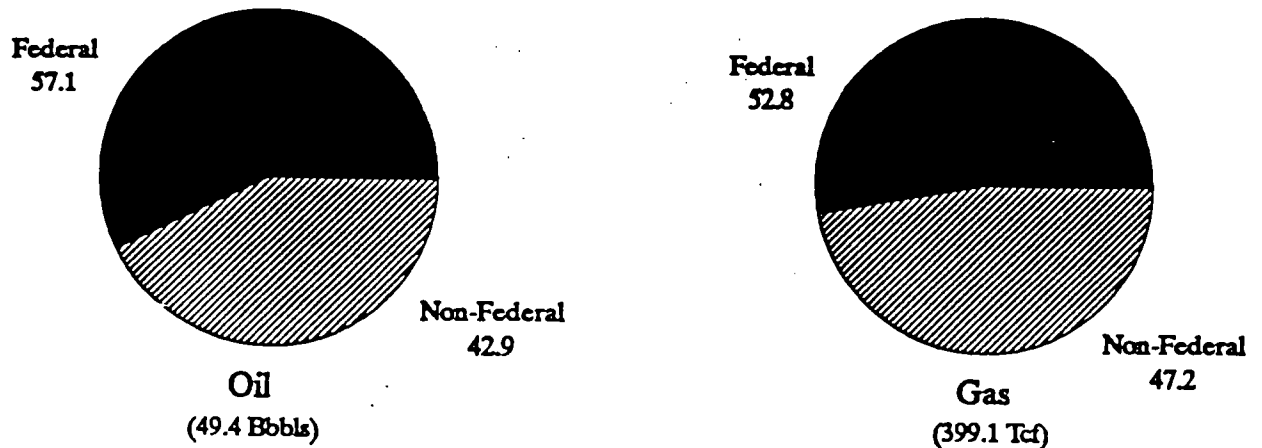
1991 Federal OCS Production



1991 Federal OCS Proved Reserves



Undiscovered Recoverable Oil and Gas Resources



Sources: Energy Information Administration and U. S. Department of Interior.

The U.S. leads the world in the development of environmentally effective technologies for exploration and development of gas and oil in frontier areas, and we should retain this leadership not only for ourselves, but for the planet we share. This base of knowledge contributes to the tools available internationally for environmentally responsible gas and oil development, as other nations push offshore and into the Arctic.

Working with States and Tribes. States have a primary role in regulating the gas and oil industry relative to resource conservation, environmental protection, and the use of natural gas. Ongoing federal interactions with State organizations such as the Interstate Gas and Oil Compact Commission, the Ground Water Protection Council, the Energy Council, the National Governors' Association, and the National Association of Regulatory Utility Commissioners should be strengthened. The Federal government will work cooperatively with individual States to identify and resolve key issues constraining gas and oil supply at the State and regional level; and to forge

partnerships with Tribes to increase domestic gas and oil production on tribal land while helping to alleviate poverty among Native Americans.

Addressing West Coast production constraints. Crude oil production from the Alaskan North Slope (ANS) is likely to decline, leaving the West Coast once again a significant importer before the year 2000. To address this problem the Administration proposes removing many of the barriers that inhibit development of California and Alaskan resources by:

- Removing restrictions that preclude exporting California heavy crude oil to give the West Coast access to the growing Pacific Rim market, stimulating investment in that region.
- Encouraging oil pipeline access for non-integrated producers in California. Most, if not all, of these large pipelines should operate as common carriers by virtue of

their settlements in long-standing lawsuits, or their use of rights-of-way granted under the Mineral Leasing Act. Free and open access to transportation assets in the State will help to increase production.

- Stimulating investment in California refineries to permit refining a greater amount of heavy indigenous crudes. Incremental California crude oil production consists of heavy crude oil that requires extensive refinery processing to satisfy California's high demand for light, low-sulfur transportation fuels. Declining Alaska North Slope supply will make room in refinery "upgrading" units for additional California heavy crude oil, but, faced with readily available lighter crudes from the Pacific Rim and the Middle East, the stimulus might not be great enough to promote capital investment in California refineries.

Public understanding of the strategic value of the gas and oil industry to the nation.

Public perceptions of the gas and oil industry have not kept pace with its changes

during the last decade. The gas and oil industry has evolved during the last decades into a business of high-tech, skilled, and educated professionals and, is a far cry from the rough-and-tumble image formed many years ago. However, the industry has been devastated by recession in the last decade. The government should play a role in increasing awareness of this strategic importance of the industry in the United States economy.

IV. Summary and Conclusions

Toward the Twenty-first Century

The Domestic Gas and Oil Initiative has been shaped and determined by a cooperative effort of government and industry. Its primary focus is the fact that domestic natural gas and oil production is a basic element of the country's economic foundation. Without this foundation, the security of the economy can be threatened by

supply disruption from abroad. We allowed our economy to be exposed to this peril in the 1970's and our economy suffered greatly. Today we are moving quickly back to the dependency levels of the early seventies. To maintain a secure economy, to preserve and create jobs in this nation, to maintain our gas and oil production technology, and to ensure environmentally responsible natural gas and oil exploration in the United States and abroad, we must maintain a position of leadership in this industry. We must have a strong energy policy.

At the heart of this Initiative are four basic strategies. They are:

- (1) Develop an oil import policy;
- (2) Improve markets for natural gas;
- (3) Increase gas and oil production while protecting the environment through advanced technology; and
- (4) Improve government communication and decision-making.

The Gas and Oil Initiative will build upon ongoing efforts by the DOE's Office of Energy Efficiency to encourage oil alternatives, such as natural gas and electric powered vehicles. Collectively, those efforts and these strategies will enable the nation to bridge to the time when energy efficiency, renewables, and a host of advances in technology reduce our dependence on fossil fuels. That time is coming more quickly than most people realize. Industry is increasingly driving for energy efficiency, redesigning its processes from a total system perspective — from raw materials, to the production processes that minimize pollutants and enable recyclability. Life-cycle thinking that accounts for costs once considered "externalities" is taking hold. If U.S. industry is to bring its energy efficiencies up to levels competitive with those of Japan and Germany, then life-cycle thinking must become the norm.

As for automobiles and their pivotal place in the energy/environment/economy equation, technological innovations now available, such as lightweight materials and

advanced motor designs, will transform the autos we know today. These technologies can boost gas mileage to levels that approach and even exceed 50 miles per gallon, sharply decreasing the need for imported oil *and* reducing air pollution to acceptable levels at the same time.

This energy efficiency transformation will happen. But no such sweeping changes can happen overnight. Until they do, this nation must depend on a healthy, effective domestic natural gas and oil industry.

The strategies in the Gas and Oil Initiative will make this possible. They will reduce the rate of increase in imports; they will reduce levels of pollutants; they will help to optimize the mix of fuel sources used in this country; they will improve efficiency of the industry itself; and they will help to extend the indispensable contribution of the industry to the U.S. economy well into the first decades of the twenty-first century.

White House Poised to Offer Energy Initiative

Plan Calls for Tax Incentives To Boost Natural Gas, Domestic Oil Industry

By TIMOTHY NOAH

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON — The Clinton administration is preparing to propose tax incentives and other measures in an effort to stimulate the domestic oil and natural gas industries.

The proposals, according to a partial draft obtained by The Wall Street Journal, include expanding tax breaks aimed at encouraging gas and oil exploration, increasing research and development funds, and reducing regulatory barriers at both the federal and state levels.

The administration's aim in part appears to be to soothe the oil industry, which has complained that the administration is more focused on conservation and promoting renewable fuels than on boosting domestic oil production.

Shut Out of Negotiations

Industry officials were all but shut out of the negotiations leading to Mr. Clinton's proposed tax on nearly all forms of energy based largely on heat consumption as measured in British thermal units. But fierce lobbying efforts by the industry helped to quash the BTU tax and replace it with a milder transportation tax.

Now, the Clinton administration is eager to show its sympathy for the oil industry's woes. "This is an industry that has lost 450,000 jobs over the last decade," said an Energy Department official. He said the energy initiatives would "create jobs," "stimulate markets for natural gas," and reduce dependence on foreign oil.

The partial draft — a table of contents for the report that lists the energy initiative — doesn't indicate the projected costs of the proposed initiatives, which were arrived at through talks between the Energy and Treasury departments and other executive branch agencies.

The Energy Department is expected to issue the report later this month, and a department spokesman warned that the initiatives still are being developed and that many of the items listed in the draft already have been dropped.

But the policy initiatives included in the draft document give a clear signal that the Clinton administration wants to ease burdens faced by the oil and gas industries. The draft proposals include:

- Creating tax credits to stimulate new oil and gas exploration, aimed specifically at encouraging new exploration technologies.

- Reducing regulatory and legal barriers to export of oil from Alaska's North Slope, which is now restricted largely to domestic use.

- Accelerating the process for receiving tax deductions for geological and geophysical costs.

- Urging states to eliminate regulations that inhibit the use of natural gas in vehicles.

- Funding a research program aimed at "everyday problems" of small independent oil companies.

- Creating tax incentives for oil exploration on the outer continental shelf, principally in the Gulf of Mexico.

- Removing "net income limitation" for independent companies that claim deductions under the percentage depletion program; currently these deductions are capped according to income.

- Expanding existing credits that encourage "enhanced oil recovery," or oil exploration requiring sophisticated methods such as steam injection.

- Expanding, or considering expansion of, the Energy Department's role in research and development on combating oil spills.

Many of the draft proposals, such as accelerating depreciation for capital-equipment costs associated with environmental regulation, were considered by the Bush administration but never became law.

Also listed in the table of contents is a proposal to create floor prices for oil and gas through an oil import fee. But this proposal has since been dropped, an administration official said.

Senate votes \$640 million funding for super collider

ASSOCIATED PRESS

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The Senate voted yesterday to give President Clinton all \$640 million he wants for work next year on a giant atom smasher in Texas, rebuffing foes who said killing it would be a good way to trim the budget deficit.

The 57-42 vote, which was expected, rescued the superconducting super collider from extinction because the House had voted in June to terminate the multibillion-dollar program. The next battle will be waged when negotiators from the

two chambers try thrashing out a compromise.

"We may have some more fights, but this is it, I think," supporter Sen. J. Bennett Johnston, Louisiana Democrat, said after the vote. "I hope it will be fairly easy sailing from now on."

Opponents said the issue was decided by lawmakers' desires to protect the thousands of jobs and billions of dollars' worth of contracts that the huge research project is generating. The collider, an underground tunnel 54 miles in circumfer-

ence, is one-fifth complete. It is located about 30 miles south of Dallas.

"Minds are made up weeks before the debate starts," complained the chief detractor, Sen. Dale Bumpers, Arkansas Democrat. "The logrolling has taken place, the commitments have been made, the contractors have gotten commitments from people."

Shortly after the Senate vote, the Clinton administration immediately began lobbying for the program.

"This project is worthy of full funding support by the House-Senate" negotiators, Energy Secretary Hazel O'Leary said in a statement.

Funds for the super collider were included in a bill providing \$22 billion for water and energy programs for the federal fiscal year that begins today.

Another fight was being waged over more than \$30 million the legislation contained for work in Illinois and Idaho on a nuclear fuel research program.

Proponents said the project could solve the problem of how to dispose of the nation's growing mountains of radioactive waste.

That project, however, was insect-sized compared with the super collider's projected price tag of \$11 billion or more.

The collider's proponents said the expense is worth every penny. They said the project could yield knowledge about the origins of matter and the universe, create spinoff discoveries in medicine and high technology, and keep the United States the world's supreme scientific power.