

**ENERGY AND THE ENVIRONMENT:
THE FUTURE OF NATURAL GAS
IN AMERICA**



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INTRODUCTION

Natural gas has been regarded as the ideal fossil fuel for multiple uses – from electricity generation to manufacturing, in part because of its efficiency, in part because of its relative cleanliness, and in part because of its relatively low delivered cost. For many years, natural gas was a wise and easy choice; America is blessed with an abundant supply and gas burns cleaner and is considered by some to be more environmentally preferable to other fuels. That abundant supply translated to low prices, and those low prices helped fuel a strong and vibrant economy.

Now however, the days of low gas prices are over, and the nation is in the midst of a very real natural gas crisis.

Most people probably do not realize the importance that natural gas plays in their daily lives, but they certainly have noticed paying more for energy than they did a year ago. As more of a family's income is diverted for energy costs, less money can be spent on providing for their children's education, less money can be invested in their small business, less money can be saved for retirement. Not surprisingly, these higher prices are most acutely felt by the poor and those on fixed incomes.

Many of our nation's workers have unfortunately felt the result of high natural gas prices in the most severe way – they have lost their jobs. Natural gas is a principal feedstock to several industries including chemical and petrochemical manufacturing, the pulp and paper, steel, and fertilizer industries. When the domestic costs of production increase relative to global competitors, U.S. domestic manufacturing companies lose out.

Policymakers and the public have been struggling to determine why the U.S. is in the grip of this natural gas crisis. Why have natural gas prices increased so dramatically? Why has the market been unable to correct itself to find balance? And most importantly, how can Congress affect federal policies that will temper the natural gas crisis?

As the Mayor of Tulsa and later a Representative and Senator representing the oil and gas producing State of Oklahoma, I have been involved with natural gas policy spanning five decades. As Chairman of the U.S. Senate Committee on the Environment & Public Works, I have focused on the situation with renewed fervor. On March 25, 2004, I chaired an oversight hearing concerning the environmental considerations affecting natural gas prices. At that hearing, representatives of the natural gas production industry, manufacturing sector, environmental groups, farmers, and even a Northeastern Governor testified. The conclusions and lessons learned from that hearing were far-reaching and significant. Yet, the most dramatic finding was that U.S. federal laws and policies have contributed in large measure to the nation's natural gas crisis.

In large part, changes to the Clean Air Act and other air-related regulations have driven increased demand for natural gas. Yet, other federal environmental policies have effectively prevented a sufficient and corresponding increase in supply of natural gas.

These conflicting federal policies have created an artificial barrier for the market to adjust itself.

Further, national environmental groups, that only a few years prior, praised natural gas as the bridge fuel to a clean environment, today oppose increasing supplies. Interest groups have largely chosen their sides between the political parties and refuse to work within reasonable bounds. Instead, they seem to happily if not blindly balance on the edge of a partisan cliff while U.S. competitiveness tumbles down it.

The issue of providing energy to the nation while maintaining a clean environment has become overly politicized where spin and rhetoric are preferred over facts and science. This document rejects the rhetoric and focuses on the facts. Section I analyzes the reasons that have contributed to the increased demand of natural gas, the increase in prices and their effect on several sectors of the U.S. economy. Section II discusses the obstacles that have and continue to prevent the nation from balancing its need for natural gas with its ability to increase supplies. Section III details recommendations that Congress should consider to steer the U.S. out of the natural gas crisis and back toward a competitive and vibrant economy.

As Alan Greenspan, Chairman of the Federal Reserve said, “[w]e have been struggling to reach an agreeable tradeoff between environmental and energy concerns for decades. I do not doubt we will continue to fine-tune our areas of consensus. But it is essential that our policies be consistent.”¹

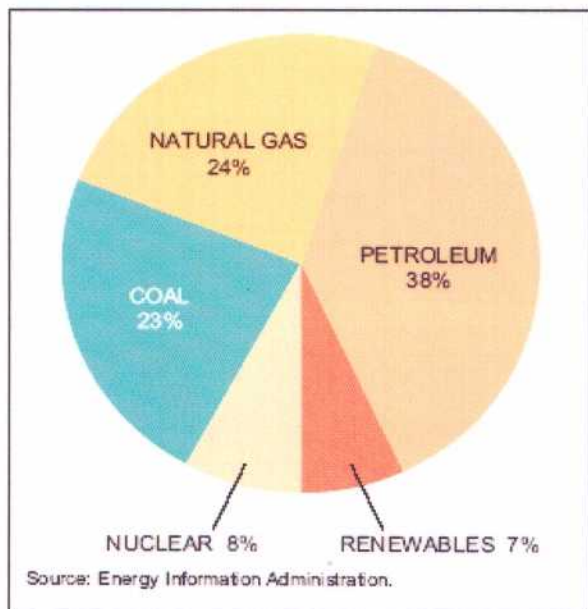
¹ *Hearing on Oversight of Natural Gas Before the Senate Comm. on Energy & Natural Res.*, 108th Cong. (July 10, 2003) (statement by Alan Greenspan, Chairman, Bd. of Governors of the Fed. Reserve Sys.).

I. NATURAL GAS DEMAND: CAUSES & IMPACTS

This section provides a brief summary of natural gas use in the U.S., describes the causes that have led to the dramatic increase, and details specific impacts on the natural gas residential users and businesses as a result.

Natural Gas Use

Natural gas has traditionally been an important fuel choice for certain uses, but its role has increased significantly in the last twenty years.² Today, natural gas comprises 24% of U.S. energy use (see chart), with most of that increase attributed to the electricity generation sector.³ In fact, experts project that natural gas-fired electricity generation will nearly double in the next decade. Almost all new power-generating capacity coming on line in the U.S. is gas-fired, and one half of new homes are now heated by gas.⁴



This increased demand for natural gas, when combined with other factors, leads to high and volatile prices. Historically, the single greatest factor affecting natural gas demand is the one which policymakers and gas users have the least ability to influence – the weather. Volatility in natural gas prices typically fluctuate with changes in weather conditions.⁵ Residents increase their energy use to accommodate extremes in hot or cold.⁶ Therefore, in colder or more northern regions of the country increases in natural gas reflects the very basic human need for survival.

However, “[t]he seasonal pattern of natural gas demand is being altered by

² COMM. ON NATURAL GAS, DEMAND TASK FORCE REPORT, BALANCING NATURAL GAS POLICY: DEMAND 2-3 (Sept. 2003) [hereinafter Demand Report].

³ *Id.* at 2-4 to 2-5.

⁴ *Hearing on Enhancing Energy Security Before the House Comm. on Res.*, 108th Cong. (March 19, 2003) (statement by Raj Gupta, Chairman and CEO, Rohm & Haas Co. on behalf of the Am. Chemistry Council).

⁵ AM. GAS ASS’N, AVOIDING THE WILD RIDE: WAYS TO TAME NATURAL GAS PRICE VOLATILITY 6-7 (Nov. 2003) [hereinafter AGA].

⁶ *Natural Gas and Supply Issues Before the House Comm. on Energy and Commerce*, 108th Cong. (June 10, 2003) (testimony of Guy Caruso, Administrator Energy Information Administration) (“One development that could generate more difficult market conditions than are already in prospect is the weather. An abnormally hot summer followed by a cold winter could push natural gas deliverability to the limit and cause record average prices this winter.”).

its growing use by electrical power generators. Power generators expanded their demand for natural gas by 36% over the period 1997-2000.”⁷ The Energy Information Administration found that between 2000 and 2003, 93 percent (187 gigawatts) of new generation capacity was gas-fired.⁸

Although the figures above provide a national perspective, it is important to note that some States rely on natural gas more heavily than others. For example, the State of California consumes approximately 6 to 10 billion feet of natural gas per day. “If California were a country, it would rank as the tenth largest user of natural gas worldwide.”⁹

This dramatic increase in natural gas use by the generation sector has created price pressure for all users of natural gas. That competition for gas by generators resulted in wholesale prices from about \$2 per million Btu (MMBtu) during the 1980s up to \$10 per MMBtu during the winter of 200-2001.¹⁰

Power generation demand for natural gas is the fastest growing segment of the market and is expected to provide the greatest increment of gas demand for at least the next decade.¹¹ The California Energy Commission expects that natural gas demand for electricity generation will grow 1.5 percent per year through 2013.¹² Nationally, the Energy Information Administration forecasts that if current trends continue, 80% of new electricity generation will be fueled by natural gas.¹³ “Today, gas is the source of about 15 percent of all electricity generated but this number is projected to increase to 26 percent by 2020.”¹⁴

One may consider the rise in natural gas use as a relatively good development; natural gas is regarded as the cleanest burning fossil fuel and is therefore preferred over other sources, and is especially championed by environmental groups.¹⁵

⁷ Robert Pirog, *Natural Gas Prices & Market Fundamentals*, Cong. Research Serv., Dec. 8, 2004 at 7 [hereinafter Pirog].

⁸ Mary O’Driscoll, *Higher fuel Prices Shifting Power’s Attention to Coal*, GREENWIRE, Apr. 27, 2004 (“By comparison, 5 new gigawatts of new capacity came from wind farms while coal saw only 1 gigawatt in additional capacity.”).

⁹ CAL. ENERGY COMM’N, REPORT OF THE STAFF, NATURAL GAS ASSESSMENT UPDATE (Feb. 2005) [hereinafter California Report].

¹⁰ AGA, *supra* note 5, at 6–7. The natural gas Henry Hub spot price is currently hovering above \$7 per MMBtu, *see* the Energy Information Administration’s weekly natural gas update, *available at* <http://tonto.eia.doe.gov/oog/info/ngw/ngupdate.asp>.

¹¹ AGA, *supra* note 5, at 12.

¹² *See* California Report, *supra* note 9, at 10.

¹³ Pirog, *supra* note 7.

¹⁴ Paul Wilkinson, Chris McGill, Kevin Petak & Bruce Henning, *Natural Gas Outlook to 2020* at 16, Am. Gas Found., Feb. 2005 [hereinafter Gas Foundation].

¹⁵ For example, the Union of Concerned Scientists state, “[a]lthough natural gas is a fossil fuel and so is made up mostly of carbon, global warming emissions from gas are much less than coal or oil. Compared to coal, gas produces 43 percent fewer carbon emissions for each unit of energy produced, and 30 percent less than oil. Gas also produces no solid waste, unlike the massive amounts of ash from a coal plant, and very little sulfur dioxide and particulate emissions.” *See* CLEAN ENERGY: HOW NATURAL GAS WORKS, *available at* http://www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=84.

Impacts of High Natural Gas Prices

Individuals

Although natural gas may be an environmentally friendly choice over other sources, dramatic increases in the price of natural gas have had significant and detrimental impacts on the U.S. economy as a whole, and consumers and workers specifically.

As detailed, increases in natural gas demand, have increased the price of gas for all users. Yet, energy use is not typically an optional or luxury good. In an industrialized and globally competitive world, energy use represents a very real and fixed cost of doing business and more fundamentally, of life. Consumers and businesses have moderated and may continue to moderate their energy use marginally, but in the end, they require energy for survival. More simply, energy is not a luxury; it is a necessity.

High natural gas prices hurt all consumers because “energy prices act like a tax on consumers.”¹⁶ By paying a de facto “energy tax” consumers have less money to spend or to invest. According to the Industrial Energy Consumers of America since June 2000, consumers have paid nearly \$200 billion more for natural gas than they paid in the previous five years.¹⁷ In macro terms, “[w]ith disposable income running around \$8-1/2 trillion, the ‘energy tax’ is now roughly 1 percent of after-tax incomes and rising.”¹⁸

The increased price of natural gas has very real impacts on families. For example, in Ohio, home heating costs were projected to increase at least \$220 per household.¹⁹ Although that may seem like a nominal amount, during the winter season of 2000-2001, one gas company in Ohio saw residential nonpayment jump from \$10 million a year to \$26 million, resulting in 50 percent increase of residential customers who were disconnected from gas service.²⁰ Mr. Donald Mason, Commissioner of Ohio’s Public Utilities Commission, put the numbers into human terms:

It is hard to measure the suffering that takes place to a family that has high heating bills; only to have their hot water and heating disconnected, which could even occur during the summer months. Additionally, those families that do manage to make payments, substitute those payments for other important items, or delay paying other bills. Either outcome affects consumer credit and family stability.²¹

The human toll associated with high natural gas prices is felt all across the nation. In New England, homeowners spent \$400 (from \$900 to \$1300) more to heat their homes from the

¹⁶ MORTGAGE BANKERS ASS’N ECON. COMMENTARY, RISING ENERGY PRICES: A QUANDARY FOR THE FED, Issue 116 (June 2004), available at <http://www.mortgagebankers.org/marketdata/econ.comm/ec0604.html>.

¹⁷ Letter from the Energy Consumers of America to Secretary Gale Norton (Mar. 28, 2005).

¹⁸ *Supra* note 16.

¹⁹ *Hearing on Natural Gas Supply and Demand Issues Before the House Comm. on Energy and Commerce*, 108th Cong. (June 10, 2003) (testimony of Donald L. Mason, Comm’r Pub. Util. Comm’n of Ohio).

²⁰ *Id.*

²¹ *Id.*

winter of 2002 to winter of 2003.²² Experts project that in colder climates like the northeast, households could pay upwards of \$1700 to heat their homes.²³

Like most taxes, the rise in natural gas prices most heavily hit people on fixed or near fixed incomes like the elderly and low-income residents. According to the Census Bureau, there are more than 3.6 million impoverished elderly in the U.S.²⁴ Mr. Jim Martin, President of 60 Plus Association stated that high natural gas prices, “not only endangers our economy, it is especially threatening to America’s seniors who are struggling to make ends meet.”²⁵ Elderly Americans are particularly vulnerable because, “[s]eniors on fixed incomes must somehow stretch finite dollars to cover increasingly costly basic needs.”²⁶ In effect, they are forced to choose between paying for food, energy, or pharmaceuticals. Yet, high natural gas prices are not solely evidenced in heating or electricity bills, Mr. Martin wisely noted that, “natural gas is essential to produce foods, medicines and a host of necessities ... and is likely even embedded in many of the utensils and TV trays that rest upon our kitchen tables.”²⁷

Businesses

High natural gas prices act as a multiplier for the relative costs on domestically produced products. Ultimately, this is reflected in higher prices charged to consumers. Natural gas is used as a fuel or feedstock for industrial use. It powers our factories, furnaces, and is a necessary chemical component for hundreds of products. All consumers feel the financial pinch of high natural gas prices “as higher input costs are absorbed into production for all sorts of products.”²⁸ Therefore, high natural gas prices increase the costs of production, providing gas-dependent industries a very difficult choice: close down domestic operations or temporarily incur the increased prices and hope prices come down.

The degree to which natural gas prices have affected businesses is challenging to describe in terms that most people can appreciate. Yet, one trade association found that it would be as if a household suddenly had to pay \$16 gallon of milk, \$12.70 pound of ground beef, and \$9.21 gallon of gasoline.²⁹

²² GLOBAL INSIGHT, INC. FOR THE AM. CHEMISTRY COUNCIL, THE IMPACT OF HIGH GAS PRICES ON JOBS, THE ECONOMY AND CONSUMERS 5 (June 2003).

²³ *Id.*

²⁴ *Hearing on Energy Supply and the American Consumer Before the House Subcomm. on Energy & Mineral Res. of the House Res. Comm.*, 108th Cong. (Feb. 12, 2004) (testimony of Jim Martin, President, 60 Plus Ass’n).

²⁵ Jim Martin, *Natural Gas Price Shock*, WASH. TIMES, Nov. 14, 2004, available at <http://www.60plus.org/energy.asp?docID=444>.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Hearing on Energy Supply and the American Consumer Before the House Subcomm. on Energy & Mineral Res. of the House Res. Comm.*, 108th Cong. (Feb. 12, 2004) (testimony of David Velazquez, Vice President, Business Planning for Conectiv Energy for the Edison Electric Institute).

²⁹ See The Am. Chemistry Council, available at <http://accnewsmedia.com/site/page.asp?TRACKID=&VID=&CID=253&DID=974&PSID=&KID=90&KCID=253>.

High natural gas prices have hurt businesses small and large. “In Connecticut, for example, pizza shops complain that their natural gas bills have increased \$500-700 per month.”³⁰ Small businesses typically operate on thin profit margins and do not have significant financial cushions to incur new costs. They likely pass those higher prices on to their customers who may or may not be willing to pay more for the same pizza or else go out of business.

Manufacturers

On April 5, 2005, Alan Greenspan, Chairman of the Federal Reserve noted, “U.S. natural gas prices since late 2002 have been notably higher, on average, than prices abroad, thereby putting significant segments of North American gas-using industry in a weakened competitive position.”³¹

In the case of large domestic businesses, such as manufacturers, the effect of natural gas prices is even more complicated and acute. These companies compete in a global marketplace where labor costs are a fraction of those in the U.S., and where environmental requirements may be non-existent. U.S. manufacturers have successfully worked within the most stringent regulatory environment in the world, pay high wages, and still produce the best and most reliable products in history. However, the costs to produce those goods have risen so dramatically that factories are going bankrupt, temporarily or permanently mothballing their facilities, or otherwise laying off large contingents of their labor force. The principal reason for this tragic turn in the high paying manufacturing sector, the historic backbone of the U.S. economy: high natural gas prices.

The U.S. industrial or manufacturing sector represents a diverse and wide number of companies. As such, understanding the precise effect that high natural gas prices have on those companies is complicated. Regardless of a particular company’s characteristics higher natural gas prices alone changes the competitive environment for many industrial consumers.³²

According to the National Association of Manufacturers industries that rely on natural gas include chemicals, fertilizer, food processing, aluminum recycling, glass making, steel casting, and metal heat treating.³³ The following six industries in particular account for 80 percent of industrial natural gas: chemicals, petroleum refining, primary metals, food and

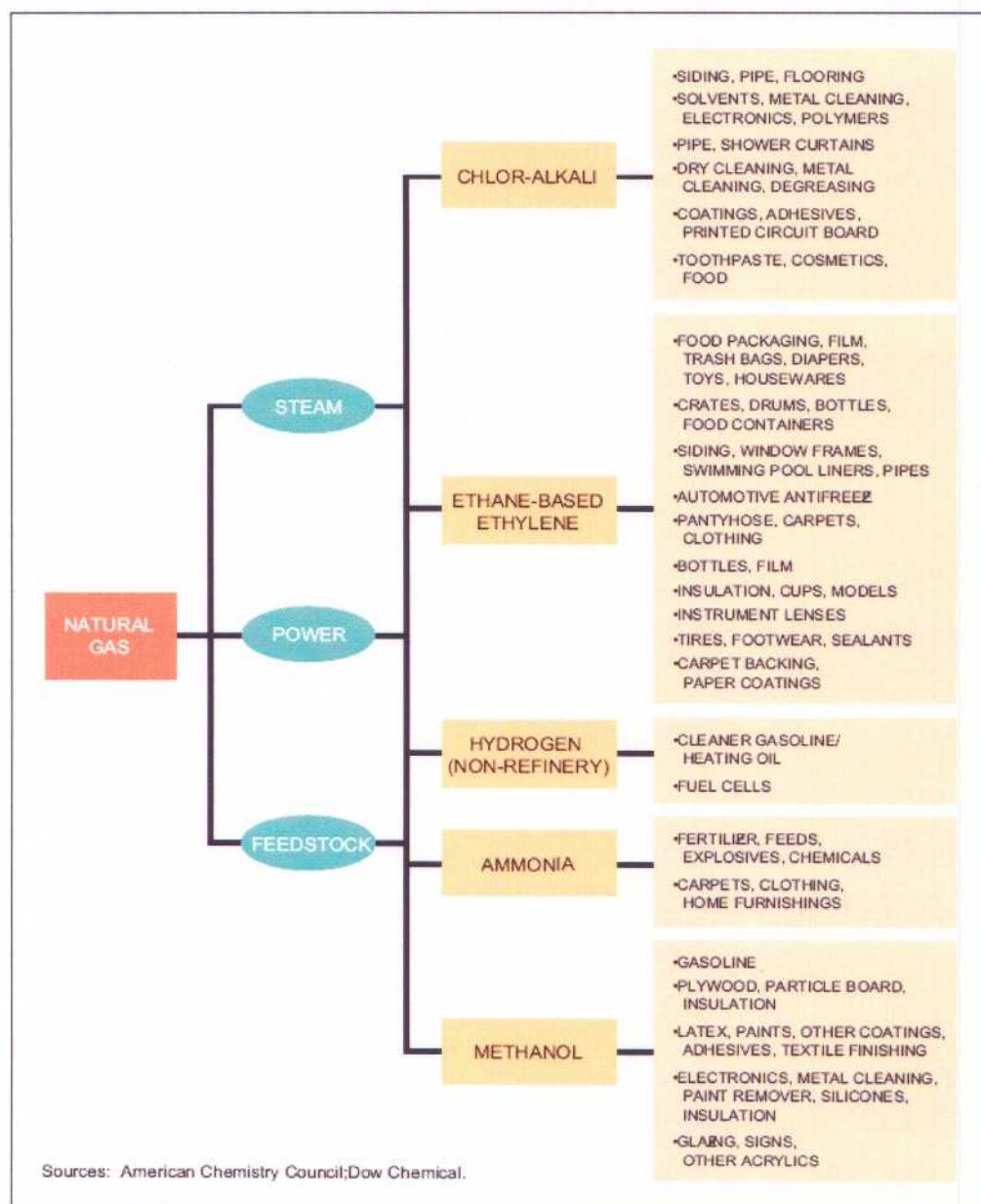
³⁰ *Hearing on Energy Supply and the American Consumer Before the House Comm. on Energy and Commerce*, 108th Cong. (June 10, 2003) (testimony of Carl L. English, President and Chief Executive Officer, Consumers Energy, on behalf of the Am. Gas Ass’n).

³¹ Chairman Alan Greenspan, Remarks before the Nat’l Petrochemical & Refiners Ass’n (Apr., 5, 2005), (“Indeed, ammonia and fertilizer plants in the United States have been particularly hard hit as the costs of domestic feedstocks have risen relative to those abroad.”), *available at* <http://www.federalreserve.gov/boarddocs/speeches/2005/20050405/default.htm>.

³² Demand Report, *supra* note 2, at 3-1.

³³ See NAT’L ASS’N OF MFRS., *INDUSTRY AND THE ECONOMY NEED MORE NATURAL GAS SUPPLY* (Mar. 2003), *available at* http://www.nam.org/s_nam/doc1.asp?CID=141&DID=225963.

beverage, paper, and non-metallic product industries (stone, clay, and glass).³⁴ The chart below depicts how natural gas is used by industrial users both as a feedstock and fuel.



One might consider that a proper market response of higher production costs would simply be higher prices. However, these six gas-intensive domestic industries face intense international competition that has serious implications on their viability.³⁵ “Because the current gas pressures are most intense in North America, U.S. exports are relatively more expensive on the world market.”³⁶ Further, global market competition means that U.S.

³⁴ Demand Report, *supra* note 2, at 3-4.

³⁵ *Id.* at 3-1.

³⁶ *Supra* note 22, at 4.

companies are unable to pass these added costs for natural gas along to their customers if their products are to remain competitively priced with those produced by our foreign competitors.³⁷

Natural gas prices have serious implications far beyond companies' ability to earn profits. In fact, high natural gas prices so seriously increase production costs that manufacturers' very survival is in jeopardy.

Glass manufacturers, which use large amounts of natural gas, have reported earnings falling by 50% as a result of natural gas prices. In our industrial and commercial sector, competitiveness in world markets and jobs at home are on the line.³⁸ With respect to the chemical manufacturing industry, every one-dollar increase in the price of natural gas, over the course of a year translates to approximately \$4.2 billion in additional costs.³⁹ According to the American Chemistry Council's testimony submitted for the Environment Committee's March 2004 hearing on natural gas issues, "In the past five years, the U.S. chemical industry lost \$50 billion to foreign competition."⁴⁰ To put that into perspective, "[a]ffordably-priced natural gas helped make chemicals the nation's largest export industry" which helped sustain hundreds of thousands of high paying jobs.⁴¹ Today, largely due to high natural gas prices, the U.S. has become a net importer of chemical products.⁴²

In explaining the erosion of the U.S. chemical manufacturing industry to global competitors, R. William Jewell, vice president for energy at Dow Chemical stated, that "[w]e have the highest natural gas prices in the industrialized world."⁴³

Note, Mr. Jewell focused on "the industrialized world" rather than poor or developing nations, which are typically raised when discussing the implicit disparity of international competition. "The Dow Chemical Company moved 1.4 billion pounds of production from the U.S. to Germany in large part because of high energy costs. For the first time in the history of our industry, energy costs in Europe are substantially below those in the U.S., leaving domestic industries at a disadvantage."⁴⁴

³⁷ *Supra* note 4.

³⁸ *Supra* note 30.

³⁹ *Supra* note 4.

⁴⁰ *Hearing on Natural Gas Supplies & the Env't Before the Senate Comm. on Env't & Pub. Works*, 108th Cong. (Mar. 24, 2004) (testimony of the Am. Chemistry Council).

⁴¹ *Id.*

⁴² *Id.*

⁴³ Greg Schneider, *Chemistry Industry in Crisis*, WASH. POST, Mar. 17, 2004, at E01.

⁴⁴ *Supra* note 4.

The map below illustrates Mr. Jewell's point that too many unemployed workers learned the hardest of ways.

Natural Gas Costs around the World (\$US per million BTUs)



The disparity between high U.S. natural gas prices versus the rest of the world has meant widespread worker lay-offs. "Across the country, 1 in every 10 chemical-related jobs has vanished in the past five years --- nearly 100,000 workers."⁴⁵

The chemical industry is far from alone in their struggle to stay afloat in a high natural gas priced environment. The U.S. forest and paper industry, which employs 1.3 million people, has been hard hit as well. The American Forest & Paper Industry "has lost more than 120,000 high paying manufacturing jobs and closed more than 220 plants."⁴⁶

That most American of all industries, farming, has been hurt badly as well. The cost of natural gas accounts for up to 90 percent of the total costs of manufacturing fertilizer. In a report to Congress, the U.S. General Accounting Office found that, "[u]nfortunately for domestic nitrogen fertilizer manufacturers, the price of natural gas in the United States can far exceed its price in other parts of the world ... domestic manufacturers are at a competitive disadvantage when domestic natural gas prices rise."⁴⁷

⁴⁵ *Supra* note 41.

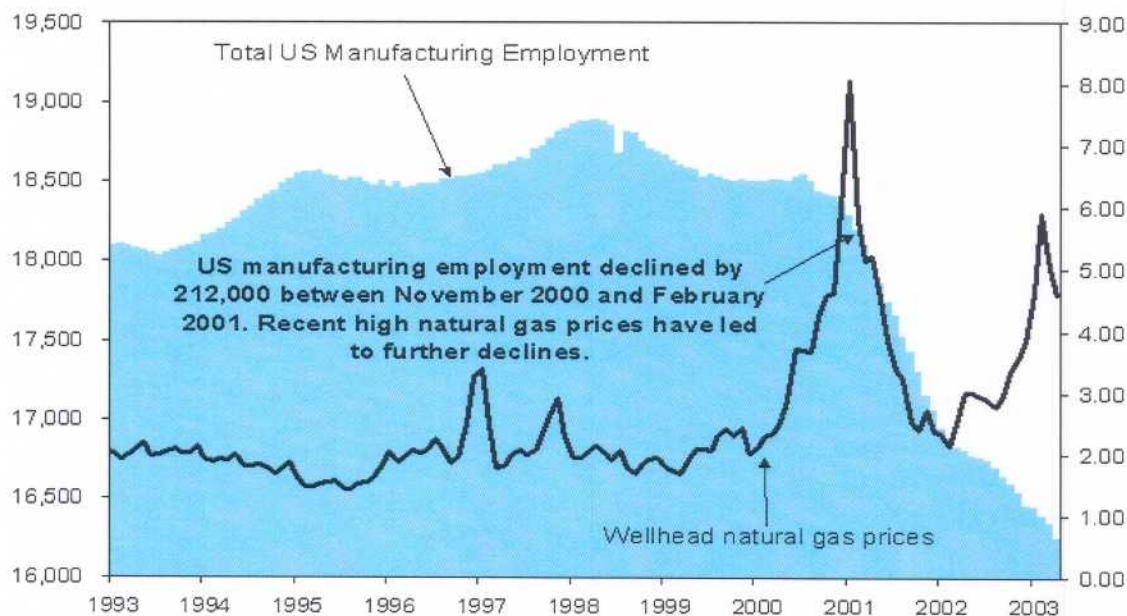
⁴⁶ *Hearing on Energy Supply and the American Consumer Before the House Subcomm. on Energy & Mineral Res. of the House Res. Comm.*, 108th Cong. (Feb. 12, 2004) (testimony of James Rubright, Chairman & CEO, Rock-Tenn Co. on behalf of the Am. Forest & Paper Ass'n).

⁴⁷ U.S. GEN. ACCOUNTING OFFICE, GAO-03-1148, NATURAL GAS: DOMESTIC NITROGEN FERTILIZER PRODUCTION DEPENDS ON NATURAL GAS AVAILABILITY AND PRICES, 19 (Sept. 2003).

At my hearing, Bob Drake of the Oklahoma Farm Bureau stated that high natural gas prices have “cost U.S. farmer and ranchers an extra \$2.6 billion to produce the same amount of food and fiber in 2003 when compared to the 2002 growing season.”⁴⁸ As is the case with domestic chemical plants, U.S. fertilizer plants have been forced to shut down. Since 2000, 11 ammonia nitrogen fertilizer plants representing 21 percent of domestic capacity and an additional 15 to 20 percent of the fertilizer industry is temporarily shuttered.⁴⁹

For an economist, the effect of U.S. gas-dependent industries appears as an economic phenomenon known as, “demand destruction.” According to natural gas usage data, demand may appear to have decreased from one year to the next due to a harsh truth: the source of that demand – the manufacturing plant – has shutdown.

In analyzing the effects on the manufacturing sector in the winter of 2001, Dr. Jeffrey R. Currie, Managing Director of Goldman, Sachs & Co. concluded that “[t]he loss in industrial demand was massive: a 20% permanent decline that resulted in the loss of at least 200,000 manufacturing jobs⁵⁰ The chart below demonstrates the relationship between increases in natural gas prices and the corresponding reduction in U.S. jobs.



⁴⁸ *Hearing on Envtl. Impacts of U.S. Natural Gas Production Before the Senate Comm. on Env't & Pub. Works*, 108th Cong. (Mar. 24, 2004) (testimony of Bob Drake, Vice President, Oklahoma Farm Bureau).

⁴⁹ *Hearing on the Impact of High Natural Gas Prices on Small Farmers and Manufacturers Before the House Subcomm. on Rural Enter., Agric. & Tech.*, 108th Cong. (Sept. 22, 2004) (testimony of Hal Swaney, Missouri Farm Bureau Fed'n).

⁵⁰ *Hearing on Natural Gas Supply and Demand Issues Before the House Comm. on Energy and Commerce*, 108th Cong. (June 10, 2003) (testimony of Jeffrey R. Currie, Managing Director, Goldman, Sachs & Co.).

Why has Natural Gas Demand Increased So Dramatically?

As stated earlier, natural gas prices have increased as demand, mostly in the electricity generation sector, has increased. The U.S. historically relied on coal as the principal fuel for electricity generation. The national economy grew significantly and with that growth U.S. businesses and homes demanded more energy. However, federal air quality regulations along with other environmental regulations promoted the use of natural gas as a cleaner generating fuel than coal and less controversial than nuclear.⁵¹

The environmentally driven preference for natural gas over coal has occurred irrespective of more traditional market-based rationales. For example, according to the Industrial Energy Consumers of America, “as a power generation fuel, coal is more reliable than natural gas because several months of coal supply can be stored on site, while natural gas is only reliable so long as gas flows.”⁵²

Regardless of the relative merits of coal, environmental policies seemed to have dictated fuel choice in the generation of electricity. The Congressional Joint Economic Committee found that, “environmental laws passed in the 1980s and 1990s, and their subsequent regulations, encouraged utilities to use clean burning natural gas rather than coal or oil.”⁵³

The Clean Air Act Amendments of 1990 (CAAA) substantially changed the way in which air emissions were regulated. The CAAA were primarily focused on reducing sulfur dioxide (SO₂) and nitrogen oxide (NO_x) emissions from electric power plants, and to a lesser extent, industrial and transportation sources. To comply with the new mandates, “generators turned to natural gas, either by switching existing facilities from other fuels to gas or investments in new, gas-only equipment.”⁵⁴

In fact, 90 percent of new power plants are gas-fired in large part as a result of government environmental policies.⁵⁵ The charts on the next page illustrate how natural gas-based generation increased dramatically relative to coal after the Clean Air Act Amendments of 1990.

⁵¹ “Air quality regulation and uncertainty are the biggest environmental issue facing the power industry that will ultimately affect natural gas demand, however, the power industry also faces substantial challenges in water quality, solid waste disposal, and the spent nuclear waste disposal issue.” Demand Report, *supra* note 2, at 5-14.

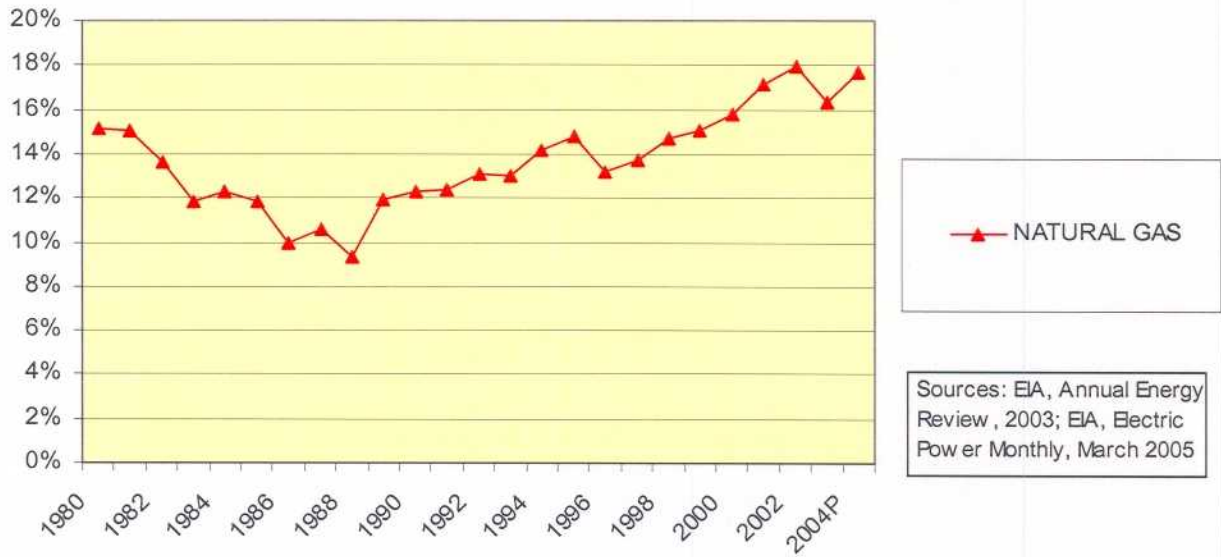
⁵² Paul Ciccio, *46 Month Natural Gas Crisis has Cost U.S. Consumers Over \$130 Billion*, Indus. Energy Consumers of Am., WHITE PAPER, Mar. 23, 2004 at 4.

⁵³ JOINT ECONOMIC COMM., THE PRESSURES ON NATURAL GAS PRICES (Oct. 6, 2004).

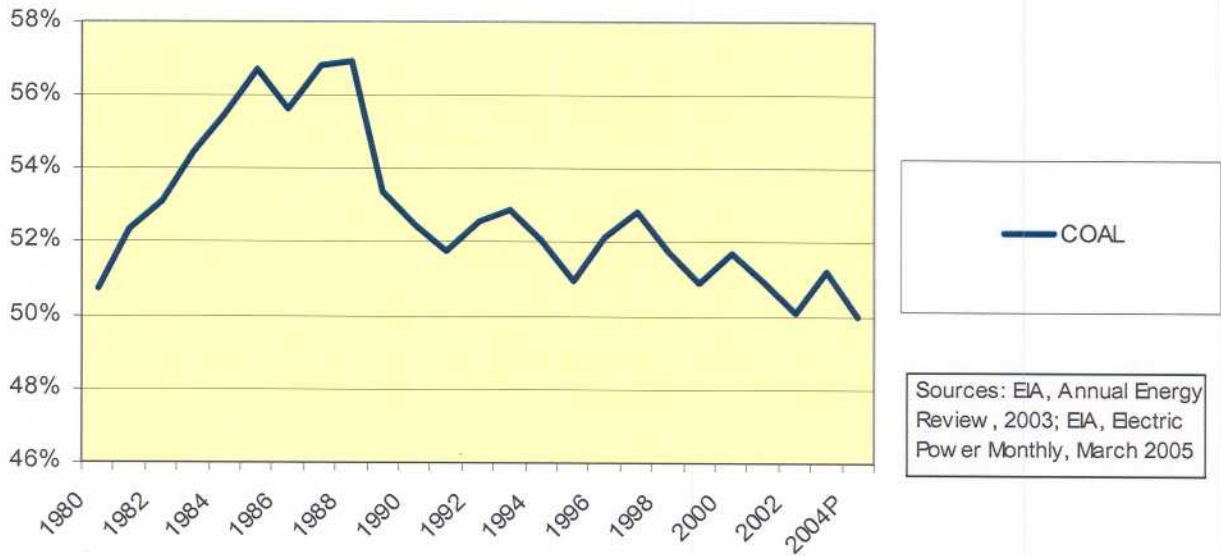
⁵⁴ Demand Report, *supra* note 2, at 6-5.

⁵⁵ U.S. HOUSE OF REP., REPORT BY THE TASK FORCE FOR AFFORDABLE NATURAL GAS (Sept. 2003), available at http://www.nei.org/documents/Congressional_Report_Natural_Gas.pdf.

Natural Gas Share of Total Generation, 1980 - 2004



Coal Share of Total Generation, 1980 - 2004



Some states' percentage of natural gas-dependent electricity is closer to 100 percent, and many of those states today are starving for more natural gas, no matter the price. For example all of California's power plants since 1998 have been natural gas-fired facilities.⁵⁶ California's Energy Commission concluded that natural gas has allowed power plant developers "to meet local air quality regulations that implement the federal Clean Air Act."⁵⁷

Implementations of the EPA's current regulations, such as New Source Review among others, have also driven the electricity generation industry away from coal and toward natural gas to meet customers' needs. This effect is difficult to quantify because the Energy Information Agency does not include the potential impact of proposed regulations such as the EPA's Clean Air Interstate and Clean Air Mercury rules in considering its projections.

Supply

The U.S. natural gas market may appear to be unable to correct itself since supply has yet to meet increased demand. Indeed, "a supply constrained market will hunt down and kill the incremental demand necessary to balance. Price is an effect, not the cause."⁵⁸ According to the American Gas Foundation, today's gas market is "supply-constrained – that is, domestic gas production is at or near 100 percent of [potential] production."⁵⁹

This begs the question: Does the U.S. have abundant natural gas resources?

The answer is unequivocally and unconditionally yes. The United States has abundant natural gas resources. According to the National Petroleum Council, using today's technology, the U.S. alone has 1,451 trillion cubic feet and North America's resource totals 1,969 TCF of natural gas.⁶⁰

Considering that the U.S. has a significant natural gas resource base, why then is the market supply constrained?

⁵⁶ California Report, *supra* note 9, at 11.

⁵⁷ *Id.*

⁵⁸ *Before the House Subcomm. on Energy & Minera Res. of the House Res. Comm.*, 108th Cong. (Feb. 11, 2004) (testimony of Guy H. Ausmus, Chairman, American Steel Institute) (speaking on the effect of demand destruction).

⁵⁹ Gas Foundation, *supra* note 14, at 32.

⁶⁰ NAT'L PETROLEUM COUNCIL COMM. ON NATURAL GAS, BALANCING NATURAL GAS POLICY: INTEGRATED REPORT 110 (Sept. 2003) [hereinafter Integrated Report].

II. OBSTACLES TO MODERATING NATURAL GAS PRICES

According to the American Gas Foundation's February 2005 study, if current policies continue, natural gas prices will rise to nearly double what they are today in the next 15 years.⁶¹ As detailed earlier, the Nation has experienced widespread economic dislocation resulting from current high gas prices. It is critical that Congress act today to keep natural gas demand destruction from snowballing into economy-wide destruction.

As discussed in the preceding section, U.S. environmental policies, principally the regulation of air emissions, increased demand for natural gas. Section II will detail the environmental-based policies that have acted as artificial constraints on increasing supplies of natural gas.

Onshore

The United States has significant natural gas resources within the lower 48-States.⁶² In order to meet national demand for natural gas producers must explore beyond traditional locations. Traditional sources of gas are in mature basins, and therefore have experienced declining production.⁶³ Offsetting this decline will be increasing production from nonconventional resources, especially in the Rocky Mountains."⁶⁴

However, much of those nonconventional areas are the very same that have effectively been deemed off-limits. "[T]he trend towards increasing leasing and regulatory land restrictions in the Rocky Mountain region ... is occurring in precisely the areas that hold significant potential for natural gas production."⁶⁵

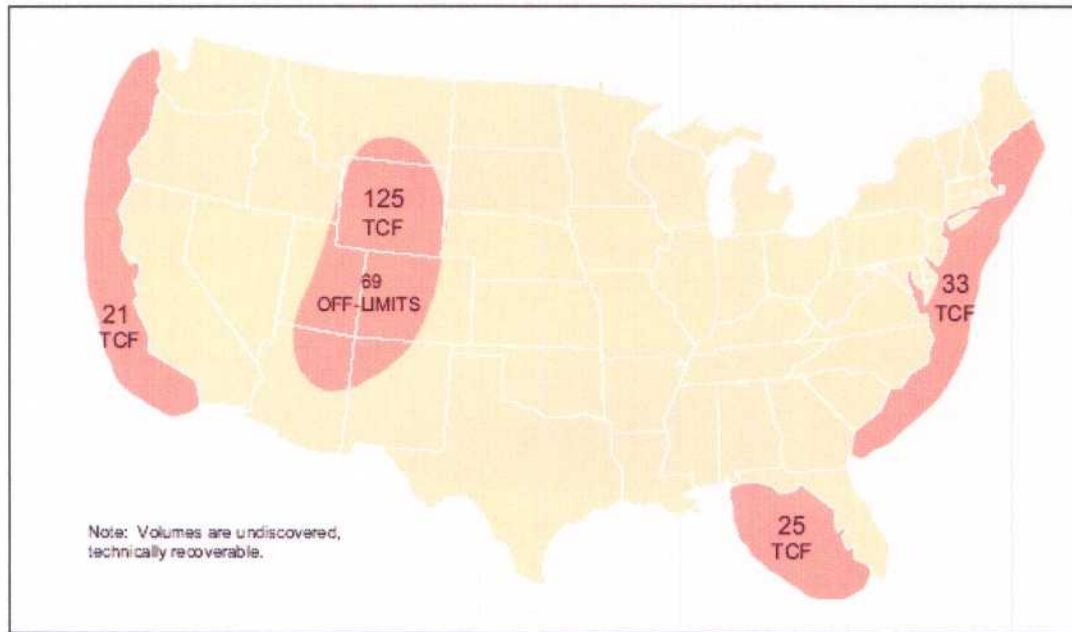
⁶¹ Prices rise to \$13.76 by 2020. Gas Foundation, *supra* note 14, at 33.

⁶² "There is ample supply to meet current demand for natural gas." See DOMESTIC PETROLEUM COUNCIL, NATURAL GAS: CLEAN ENERGY TO KEEP AMERICA GOING STRONG, available at <http://www.dpcusa.org/natural/pdf/access.pdf>.

⁶³ Integrated Report, *supra* note 60, at 121.

⁶⁴ *Id.*

⁶⁵ NAT'L PETROLEUM COUNCIL, BALANCING NATURAL GAS POLICY: SUMMARY 33 (Sept. 2003) [hereinafter Summary Report].



The Rockies contain 238 TCF of gas or 24 percent of the resource base in the lower-48.⁶⁶ Yet, as the map indicates, 69 TCF or 29 percent of that gas “is currently off-limits to exploration and development, either due to statutory leasing withdrawals or to the cumulative effects of conditions of approval associated with exploration and development activities.”⁶⁷ Further, there is either no access to or higher production costs to 125 TCF or over half of the Rockies total gas resource base.⁶⁸

According to Mr. Laurence Downes, Chairman of the American Gas Association, “America is not running out of natural gas, and it is not running out of places to look for natural gas. America is running out of places where we are *allowed* to look for gas.”⁶⁹

The reasons for such limited access to these critical gas resources are numerous and varied. Of course many public lands have bans on production activities, such as National Parks and designated Wilderness Areas. Other areas have been deemed “effectively off-limits” because the regulatory uncertainty prohibitively raises the costs of production. The following discussion shall be confined to areas that are “technically” available for multiple use activities, including natural gas production.

When a producer obtains a lease to explore and produce natural gas on public lands, oftentimes the lease includes stipulations. Lease stipulations often restrict activity to certain periods of the year or focus on particularly designated areas.

⁶⁶ NAT’L PETROLEUM COUNCIL, BALANCING NATURAL GAS POLICY: SUPPLY 6-1 (Sept. 2003) [hereinafter Supply Report].

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Before the House Subcomm. on Energy & Air Quality of the House Comm. on Energy & Commerce*, 109th Cong. (Feb. 16, 2005) (testimony of Laurence Downes, Chairman, Am. Gas Ass’n).

Lease Stipulations and Conditions of Approval

Lease stipulations and conditions of approval typically may be related to the presence of animal or bird species. The mere presence of a species during certain times of the year may limit or restrict a producer's proposed activity. However, those restrictions are routinely based on assumptions rather than facts. For example, a producer's activity could be restricted because the area may, within a six-month period, be used by mule deer. Therefore, the producer may only be permitted to explore or produce during the remaining six months of the year.

It is important to note that this restriction preventing any disturbance during a six-month window attaches regardless of what the actual impact on the deer may or may not be. In fact, such restrictions routinely apply without a prior finding of harm or even any scientific evidence demonstrating a probability of injury. For example, BLM began restricting certain types of drilling and construction operations of 380,000 acres of land in southeastern New Mexico from April through June to avoid disruptions to prairie chicken mating.⁷⁰ Only after the industry insisted on a scientific study of the issue did the BLM indicate that it would reduce the area to 196,000 acres.⁷¹

Further, during the permitting process for exploration and production activities on public lands, federal agencies will often require "conditions of approval." Conditions of approval are largely based in federal environmental law and may act as more of an impediment to exploration and development – through excessive delay in approval and increased costs - than the lease stipulations initially.⁷² Again, conditions of approval occur when a producer initiates the permit process to perfect the lease he already obtained. The development of conditions of approval attached to the permit is driven in large part by the National Environmental Policy Act, one of the first major environmental laws in the world.

The National Environmental Policy Act

The National Environmental Policy Act or NEPA was established in 1969 and is regarded as the U.S.'s basic charter for environmental protection. NEPA is a procedural statute designed to ensure that major federal actions consider the human environment. Today, the term "human environment" may sound strange to the listener since environmental discussions are often framed in human versus environment. However, NEPA's explicit goal is to "create and maintain conditions under which man and nature can exist in productive harmony."⁷³ Extending that concept further, the Council on Environmental Quality promulgated regulations states that "[h]uman environment shall be interpreted

⁷⁰ DEBORAH ELCOCK, ENVTL. ASSESSMENT DIV., ARGONNE NAT'L LAB., ENVTL. POLICY & REGULATORY CONSTRAINTS TO NATURAL GAS PROD. 36 (Dec. 2004) [hereinafter Argonne Report].

⁷¹ *Id.*

⁷² Integrated Report, *supra* note 60, at 178-179.

⁷³ National Environmental Policy Act of 1969, 42 U.S.C.A. 42 § 4331(a) (2004) [hereinafter NEPA].

comprehensively to include the natural and physical environment and the relationship of people with that environment.”⁷⁴

Therefore, NEPA was expressly designed so the federal permitting process would reflect the practical and real relationship that exists between environmental and human goals. That process driving the decision-making was intended to respect and work within that relationship. However, in practice, a wedge has been driven between the human and the environment. The mutual relationship so carefully balanced in regulation and in NEPA itself has been broken apart. Today, “the overall welfare and development of man”⁷⁵ is portrayed by many special interest organizations as a goal that acts to the detriment of “maintaining environmental quality.”⁷⁶

Adding to the discord and inefficiency of resource development is the fact that federal agencies have not implemented NEPA in a consistent and integrated way. Depending on the proposed project, an assortment of federal agencies may often have some form of jurisdiction, authority, or consultative role in permitting. Yet, those same agencies may have different timetables, requirements, and statutory missions that lead to inconsistent and uncertain decision-making.⁷⁷ For example, BLM was prepared to issue new leases for a project in Wyoming, but at the last moment, the U.S. Fish and Wildlife Service reported that it had not completed its required assessments and would delay the issuance.⁷⁸ “The lack of coordination and cooperation between two divisions within the single Department delays access to much-needed natural gas supplies.”⁷⁹

Opponents of natural gas exploration and production have effectively used the inconsistent determinations and lack of coordination between federal agencies to thwart the process. The NEPA process has become a tool used by opponents to create uncertainty and ultimately delay, if not outright halting proposed projects. “Opponents of development understand that NEPA ... offer opportunities for delay. Delay in making decisions can have critical impact on development.”⁸⁰ For opponents of oil and gas exploration and production, delay is the name of the game.

⁷⁴ 40 CFR § 1508.14 (2005) Further, “[w]hen an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.” *Id.*

⁷⁵ NEPA, *supra* note 73.

⁷⁶ *Id.*

⁷⁷ See THE NEPA TASK FORCE REPORT TO THE COUNCIL ON ENVIRONMENTAL QUALITY, MODERNIZING NEPA IMPLEMENTATION 24–34 (Sept. 2003).

⁷⁸ Argonne Report, *supra* note 70, at 63.

⁷⁹ *Id.*

⁸⁰ INDEP. PETROLEUM ASS’N OF AM., DEVELOPING DOMESTIC NATURAL GAS SUPPLY 3 (2005), available at <http://www.ipaa.org/meetings/NaturalGasConference.pdf> [hereinafter IPAA].

If the borrower cannot satisfactorily demonstrate certainty, then he/she will not obtain financing for the venture. “[T]his NEPA process ... has become the principal tool used by obstructionists to delay or halt natural gas development.”⁸¹

By delaying the NEPA-related permitting process, the obstructionist creates that uncertainty and thereby manufactures financial risk. In order to obtain financing for a venture – personal or business – a bank, lending institution or investor requires the likelihood of a return within a time certain. “Producers must reinvest their capital continuously and cannot allow it to stagnate because of permitting delays.”⁸² In testimony before the Committee on Environment & Public Works, Mike Caskey, Vice President and Chief Operating Officer for Fidelity Exploration and Production put it another way:

Imagine the owner of any other business, who obtains all the permits necessary to conduct business, sets up an office, invests in hiring workers and makes a commitment to buy equipment, supplies and start-up needs and isn’t allowed to conduct business because of frivolous litigation that targets the well-established licensing process.⁸³

Some special interest groups are so focused on their own agendas that they refuse to acknowledge facts that do not fit in with their own parochial interests. The Committee on Environment & Public Works heard from a diverse group of natural gas interests, but especially from businesses, farmers, and a Governor fearful that their jobs and economies are in jeopardy due to the natural gas crisis. After hearing from several witnesses who have experienced job losses, a lawyer for the Southern Utah Wilderness Alliance (SUWA), Stephen Bloch, testified against exploration and production of natural gas in certain areas.

SUWA, like some other special interest groups made sensational statements counter to the facts. After reading much testimony and listening repeatedly to baseless claims, I chose to ask Mr. Bloch directly about his organization’s position. A portion of the Committee’s transcript is below:

Senator Inhofe. Mr. Bloch, your website refers to our state of affairs as "the fabricated energy crisis." What do you mean by "fabricated energy crisis." Do you think it is not real?

Mr. Bloch. No, Senator; I think SUWA and the conservation community is as concerned as everyone you have heard from already at this hearing. I think our

⁸¹ *Before the Senate Comm. on Env't & Pub. Works*, 108th Cong. (Mar. 24, 2004) (testimony of Mike Caskey, Vice President and Chief Operating Officer, Fidelity Exploration & Production Co.) [hereinafter Caskey].

⁸² *Id.*

⁸³ *Id.*

concern the use of the so-called "crisis" to lift some of the important environmental protections afforded by statutes, such as NEPA, to lift the protections of those statutes and to allow for an expedited process, starting from the leasing stage all the way to production. That is going to cause significant environmental damage as a result. So I think that is our concern.

It is clear that Mr. Bloch is trying to evade the very simple question, so I continued:

Senator Inhofe. Do you believe there is an energy crisis?

Mr. Bloch. I think I would agree with the other statements made today that there seems to be shortages of natural gas in some of the places where it is needed most.

Again, Mr. Bloch painfully tries to minimize his organization's irresponsible position, but I was determined to get a proper answer. My friend Bob Drake from the Oklahoma Farm Bureau had testified just a few moments before how high natural gas prices are eroding America's ability to grow food and fiber.

Senator Inhofe. So there is an energy crisis? Yes or no?

Mr. Bloch. It certainly appears that way from what we have heard.

Ohio's Senator Voinovich had listened to testimony from a manufacturer in his state that was experiencing tremendous strain, with the likelihood of closing operations directly due to high natural gas prices. Like me, Senator Voinovich wanted this special interest group to explain its position.

Senator Voinovich. I had the same concern. On your website you mentioned "fabricated energy crisis." Were you here this morning for the testimony?

Mr. Bloch. Yes, I was, Senator.

Senator Voinovich. After hearing that testimony, would you say that there really is an energy crisis?

Mr. Bloch. As I indicated earlier, I would agree that all the speakers indicated that there is a crisis.

This brief look into just one of so many special interest groups demonstrates the lengths they are willing to go, by misrepresenting and refusing to acknowledge the fact in the

interest of their own agendas. Only after quite literally facing people on the brink of going out of business did SUWA acknowledge the unfortunate fact – we are indeed experiencing an energy crisis. In all fairness, after our hearing, SUWA changed its website.

The concern over litigation is so grave that environmental impact statements are now routinely collected in multiple volumes rather than just pages.⁸⁴ Yet, the plain language of NEPA's regulations directs agencies to reduce paperwork and background data and even provide summaries.⁸⁵

Federal agencies are so concerned with challenges and related litigation that their permitting actually may be violating the very Act and regulations that establish the permitting process itself. The fact is that NEPA's intent, as established in the black letter of the law and regulations, is not being carried through. Rather, litigation and court decisions determine the intent of NEPA and requirements for compliance.⁸⁶

Rather than work toward proper and useful environmental analysis that improves agency decision-making, "NEPA has become an end unto itself."⁸⁷ Federal agency personnel know that the information they use go far beyond the requirements in the Act and implementing regulations, but they feel the need to "litigation-proof" their environmental analysis and review. Fearful of litigation, federal officials often require environmental impact statement at the outset even when no significant impacts have been found.⁸⁸

The irony, of course, is that the public is harmed many times over by the misuse of the very process designed to provide public participation. The public has implicit and explicit rights to comment and participate in public land use decisions. However, that "participation" all-too-often seems to mean litigation. Litigation forces agency personnel to "litigation-proof" their documentation by drafting multivolume EISs. Yet, such documentation is effectively impenetrable and virtually inaccessible by the vast majority of the public.

Endangered Species Act

The Endangered Species Act or ESA is under considerable scrutiny for several reasons. Proponents of reform, such as the Western Governors Association have long called for a dialogue on the subject and proper implementation. The Environment & Public Works Committee is currently reviewing the Act and considering reform. With respect to ESA and natural gas exploration and production the challenges relate to citizen nominations for additions to the list of endangered or threatened species.

⁸⁴ IPAA, *supra* note 80, at 3.

⁸⁵ See *Reducing Paperwork*, 40 C.F.R. § 1500.4 (2005).

⁸⁶ Argonne Report, *supra* note 70, at 63.

⁸⁷ Supply Report, *supra* note 66, at 6-42.

⁸⁸ *Id.*

The problem is that there are no qualification requirements to nominate a species for listing. Any group or individual can file a petition to list without scientific data.⁸⁹ The result is that opponents of natural gas exploration and production take advantage of the liberal public participation provisions to stop activity. Obstructionists simply petition that a particular species should be listed as a protected species. Once a species is listed the species' habitat becomes effectively off-limits to exploration and production or any other activity that could result in a "take" of the species.⁹⁰

For example, several obstructionist groups petitioned the U.S. Fish & Wildlife Service that the Prebles meadow jumping mouse should be listed as an endangered species. Without proper and full scientific review, the USFWS designated the Prebles mouse and restricted 31,220 acres in Colorado and Wyoming and 359 miles of streams and rivers as designated habitat.⁹¹ The Service initially proposed double the critical habitat but concluded that the additional land was already under protections. The result of the "more reasonable proposal" drew ire from some. Eric Bonds, a spokesman for the Biodiversity Conservation Alliance stated, "I fear that the Fish and Wildlife Service has erred on the side of extinction."⁹²

After spending millions of research dollars to fund mitochondrial DNA studies, independent scientists concluded that the Prebles' is genetically indistinguishable from another common field mouse.⁹³ As a result of using well-grounded science, the USFWS is likely to de-list the Prebles mouse in short order. One would think that the groups concerned with species' survival would be pleased. Yet, the reaction from the Biodiversity Conservation Alliance demonstrated their true intent all along – control over the land: "This proposal is a devastating blow to open space across the Front Range."⁹⁴

Similarly, many groups have petitioned the Fish & Wildlife Service to list the sage grouse, a bird that inhabits 11 natural gas-rich states. The USFWS considered listing the species but ultimately declined and opted for a cooperative approach instead. Secretary of Interior Gale Norton called the collaborative approach a success story. Rather than asserting the blunt instrument of the federal government, the USFWS will work with grassroots and local conservation organizations to help the species thrive.⁹⁵ Like the Prebles mouse, one would think that those concerned about helping the species would feel empowered with the decision as they now have an official mandate to help. However, Mark Salvo, Director of

⁸⁹ *Id.* at 6-32.

⁹⁰ Critical habitat designations and Section 7 consultations were estimated to have caused delays to a natural gas project of 6 months to 2 years with an estimated cost over 30 years to the local economy from \$261 million to \$979 million. See Argonne Study, *supra* note 70, at 29-30.

⁹¹ *FWS Halves Critical Habitat for Prebles Mouse*, GREENWIRE, June 23, 2003.

⁹² *Id.*

⁹³ Natalie M. Henry, *FWS Proposes Removing Protection for Preble's Mouse*, GREENWIRE, Jan. 31, 2005.

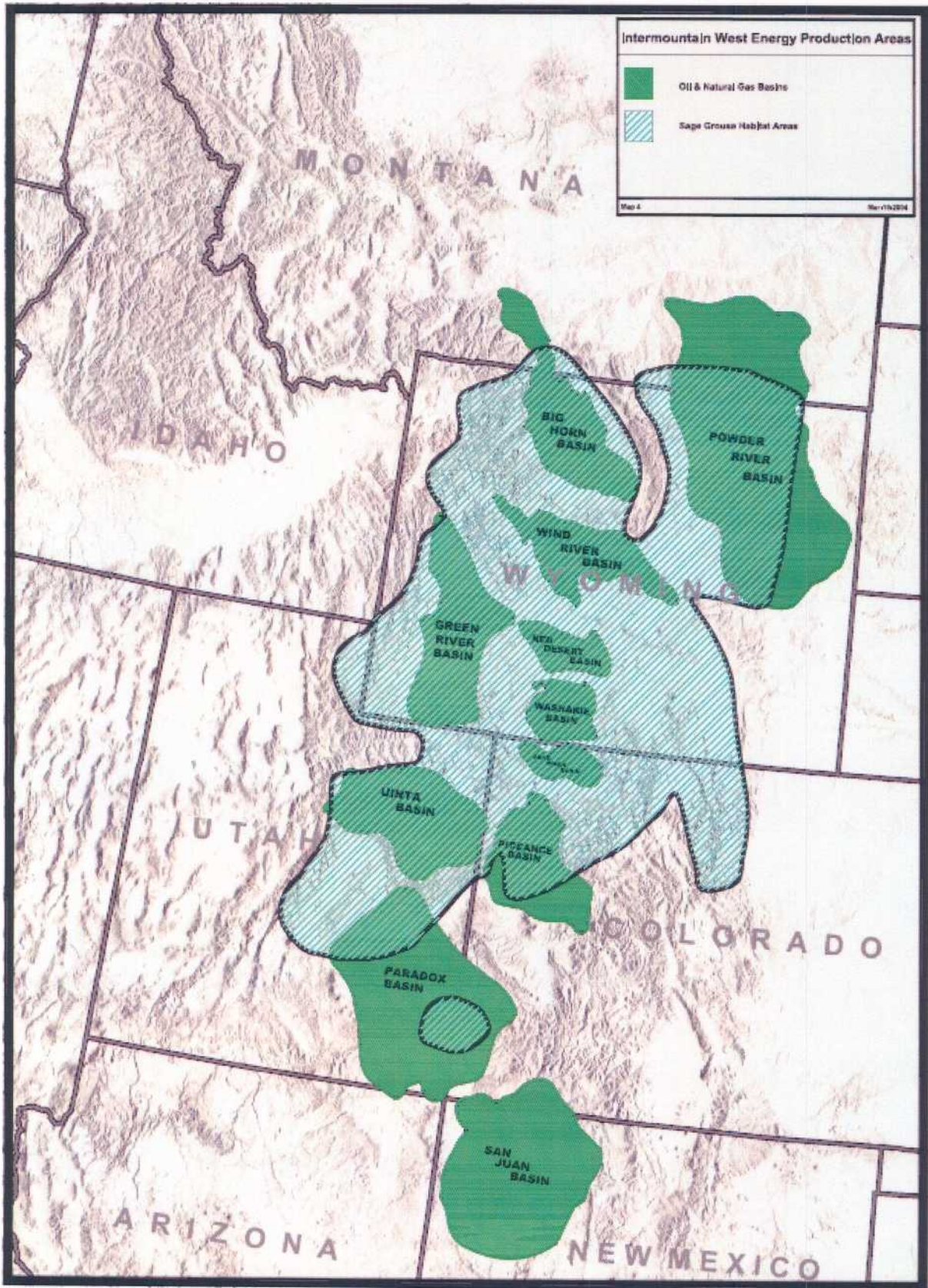
⁹⁴ *Id.*

⁹⁵ April Reese, *Locals Shoulder Conservation in Wake of Listing Decision*, LAND LETTER, Feb. 17, 2005.

the Sagebrush Sea Campaign said of the decision, “[l]ocal conservation plans are mostly window dressing and insufficient to save the sage grouse.”⁹⁶

One only needs to consider the habitat that would effectively be made off-limits if the sage grouse were listed under ESA. As the bird’s name implies, sage grouse live in and around sage. On the following page is a map that superimposes sage (light green) over the natural-gas rich basins (dark green).

⁹⁶ *Interior to Deny Sage Grouse Federal ESA Protection*, GREENWIRE, Jan. 7, 2005.



This map illustrates why some groups may be advocating for federal protection rather than innovative local conservation efforts. The effect of the Prebles mouse's designation would have stopped development; the likely effect of sage grouse designation would have stopped or at least restricted exploration and production of natural gas.

Therein lies the problem – the ESA is being used by those opposed to some or all to meet their own objectives rather than to help endangered or threatened species. One natural gas producer put the ESA issue in very simple terms: “You want to find a threatened or endangered species, go find a well.”

Hydraulic fracturing is a technique used to allow natural gas to move more freely from rock pores. The National Petroleum Council estimates that 60 to 80 percent of all wells drilled in the next decade to meet natural gas demand will require fracturing.

The practice of hydraulic fracturing is regulated by the States. EPA has consistently declined to regulate it under the Safe Drinking Water Act. Some special interest groups have sued the EPA for its decision in hopes of forcing federal regulation. One group successfully sued in Alabama. That suit prompted EPA to conduct a nationwide and comprehensive study of hydraulic fracturing, and intended to use the conclusions as a springboard for potential regulation.

In the belief that well-grounded and academically rigorous science and not special interest groups and trial lawyers should be the foundation for regulation, I introduced an amendment with the then-Chairman of the Energy Committee, Senator Jeff Bingaman concerning hydraulic fracturing. My language required a full National Academy of Sciences study of hydraulic fracturing while precluding EPA from regulating the practice until the results were determined. My provision was attached to the 107th Congress' energy bill by 78 to 21.

The 107th and 108th Congresses failed to pass an energy bill. However, the EPA realized that well-grounded science was the appropriate foundation for regulation to be built upon. In June 2004, the EPA published the final version of its hydraulic fracturing study. During the study period, the EPA reviewed more than 200 peer-reviewed publications, interviewed roughly 50 state and local government agency employees, and communicated with scores of private concerned citizens.⁹⁷ EPA concluded that, “the injection of hydraulic fracturing fluids into CBM [coalbed methane] wells poses little or no threat to USDW [underground sources of drinking water] and does not justify additional study.”⁹⁸

Although EPA's conclusions were certain, some members of the public were concerned over potential contamination from constituent liquids used in hydraulic fracturing. In

⁹⁷ For a full review of the practice of hydraulic fracturing, history of the litigation and the studies *see* <http://www.epa.gov/safewater/uic/cbmstudy/docs.html>.

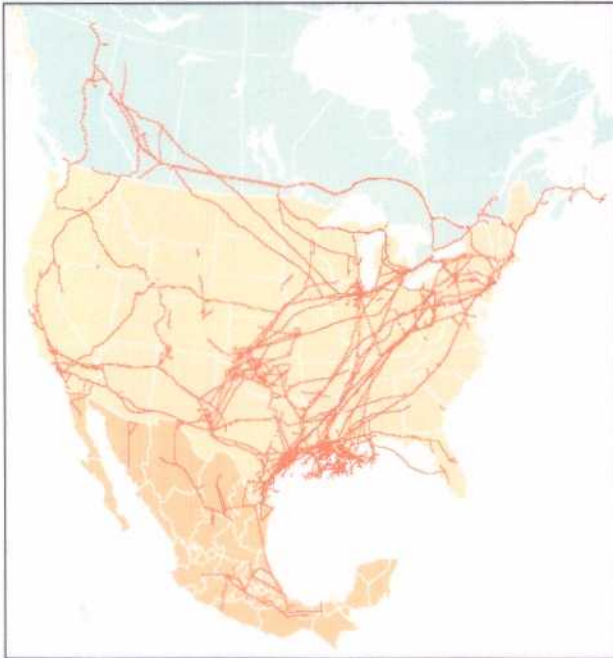
⁹⁸ EXECUTIVE SUMMARY, E.P.A. 816-R-04-003, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS ES-1 (June 2004), available at http://www.epa.gov/safewater/uic/cbmstudy/pdfs/completestudy/es_6-8-04.pdf.

response to those concerns, EPA entered into memoranda of agreement with 95% of the oil and gas industry that hydraulically fractures wells will not use the liquids of concern.⁹⁹

Notwithstanding the facts learned after careful scientific review of hydraulic fracturing, and the agreements reached between the producing industry and EPA, some contend that hydraulic fracturing is harmful.¹⁰⁰ Like the Prebles mouse, well-grounded science and the facts concluded that federal intrusion was unwarranted and unnecessary. Time will only tell when science and the facts will defy the rhetoric of litigation-prone special interest groups bent on forcing their own agendas.

Natural Gas Infrastructure

Expanding U.S. natural gas pipeline infrastructure is a necessary prerequisite to moderating high gas prices for residents and businesses alike. Currently, the nation's existing gas pipeline system is fully utilized, and lacks reserve capacity with which to transport additional supplies.



U.S. Natural Gas Pipeline Infrastructure
Source: National Petroleum Council

Assuming more gas were available, in some regions gas pipelines would be challenged to bring sufficient gas used to heat residents' homes. For example, New England has no fossil fuels of its own so pipeline infrastructure is critical to deliver gas. During the Environment Committee's March 2004 hearing on natural gas issues, Rhode Island Governor Donald Carcieri detailed the very real near crisis that occurred in his State during the winter when the distribution system was forced to shut off service to approximately 250 customers in order to preserve the remaining ones.¹⁰¹

Increasing the capacity of existing pipelines and constructing new infrastructure is expensive, but those are

investments that must occur for demand for gas to be met.¹⁰² Yet, the cost of inaction is even more expensive. Actions that delay or defer decisions force the investment costs

⁹⁹ *Id.* at ES-2.

¹⁰⁰ For example, see Tom Hamburger, *Exemption Likely to Drilling Rules*, L.A. TIMES, Apr. 14, 2005.

¹⁰¹ *Env'tl. Impacts of U.S. Natural Gas Prod. Before the Senate Comm. on Env't & Pub. Works*, 108th Cong. (Mar. 24, 2004) (testimony of Gov. Donald Carcieri, Gov. of R.I.).

¹⁰² "Pipeline and distribution investments will average \$8 billion per year to sustain existing infrastructure." NAT'L PETROLEUM COUNCIL, *BALANCING NATURAL GAS POLICY: TRANSMISSION & DISTRIBUTION T-3* (Sept. 2003) [hereinafter *Transmission Report*].

higher, or result in capital flow to other projects not subject to the same delay. According to a detailed study by the Interstate Natural Gas Association of America (INGAA), “a two-year delay in natural gas infrastructure construction will cost U.S. consumers in excess of \$200 billion.”¹⁰³

With such high stakes from costs to consumers, to the possibility of compromised health or even increased mortality, one would assume that pipelines would be constructed in short order. However, pipeline construction or expansions are burdened with a host of permitting challenges even though interstate pipelines are provided special status intended to avoid them.

The Natural Gas Act of 1938 grants the Federal Energy Regulatory Commission exclusive federal jurisdiction concerning the authorization, siting, and construction of interstate gas pipelines. However, FERC’s authority has been frustrated in several legal decisions as of late. Although FERC has exclusive siting authority over interstate pipelines, the Commission is still required to comply with NEPA as the designated lead agency. To that end, FERC has made great strides in meeting timely permit approvals through various Memoranda of Understanding with other federal agencies in 2002 and improve its processes.¹⁰⁴ Unfortunately, some state and federal agencies refuse to work within the FERC NEPA process and wait until FERC concludes its review before even beginning their work in earnest.¹⁰⁵ These agencies have important permitting or review responsibilities, however their failure to initiate them within the FERC’s mandated lead role leads to an inefficient if not completely ineffectual process.

By “sitting-out” of FERC’s timeline, the agencies at issue conduct duplicative environmental reviews. This results in increased delay in permitting time and increases the likelihood that other agencies will impose conditions at odds with FERC’s own conditions.¹⁰⁶

Although state regulatory action would be preempted where conflicts with FERC could not be worked out, state action pursuant to federally delegated authority (as in the Clean Water Act or Coastal Zone Management Act) presents a different legal question. Pipeline opponents, abetted by state government officials, have taken advantage of this situation by using the permitting authority under the CZMA and/or the CWA to frustrate pipeline projects already approved by the FERC.¹⁰⁷

Pipeline permitting challenges manifest themselves in many ways, but the result is the same. Whether a federal agency is acting in a dilatory way or in response to locally led opposition, the result is that residents and businesses pay more than they should. For

¹⁰³ ENERGY & ENVTL. ANALYSIS, INC. PREPARED FOR THE INGAA FOUND., AN UPDATED ASSESSMENT OF PIPELINE & STORAGE INFRASTRUCTURE FOR THE NORTH AMERICAN GAS MARKET 10 (July 2004) [hereinafter INGAA Foundation].

¹⁰⁴ Transmission Report, *supra* note 102, at T-25.

¹⁰⁵ SUBMISSION BY THE INTERSTATE NATURAL GAS ASS’N OF AM. TO THE COMM. ON ENERGY & NATURAL RES. NATURAL GAS CONFERENCE (Jan. 24, 2005).

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

example, New York City, one of the greatest cities in the world, has been unable to expand its natural gas pipeline capacity the last four years despite growing gas demand.¹⁰⁸ NYC's inability to relieve its bottleneck has resulted in price spikes that have exceeded \$40 per mmBtu compared with average prices around \$6 per mmBtu. New York City residents and businesses pay significantly more than other residents in the region.¹⁰⁹

As with the New England states, California must import natural gas via pipeline from surrounding states.¹¹⁰ However, California is under increased competition from the producing states so that today sudden increases in natural gas demand in one region affect natural gas prices for all regions in that basin.¹¹¹ Due to California's continually increasing demand for natural gas, its dependence on imports is projected to increase.¹¹² To address its need for natural gas, California has sought to import gas from Canada in addition to other states. Yet, certain special interest organizations have mobilized to oppose Canadian exports of gas to the U.S. For example, a joint Sierra Club and Natural Resources Defense Council report argues against increasing the pipeline infrastructure to deliver the cleanest-burning fossil fuel to California and other places.¹¹³

It is worth noting that some special interest groups are consistently changing their position on key issues depending on their intended spin that day. As noted above the NRDC opposes increasing pipelines from Canada. However, NRDC attorney, Patricio Silva testified before the House Energy & Commerce Committee in opposition to increasing supplies of natural gas. In support of his position he said, "[i]t is important to point out that with natural gas the issue is less about the need to find new supplies, than the need to develop infrastructure to deliver these supplies to market."¹¹⁴

Liquefied Natural Gas

Liquefied natural gas (LNG) is a critical component in meeting domestic demand. LNG is made by liquefying gas through a refrigeration process that reduces the volume of the gas to approximately 1/600th its original size.¹¹⁵ LNG is then shipped by specially constructed double-hulled tankers to gasification terminals and then transported through pipelines to meet demand.¹¹⁶

¹⁰⁸ *Energy Supply and the American Consumer Before the House Subcomm. on Energy & Mineral Res. of the House Res. Comm.*, 108th Cong. (Feb. 12, 2004) (testimony of Donald Santa).

¹⁰⁹ *Id.*

¹¹⁰ However, California could choose to produce more of its own natural gas rather than rely so heavily on its neighboring states.

¹¹¹ California Report, *supra* note 9, at 14.

¹¹² *Id.* at 16.

¹¹³ See MATT PRICE & JOHN BENNETT, AMERICA'S GAS TANK: THE HIGH COST OF CANADA'S OIL & GAS EXPORT STRATEGY, NATURAL RES. DEF. COUNCIL, SIERRA CLUB OF CANADA (Oct. 2002).

¹¹⁴ *Nat'l Energy Policy: The Role of Natural Gas Before the House Subcomm. on Energy & Air Quality*, 101st Cong. (Feb. 28, 2001) (testimony of Patricio Silva, Natural Res. Def. Council).

¹¹⁵ Transmission Report, *supra* note 102, at L-5.

¹¹⁶ *Id.* at L-5 to L-6.

With traditional domestic supply basins maturing, and a consistently difficult permitting environment, energy experts have looked increasingly to LNG as a key solution to our natural gas crisis. Again, environmental regulations are one of if not the most significant factor driving the demand for natural gas, yet “the environment” is consistently cited as the principal reason for opposing LNG. Federal Reserve Board Chairman Alan Greenspan highlighted this fact in a hearing before the House Committee on Energy and Commerce, “[i]n the United States, rising demand for natural gas, especially as a clean-burning source of electric power, is pressing against a supply essentially restricted to North American production.”¹¹⁷

The U.S. currently has four LNG receiving terminals: Everett, Massachusetts, Lake Charles, Louisiana, Elba Island, Georgia, and Cove Point, Maryland. In response to high natural gas prices, policymakers and industry have shown significant interest in constructing new LNG receiving terminals. The map below depicts the existing and some of the proposed LNG projects pending.



Source: National Petroleum Council

The Administrator for the Energy Information Administration, Guy Caruso went so far as to say that, “[nearly all of the increase in U.S. net imports is expected to come from LNG.”¹¹⁸ In making its projections for U.S. natural gas prices, EIA focuses its high price

¹¹⁷ *Natural Gas and Supply Issues Before the House Comm. on Energy and Commerce*, 108th Cong. (June 10, 2003).

¹¹⁸ *Hearing on Natural Gas Supply and Prices Before the House Subcomm. on Energy & Mineral Res. of the House Res. Comm.*, 108th Cong. (Feb. 12, 2004) (testimony of Guy Caruso, Administrator, Energy Information Administration).

scenario around a lack of new LNG terminals.¹¹⁹ The respected experts at Energy & Environmental Analysis, Inc. concluded that approximately ten additional LNG terminals must be constructed in order to meet natural gas demand.¹²⁰ Therefore, knowing the importance of such facilities to the Nation, one would believe that ten facilities would be permitted and constructed in short order.

However, attempts to permit and build new LNG facilities have frequently been frustrated. It is worth noting that the most challenged LNG terminals have been located in the regions most demanding new gas supplies. One of the most gas-needy States, California, is opposing LNG terminals asserting that FERC actually lacks jurisdiction as the lead agency over LNG terminals.¹²¹

Those state and local governments, with the assistance of “not-in-my-backyard” activist groups contest the needed facilities asserting environmental and safety concerns. For example, several attempts to construct facilities in the gas-dependent Northeast have been repeatedly challenged. In March 2005, the Delaware Coastal Zone Industrial Board voted unanimously against a proposed BP LNG terminal in Logan Township., N.J. that would extend into Delaware's coastal waters.¹²² In searching for authority to oppose the facility, the Board claimed that the terminal would have violated a ban on manufacturing, even though state Department of Natural Resources and Environmental Conservation officials said the addition of chemicals during the regasification process is insufficient to meet the definition of manufacturing under state law.¹²³ Whether the State had legal authority or not, one resident zeroed in on the real issue: “[n]obody wants it in their back yard. But this is our back yard -- Logan Township.”¹²⁴

In response to safety and environmental concerns from coastal residents, some industry representatives have looked to offshore LNG terminals. Again, in attempts to meet the Northeast’s skyrocketing demand for gas, a proposal is under consideration to build a \$700 million liquefied natural gas terminal in Long Island Sound that would provide about one billion cubic feet of natural gas daily to Connecticut and New York.¹²⁵ Some opponents are already expressing concern that the project could pose potential safety and environmental problems to people along the shoreline, notwithstanding the fact that the facility would be nine miles away.¹²⁶

Although safety seems to be the concern of state and local government officials, advocacy groups have staked their positions on opposing LNG terminals. The Sierra Club’s California and Nevada chapters voted to oppose both onshore and offshore LNG facilities

¹¹⁹ See ENERGY & INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2005, at 66 (Feb. 2005).

¹²⁰ INGAA Foundation, *supra* note 103, at 40.

¹²¹ See AARON M. FLYNN, CRS REPORT TO CONG., LIQUIFIED NATURAL GAS: JURISDICTIONAL CONFLICTS IN SITING APPROVAL (Jan. 27, 2005).

¹²² *Long Island Sound Project Raises Fears of Accidents*, GREENWIRE, Mar. 31, 2005.

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Long Island Sound Project Raises Fears of Accidents*, GREENWIRE, Apr. 5, 2005.

¹²⁶ “The fact that you're nine miles out is the key point . . . Even under the wildest disaster scenario that someone could imagine, it's not going to affect anyone on the shoreline.” *Id.*

even though the Club supported natural gas over nuclear and coal.¹²⁷ The environmental-based opposition led to Calpine withdrawing its proposal to construct an LNG facility in Eureka, California.¹²⁸

Obstructionist groups' opposition to new LNG facilities to meet demand is not confined to the U.S. A proposed project \$650 million LNG project in Baja, Mexico that would meet about one fifth of California's current demand was approved by Mexico's environmental secretariat.¹²⁹ Yet, Greenpeace and Mexican Environmental Law Center said that they will file legal claims against the facility claiming that, the country's Environmental Department did not gather enough scientific information concerning affects on birds living on nearby Coronado Islands.¹³⁰

The conflicts between new LNG facilities and opponents are similar to cases involving interstate pipelines – in both instances opponents assert that the federal lead permitting agency lacks authority and/or the local government objects to the federal decision under some authority retained by the state or local government. In the case of LNG, FERC and the U.S. Coast Guard have jurisdictional authority.¹³¹ Permitting an LNG terminal can take several years.¹³² Although FERC has made great strides in improving the NEPA environmental review process, federal and/or state agencies may be so strident in their opposition that they will use the delaying tactic of “sitting-out” the process and then asserting opposition after-the-fact. It is important to note that improving and rationalizing the process is no simple task. Under NEPA, FERC must prepare an environmental impact statement and a review of thirteen Environmental Resource Reports, five of which are applicable specifically to LNG facilities.¹³³

Outer Continental Shelf

Offshore or Outer Continental Shelf (OCS) natural gas has proven to be some of the most significant and important supply sources in meeting U.S. demand.¹³⁴ In fact, some 26 percent of domestic daily natural gas is produced from the OCS.¹³⁵

The OCS natural gas resource base is enormous and technological advancements in exploration and production techniques allow for ever-increasing production yields. Those real world technological advancements led the Minerals Management Service, which

¹²⁷ See *Calpine Withdraws LNG Plans for California*, OIL DAILY, Mar. 19, 2004, at 5.

¹²⁸ *Id.*

¹²⁹ *Enviros Plan to Block Mexico Facility*, GREENWIRE, Jan. 19, 2005.

¹³⁰ *Id.*

¹³¹ Transmission Report, *supra* note 102, at L-46.

¹³² *Id.*

¹³³ *Supra* note 121.

¹³⁴ “The OCS is composed of lands beyond the generally 3-mile area of state jurisdiction in most offshore waters and beyond the 10-mile area of state jurisdiction in the Gulf of Mexico waters off Texas and Florida.” MARC HUMPHRIES, CRS REPORT FOR CONGRESS, OUTER CONTINENTAL SHELF OIL & GAS: ENERGY SECURITY & OTHER MAJOR ISSUES 1 (Mar. 14, 2003).

¹³⁵ Supply Report, *supra* note 66, at 6-45.

oversees development in the OCS to update its assessment of technically recoverable gas by 12 percent.¹³⁶

However, the OCS could provide substantial more gas to power domestic manufacturers and heat homes. Yet, areas on both coasts and the Eastern Gulf of Mexico are off-limits to exploration and production.

Keeping the OCS off limits from exploration and production has been a bipartisan issue. Through Interior Appropriations Bills, Congress enacted moratoria from 1982-1992.¹³⁷ President George H.W. Bush issued a Presidential Directive extending moratoria area until 2000 and President Clinton extended and expanded the off limits policy until 2012.¹³⁸

Opening the OCS moratoria areas for exploration and production has become a “do-or-die” issue for many special interest environmental groups. The Natural Resources Defense Council states that it “opposes lifting the current OCS moratoria” and “the prospect for opening these areas will likely be extremely controversial and met with strong resistance.”¹³⁹

Although the National Petroleum Council, estimates about 80 TCF of technically recoverable gas underlie the moratoria areas, experts cannot be certain.¹⁴⁰ Policymakers have sought to get a better understanding how much gas lie off the East and West Coasts and Eastern Gulf of Mexico, especially considering that the current estimates rely on old data. In fact, the Outer Continental Shelf Management Act plainly states that the “Secretary of Interior shall conduct a continuing investigation to determine an estimate of the total discovered crude oil and natural gas reserves and undiscovered crude oil and natural gas reserves” of the OCS and report such findings biannually to Congress.¹⁴¹ However, the subsequent moratoria have effectively blocked the Secretary from following through with the requirement.

Two years ago, Congress sought to conduct a study of those critical resources in the energy bill. Yet, the provision that would have merely inventoried OCS resources enabling policymakers to make informed decisions was stripped from the energy bill – environmentalists labeled the inventory study “a stalking horse for lifting the bans.”¹⁴² The federal government effectively chose to remain ignorant rather than assessing and informing the public about their critical resources.

Special interest opposition groups cite environmental concerns as the principal reason for opposing offshore exploration and production. They point out that exploring for gas could

¹³⁶ Ben Geman, *Interior Increases Offshore Gas Estimate; Oil Amount Unchanged*, GREENWIRE, Dec. 23, 2004.

¹³⁷ *Supra* note 129, at 1.

¹³⁸ *Id.* See also Argonne Study, *supra* note 70, at 38-43.

¹³⁹ SHARON BUCCINO, NRDC SUBMISSION TO THE SENATE ENERGY & NATURAL RESOURCES COMM. NATURAL GAS CONFERENCE, pp. 10, Jan. 24, 2005.

¹⁴⁰ Summary Report, *supra* note 65, at 35-36.

¹⁴¹ 43 U.S.C.A. § 1863 (2004).

¹⁴² Ben Geman, *House Lawmakers Back OCS Bans*, GREENWIRE, May 3, 2005.

result in finding oil and the possibility of contamination. They are correct that there is the potential for oil to enter the oceans. The National Academy of Sciences found that offshore oil and gas exploration and production accounts for only 2 percent of the oil in the marine environment.¹⁴³ However, given that the NAS study is today 20 years old and exploration and production technology has advanced significantly in that time, the amount of oil released would be even lower.¹⁴⁴ Several federal environmental laws guard against potential harm. A sampling of just a few of the applicable laws includes the Federal Water Pollution Control Act, Clean Air Act, National Environmental Policy Act, Endangered Species Act, Marine Mammal Protection Act, and Fishery Conservation and Management Act.

Yet, putting the NAS' 2 percent finding in perspective, the scientific body also concluded that naturally occurring oil seeps contributed to 8 percent of the oil present in the oceans.¹⁴⁵

Considering the Nation's most up to date energy and environmental information is the only reasonable way to balance both energy and environmental interests. Congress recognized as much when it first established the nation's OCS policy in passing the Outer Continental Lands Act in 1978.¹⁴⁶ It is important to note that throughout the Act, Congress was careful to recognize the role that technology has and would play in offshore exploration and production. Specifically, the Act states, "environmental and safety regulations should be viewed in light of current technology and information."¹⁴⁷ Unfortunately, opponents to offshore development have purposefully ignored the great technological strides made by the offshore production industry.

Further, opposition groups claim that opening access to OCS moratoria areas "will not lower prices because the most abundant resources are already available for development."¹⁴⁸ First, using current data they are correct that the most abundant resources areas are currently available. However, as already stated, they oppose even studying how much gas is available. Second, statements such as the one quoted above or similar assertions making light of the approximately 80 TCF of gas known available in the moratoria areas are not only unhelpful, but they are insensitive.

The currently unavailable gas offshore may not be as abundant as in other areas, but 78 TCF is enough natural gas to supply the entire country for 3 ½ years.¹⁴⁹ Which 3 ½ years

¹⁴³ U.S. DEP'T OF ENERGY, ENVIRONMENTAL BENEFITS OF ADVANCED OIL & GAS EXPLORATION & PRODUCTION TECHNOLOGY 22 (Oct. 1999). Again, that study reviewed both oil and gas E and P; it is likely that a natural gas-focused study would demonstrate far lower levels.

¹⁴⁴ NAT'L ACADEMY OF SCIENCES, OIL IN THE SEA: INPUTS, FATES, AND EFFECTS (1985), available at <http://www.nap.edu/books/0309034795/htm/R1.html>.

¹⁴⁵ *Supra* note 129, at 1.

¹⁴⁶ 43 U.S.C.A. §§ 1801–1866.

¹⁴⁷ *Id.* § 1801. Further the Act seeks to, "encourage development of new and improved technology for energy resource production which will eliminate or minimize risk of damage to the human, marine, and coastal environments." *Id.*

¹⁴⁸ Ben Geman, *Gas Industry Continues Push for Access to Off-limits Areas*, E&E DAILY, Jan. 10, 2005. See also *supra* note 134.

¹⁴⁹ See Brad Foss, *U.S. Oil Drillers' Strategy: Today ANWR, Tomorrow the Coastlines?*, SEATTLE TIMES, Apr. 8, 2005.

would the special interest groups and their supporters choose to forgo heating and cooling their homes, electricity, and their jobs?

III. SOLUTIONS

As demonstrated, the demand for natural gas has risen aggressively in reaction to environmental regulations promoting its use. Natural gas has the same market response as any other commodity when demand is high but supply is limited – price increases. High natural gas prices have translated to increased home heating and cooling costs, increased electricity costs, and since gas is a necessary feedstock for much of the nation's manufacturing sector, the loss of jobs.

However, as demonstrated, natural gas is not in particular short supply. Although a particular set of federal regulations have driven up the demand for natural gas, other regulations have worked against increasing supply. The description of these conflicting purportedly environmental goals is effectively an artificially constrained market – 'artificial' because the market constraint is one of government's own making, and one that policymakers today can do something about. This section describes principles that, if properly incorporated, will positively influence natural gas prices in both the short and long-term while ensuring a clean environment.

Public Perception

Natural gas is important to modern society. Natural gas necessarily is derived from the natural environment. Because of these obvious facts, some would suggest this relationship results in conflict between man's needs versus the environment. Further, this perception of conflict has become the battle cry of special interest groups on either side of the issue. Special interest groups have effectively pulled man out of the environment and work hard to make sure he is unable to reenter.

This perception is not only detrimental to developing reasonable natural gas policy, but it ignores the self-evident relationship linking man and the environment, a relationship that has been recognized time and again throughout environmental law.

Humans exist with and within the environment, and reasonable policy will recognize as much. Unfortunately, rather than advocating based on what the law actually says, special interest groups on both sides of the issue advance ever-more-radical interpretations to expand the man versus environment divide.

It is imperative that the public learn the facts about natural gas exploration, production, transportation, and distribution so that it can assist in developing reasonable and effective policy. Further, the public should be reminded that the reason why natural gas demand has increased so steadily was in direct response to their demand for the cleaner fossil fuel.

Public Education: The role of environmental stewardship and technology

The oil and gas industry has incorporated environmental stewardship as an integral part of normal business operations. Technological improvements have aided the industry in balancing the goals of resource extraction with sound environmental practices. Although the industry proudly retains its traditional wildcat roots, oil and gas companies are some of the most technologically advanced businesses today. “In the past, wildcat wells were drilled with little more than intuition. Today, modern analysis techniques have vastly improved the success rate for discovery of economical quantities of oil and gas.”¹⁵⁰ The industry is able to go farther, deeper, in shorter timeframes and with ever decreasing disturbances to the environment.

Ensuring minimal environmental impacts and maximizing returns on investment are the principles that transformed exploration and production from an art form to cutting edge science. Unfortunately, critics of the oil and gas industry seem to ignore the great environmental gains realized in the last ten years, much less the last thirty.

States now regulate the spacing of oil and gas rigs under the prevention of waste principle. “These regulations require separation of wells by appropriate distances so that wells do not either interfere with other production or become more numerous than necessary, thus wasting materials and energy.”¹⁵¹ However, well spacing regulations were first established in Texas and implemented by armed troops to prevent violent conflicts between wildcatters.¹⁵² Exploration techniques have fully transitioned from a luck-based art form using divining rods to hard science employing satellites, microprocessors, remote sensing, and super-computers to generate three-dimensional time-lapse imaging of subsurface reservoirs.¹⁵³

At times, the public seems to perceive environmental responsibility as a cost to doing business that is unrelated to production. Yet, the chief objective of what many today regard as environmental mitigation techniques were primarily aimed at increasing production and fair business practices. The fact of the matter is that “higher productivity means less impact on the environment and better protection of our natural resources.”¹⁵⁴

For example, exploration and production technology has minimized surface disturbance from 6 acres in 1991 to just over one and a half acres today.¹⁵⁵ Improved drilling

¹⁵⁰ DRS. LEE C GERHARD & WILLIAM F. LAWSON, THE ENVIRONMENTAL EVOLUTION OF THE PETROLEUM INDUSTRY 10, INTERSTATE OIL & GAS COMM’N (2001) [hereinafter Gerhard & Lawson].

¹⁵¹ *Id.* at 10.

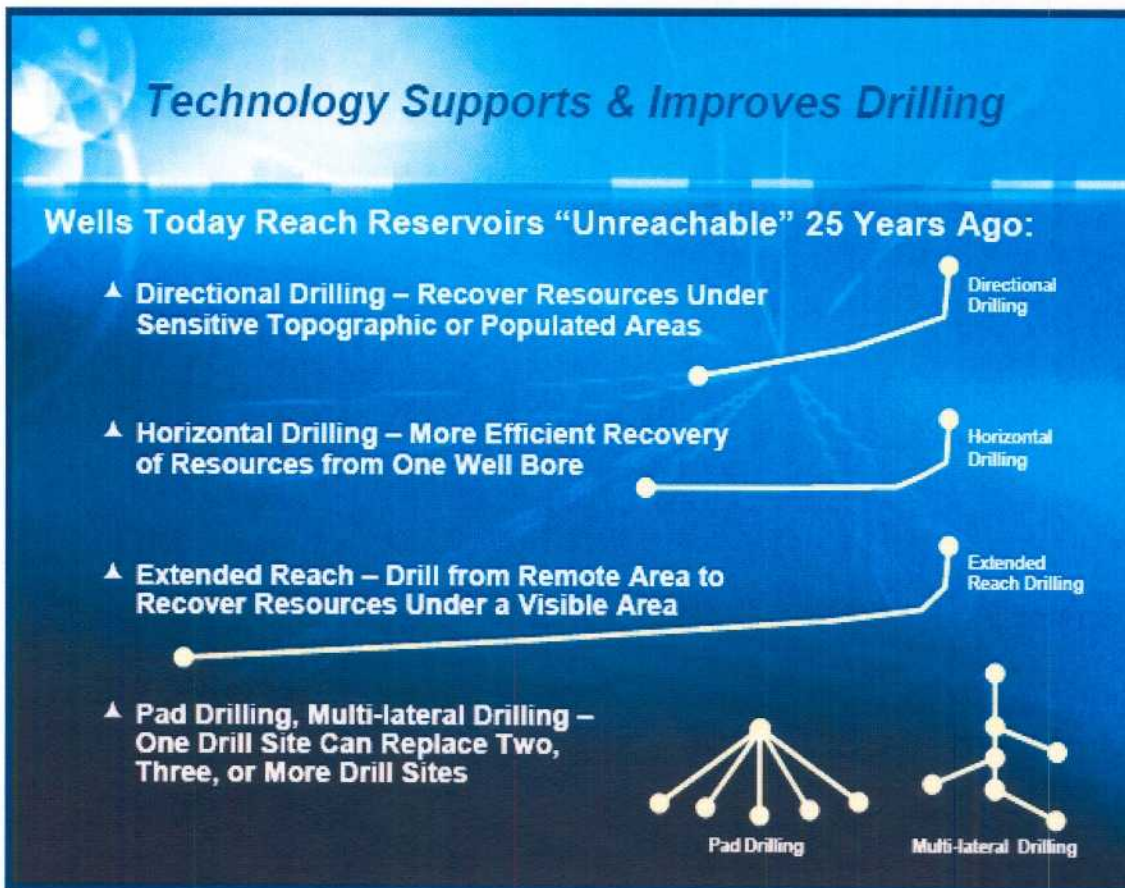
¹⁵² “Drillers tried to nestle drilling rigs as close to each other as possible to take their share of the resource before someone else could coax it across a property line to their well.” *Id.*

¹⁵³ U.S. DEP’T OF ENERGY, OFFICE OF FOSSIL ENERGY, ENVIRONMENTAL BENEFITS OF ADVANCED OIL AND GAS EXPLORATION AND PRODUCTION TECHNOLOGY 13 (Oct. 1999) [hereinafter DOE Report].

¹⁵⁴ *Id.* at 12.

¹⁵⁵ *Before the House Subcomm. on Energy & Mineral Res. of the House Comm. on Res.*, 108th Cong. (July 15, 2004) (testimony of William Whitsitt, President, Domestic Petroleum Council).

technology has allowed multiple wells to be drilled from a single location or access to several gas reservoirs from a single well to extended locations in excess of 25 miles.¹⁵⁶



As already detailed in the preceding sections of this report, U.S. households, electric generators, and workers desperately need more natural gas. Moving beyond alarmist rhetoric and looking at the facts defining today’s oil and gas industry should not be a partisan exercise. The Clinton Administration acknowledged as much when it stated, “[t]he U.S. oil and gas industry has integrated an environmental ethic into its business culture and operations” and “has come to recognize that high environmental standards and responsible development are good business.”¹⁵⁷

In recent years, the natural gas industry has done a good job in educating the public about their operations and relationship with the environment. For years, companies have invested in the communities in which they operate in many ways, from education projects to protecting open space to assisting farmers in water monitoring programs. Representing the gas producing states, the Interstate Oil and Gas Compact Commission, surveys and

¹⁵⁶ *Id.*

¹⁵⁷ DOE Report, *supra* note 153, at 3.

acknowledges the work of some of these companies when giving their annual Chairman's Stewardship Awards.¹⁵⁸

Yet, the industry at large, along with the federal government should develop additional ways to partner with the public. The public participation process is an important component of environmental law. A fully informed public is better able to participate in the process and reach their own conclusions rather than rely on the skewed perceptions of special interest groups.

Efficiency

Energy efficiency is increased when an energy conversion device undergoes a technical change that allows it to provide the same service while using less energy.¹⁵⁹ Energy efficiency behavioral and financial investments simply make good common sense where appropriate.

The Bush Administration recognizes the important role that energy efficiency has in addressing the nation's energy needs. Out of 105 recommendations in the President's National Energy Plan, more than half specifically address efforts to improve energy efficiency and to improve the performance and lower the cost of alternative forms of energy.¹⁶⁰ Several federal programs have been established in response to national interest that considers energy efficiency as an important tool for mitigating environmental impacts.¹⁶¹

EPA and DOE's Energy Star program is one of the more recognized federal initiatives that have led to marked efficiency improvements.

Since its inception in 1992, Energy Star has been a leader in informing consumers of more energy efficient products through a distinctive labeling campaign. Typically, Energy Star-rated products, appliances, or more recently, building designs may cost more at the time of purchase, but allows the consumer to decide whether the long-term savings is worth it compared to a marginally higher priced product at the time of purchase. Many businesses and homeowners have, in fact, made the upfront investments and have realized savings many times over. For example, "a home fully equipped with Energy Star qualifying products will operate on about 30 percent less energy than a house equipped with standard products, saving the typical homeowner about \$400 each year."¹⁶²

¹⁵⁸ See <http://www.iogcc.oklaosf.state.ok.us/> for more information on recipients of the awards.

¹⁵⁹ Fred Sissine, *Energy Efficiency: Budget, Oil Conservation, and Electricity Conservation Issues*, Cong. Research Serv., Jan. 28, 2005 at 1.

¹⁶⁰ *Hearing on Natural Gas Supply and Demand Issues Before the Senate Comm. on Energy and Natural Res.*, 108th Cong. (July 10, 2003) (statement of David Garman, Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Dep't of Energy).

¹⁶¹ *Id.* at 2.

¹⁶² ENERGY STAR – THE POWER TO PROTECT THE ENVIRONMENT THROUGH ENERGY EFFICIENCY 3, available at http://www.energystar.gov/ia/partners/downloads/energy_star_report_aug_2003.pdf.

In any discussion of energy policy, it is critical that one consider the choices comprehensively and in proper context. When it comes to energy efficiency, the American public and businesses have made great strides the last few decades in improving energy efficiency in their own right.

For example, since the mid-1970s, the industrial sector has reduced the amount of energy required to produce one unit of output by nearly 40 percent.¹⁶³ Bob Drake of the Oklahoma Farm Bureau testified before the Environment & Public Works Committee, that “today’s agriculture is more energy efficient than ever before ... across this nation, farmers are producing 30 percent more crop using 30 percent less energy-related inputs, including fertilizer, than we did only a generation ago.”¹⁶⁴ U.S. consumers have reduced the amount of natural gas used per customer by 16 percent from 1980 to 2001.¹⁶⁵

In some instances, a particular industry may have picked the largest and low-hanging energy efficiency fruit in order to have survived as long as it has in an era of global competition. U.S. industry is very price sensitive and deploys energy efficiency technologies when they become available and conditions are favorable.¹⁶⁶ The unsustainably high price of natural gas may and in some cases already has outpaced the tremendous energy efficiency gains to be realized. This means that a business will not invest in costly efficiency technologies if it would be forced into bankruptcy before ever realizing the benefits of those investments.

Energy Efficiency versus Conservation

Energy efficiency is not a new concept, but it has increasingly become the politically correct component of responsible and balanced energy policy. As indicated earlier, the President included scores of energy efficiency proposals in his National Energy Plan and consistently speaks about energy efficiency in the context of comprehensive energy policy. Many special interest groups praise the virtues of energy efficiency and lambaste policymakers for not forcing through ever-more energy efficient mandates on the American people.

However, the truth of the matter is that the pro-energy efficiency groups oftentimes do not consider efficiency goals in the context of comprehensive legislation, but rather are the same organizations that oppose increasing supplies of energy. But why? The answer comes in two parts.

First, improved energy efficiency increases, rather than decreases energy consumption.

It has become an article of faith amongst environmentalists that improving the efficiency of energy use will lead to a reduction in energy consumption...However,

¹⁶³ JOINT ECON. COMM., THE PRESSURES ON NATURAL GAS PRICES 2 (Oct. 6, 2004).

¹⁶⁴ *Supra* note 47.

¹⁶⁵ *Supra* note 162.

¹⁶⁶ *Supra* note 161.

economists of all persuasions are united in their belief that the opposite will occur. They argue that the effect of improving the efficiency of a factor of production, like energy, is to lower its implicit price and hence make its use more affordable, thus leading to greater use.¹⁶⁷

Mithra Moezzi of the Ernest Orlando Lawrence Berkeley National Laboratory states that, “energy consumption per capita is increasing despite or perhaps because of emphasis on energy efficiency in energy policies.”¹⁶⁸

The effect of increased energy consumption as a result of improved energy efficiency has given rise to a split among ecologically minded economists. What they argue is not for greater efficiency, which leads to more consumption, but less consumption.¹⁶⁹ Less consumption may be appropriately called conservation, or “doing without.” Some argue that consumer-based energy efficiency programs such as Energy Star should be changed in favor of “a system that incorporates a measure of absolute consumption, such as energy consumption per household, may better reflect energy implications.”¹⁷⁰

However, special interest environmental organizations have largely abandoned a conservation-based approach. “Improved efficiency has also become the manifesto of our environment movement because the concept is politically correct, fundable and the basis of economic growth.”¹⁷¹

The “environment movement” replaced conservation, the real goal sought, with energy efficiency after President Carter’s dismal defeat to President Ronald Reagan. In a nationally televised speech in 1979 during the second ‘energy crisis’, President Carter said, “the nation was facing a crisis that was the ‘moral equivalent of war,’ and he thus called on the American public to practice self restraint in order to save energy.”¹⁷²

Rather than sound like President Carter, “energy efficiency” became the new mantra so as to disassociate energy conservation with the pain, sacrifice, and the dire supply shortage predictions of the Carter years that did not come true.¹⁷³ Instead, a new strategy, either intended or not has evolved; speak in terms of the politically expedient and popular “energy efficiency” while at the same time work diligently against increasing supplies of energy so that energy prices increase. The effect that the Carter-minded conservationists sought occurs through price, and not through moral or comfort-based choice.

¹⁶⁷ Horace Herring, *Energy Efficiency-a Critical View*, ENERGY, at 1 (forthcoming) or see http://www.elsevier.com/wps/find/journaldescription.cws_home/483/description#description [hereinafter Herring].

¹⁶⁸ MOTHRA MOEZZI, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, WASHINGTON, D.C., THE PREDICAMENT OF EFFICIENCY, PUBLISHED IN PROCEEDINGS OF THE ACEEE 1998 SUMMER STUDY ON ENERGY EFFICIENCY IN BUILDINGS 2 (1998), or available at <http://enduse.lbl.gov/info/ACEEE-Pred.pdf>.

¹⁶⁹ Herring, *supra* note 167, at 6.

¹⁷⁰ *Supra* note 168.

¹⁷¹ Herring, *supra* note 167, at 8.

¹⁷² *Id.* at 7.

¹⁷³ *Supra* note 168.

According to the Energy Information Administration, energy consumption falls in response to high prices, not higher rates of efficiency.¹⁷⁴ During the 1970s and early 1980s, energy consumption fell in response to high energy prices, and from the mid-1980s through the mid-1990s energy consumption increased with declining energy prices and more robust economic growth.¹⁷⁵ EIA currently predicts “generally lower energy consumption and a more rapid shift away from industrial uses.”¹⁷⁶ This shift in EIA’s numbers was earlier explained, unfortunately, through the very human-side of workers losing their jobs because natural gas prices increased beyond any potential savings that greater efficiencies could yield.

EIA repeatedly concluded that energy use is a direct reflection of economic growth and output, also known as, providing workers with jobs. Policymakers should consider energy efficiency goals in light of comprehensive energy policy that will also increase natural gas supplies. Proposals that would increase the costs of production or living such as a carbon or consumption tax must be viewed with great caution. The strength and economic prosperity of the nation must not be risked for the moral-based and fundamentally flawed policies of the Carter era.

Environmental Regulations

As this paper detailed repeatedly, environmental laws and regulations have driven natural gas demand. Amendments to the Clean Air Act (CAAA) in 1990 were the most significant catalyst that led to gas demand growth. The Energy Information Administration stated that the “CAAA have created increased demand for cleaner fuel sources, particularly natural gas” and that “more gas-fired generation units have been constructed, which has resulted in a significant increase in the amount of electricity produced from natural gas.”¹⁷⁷

It is imperative that environmental regulations not choose one fuel source over another, but rather, provide for a diverse fuel mix for power generation.

Fuel diversity creates balance in the energy production portfolio, and by creating balance, limits the exposure to financial risks or unfavorable pricing practices either by fuel or technology suppliers. In a market where all of the fuel input costs are increasing, fuel diversity limits the ability of disruptions in any one fuel source to potentially cause a ‘shortage’ with potential resulting price volatility and/or supply interruptions.¹⁷⁸

Great care should be given to legislative proposals that would effectively favor one fuel source over another. As Guy Ausmus, Chairman of the American Iron and Steel Institute

¹⁷⁴ ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2005 at 6 (Feb. 2005).

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 5.

¹⁷⁷ See http://www.eia.doe.gov/oil_gas/natural_gas/analysis_publications/ngmajorleg/clnairact.html.

¹⁷⁸ *Supra* note 28.

concluded that the Nation was experiencing a natural gas crisis because, “[n]atural gas was given a preferred place in our economy.”¹⁷⁹

Policymakers should recognize that laws, either international treaties like the Kyoto Protocol or domestic efforts to restrict greenhouse gas emissions, will unbalance the generation fuel mix. “Since coal is the most carbon intensive fossil fuel, any legislative or regulatory limits on carbon emissions will impact coal more heavily than natural gas.”¹⁸⁰

The Energy Information Administration concluded that the Kyoto Protocol would reduce coal-based electric generation between 2 percent and 74 percent of today’s level by 2020, and electricity costs could increase 20 to 86 percent.¹⁸¹

Therefore, mandatory carbon-reducing policy would result in one of two outcomes. Either natural gas and electricity prices would increase as generators shift away from coal or the nation reduces its overall economic output.

Certainty is a prerequisite for effective regulations. The regulated community, the regulators, and the public need to clearly understand the expectations and responsibilities of each other in order to promote the most efficient implementation and enforcement of those regulations.

Unfortunately, natural gas production opponents recognized that regulatory uncertainty provides them with the blunt tool of litigation. As such, their claims go beyond arguing about potentially uncertain regulations, but they actually work toward creating new avenues of regulatory uncertainty that will empower them with even more litigation tools. The issue of hydraulic fracturing is a good example where special interest gas opposition groups have sought to impose regulatory uncertainty on a well-understood and regulated technique. Even after EPA concluded to the contrary, opponents will likely argue that regulatory changes are needed to guard against environmental harm.

Further, as in the case with the Endangered Species Act, special interest opposition groups may have already realized or mastered the power of regulatory uncertainty and opposes any changes regardless whether the changes could benefit species. For example, the Center for Biological Diversity asks the public to pre-sign an ESA declaration just in case, “various threats arise to the Endangered Species Act, in the form of legislation in the U.S. House of Representatives or the Senate or negative administrative actions” are proposed.¹⁸²

Policymakers should ensure that their efforts guard against potentially uncertain regulations, and would do well to clarify existing statutes where Congressional or regulatory intent has been called into question.

¹⁷⁹ *Before the House Subcomm. on Energy & Minera Res. of the House Res. Comm.*, 108th Cong. (Feb. 11, 2004) (testimony of Guy H. Ausmus, Chairman, American Steel Institute).

¹⁸⁰ Demand Report, *supra* note 2, at 5-17.

¹⁸¹ See <http://www.eia.doe.gov/neic/press/press109.html>.

¹⁸² See http://actionnetwork.org/campaign/esa_pledge.

CONCLUSION

Environmental regulations have promoted natural gas over other fuel sources while other environmental policies have worked against increasing supplies. These inconsistent policies have resulted in sharp increases in the price of natural gas, electricity, and the loss of high paying domestic manufacturing jobs. Moderating those price effects must include additional exploration and production of natural gas. According to the Energy Information Administration, "every 1 percent that production falls ...we can expect 5-10 percent higher peak prices this winter."¹⁸³

U.S. economic security requires policymakers, regulators, the natural gas-related industries, and the public to address natural gas in the context of comprehensive energy policy and within a certain and predictable regulatory framework. As Chairman of the Committee on Environment and Public Works, I will work toward a comprehensive, balanced, and rational natural gas policy.

¹⁸³ *Supra* note 6.