

# **SOLVING AMERICA'S NATURAL GAS CRISIS**

An analysis of the causes and impacts of  
high natural gas prices, and what Congress  
must do to address them

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Is America mired in a natural gas crisis? Some commentators, including several environmental groups, dismiss the crisis label as hyperbole. The Natural Resources Defense Council called it an “excuse to attack environmental safeguards on extracting and burning the fuel.” The domestic supply of gas, the argument goes, is more than adequate to meet growing demand, and though natural gas prices are high, this merely reflects typical volatility in gas markets.

Yet crisis is defined not just as a sudden or dramatic change but also as a turning point. This is exactly how Federal Reserve Chairman Alan Greenspan characterized trends in natural gas markets. “Today's tight natural gas markets have been a long time in coming,” Chairman Greenspan said on June 10, “and futures prices suggest that we are not apt to return to earlier periods of relative abundance and low prices anytime soon.”

Put another way, we are now at a critical juncture, one that, as Chairman Greenspan noted, cannot be remedied by short-term fixes. The high cost of natural gas is here to stay, with serious economic consequences for the economy.

Natural gas, largely because of federal environmental policies, has become the fuel of choice for homes, businesses, and the generation of electric power. Trends show growing demand for natural gas over the next two decades. As a nation, we must produce more gas to meet this demand. For the last several years, however, our ability to produce gas has been significantly curtailed. There are solutions to this problem, but before we can achieve those, we must properly identify the causes.

There are several specific areas of concern to me as chairman of the Committee on Environment and Public Works. For one, unbalanced implementation of the nation’s environmental laws has become a significant barrier to production of natural gas. Additionally, Congress is considering a range of environmental policies that would control emissions of carbon dioxide. Such policies are misguided for a variety of reasons, not least because they would dramatically spike demand for natural gas, straining existing supplies, and drive up energy costs to unsustainable levels.

In this paper, I will explain why Congress should reject regulation of carbon dioxide, and instead support policies such as the President’s Clear Skies initiative, which avoids costly fuel switching from coal to natural gas, thereby maintaining a balanced energy supply.

## **WHAT’S AT STAKE**

As chairman of the Committee on Environment and Public Works, I believe strongly in protecting and preserving America’s environmental heritage. Making our environment safe, clean, and livable is a goal supported by citizens from every region of the country. As history has shown, environmental improvements result from a healthy, growing economy, which provides resources to invest in technologies that make a better environment possible.

To promote economic growth and environmental protection, federal policies must be balanced. Unfortunately, these policies have become inflexible, ossified, and biased against developing natural gas in an environmentally sound manner. These policies have been ably exploited by radical environmental groups, which oppose fossil fuel production.

The choice between producing natural gas and protecting the environment is a false one. A 1999 Clinton Administration report titled “Environmental Benefits of Advanced Oil and Gas Exploration and Production Technology,” states that innovative natural gas exploration and production approaches are “making a difference to the environment” because experts can produce energy more efficiently and “restore sites to original or better condition.”

The report notes that, over the last four decades, industry has developed increasingly innovative technologies that increase environmental performance and economic performance and resource recovery.

And as Federal Reserve Chairman Greenspan noted during his congressional testimony in June: “We have been struggling to reach an agreeable tradeoff between environmental and energy concerns for decades.” Finding the appropriate tradeoff is essential for the simple reason that, over the next two decades, and probably longer, more of our nation’s energy needs will be supplied through natural gas.

## **THE CONSEQUENCES**

Natural gas, as noted above, is an important component of the American economy. It supplies approximately 25% of U.S. energy, generating about 19% of electric power, heating over 60 million households, and providing over 40% of all primary energy for industries. The U.S. Energy Information Agency (EIA) forecasts that by 2020 domestic natural gas demand will increase by over 60 percent, to somewhere between 32 and 35 trillion cubic feet (tcf).

Because natural gas affects—directly and indirectly—so many aspects of our economy, price increases can have pervasive, debilitating effects on consumers and businesses of all sizes.

According to Global Insight, a non-partisan economic forecasting firm, home-heating costs for an average Ohio consumer will rise by \$220 this winter. In New England, homeowners spent more than \$1,300 for natural gas last winter, compared with \$900 the previous winter when prices were much lower and the weather milder. These bills could approach \$1,400 per home this winter.

When natural gas prices spike, the cost of electricity increases, severely impacting the poor, the elderly, and children. “The choices that our seniors and poor must make,” according to the Campaign for Home Energy Assistance, “are whether to pay for food or medicine or pay for heating and cooling their homes.”

In a recent study, the Center for Disease Prevention and Control (CDC) claimed that air conditioning is the number one preventive factor against heat exposure. As electricity prices go up, fewer people, especially those on fixed incomes, turn on their air conditioners, which can cause serious health problems and, in some tragic cases, even death.

In addition to consumers and the poor, the “net effect” of high natural gas prices is “an increase in costs, which reduces U.S. wealth and competitiveness,” according to Global Insight. Manufacturing, which gets 40 percent of its energy from natural gas and uses nearly one-third of domestic natural gas supplies, has been crippled by natural gas prices.

Many manufacturing companies operate in the global economy, and sustained price increases for natural gas have undermined their competitive strength. To survive, some are shedding jobs (2 million, in fact, since 2000) or moving operations overseas, where natural gas is more affordable.

The chemical industry is especially sensitive to energy prices. This year, citing high natural gas prices as the principal reason, eight chemical plants filed for Chapter 11 bankruptcy. Gerard Tarzia, vice president and business director at Rohm and Haas Company, recently testified before Speaker Dennis Hastert’s Natural Gas Task Force that each \$1 increase in natural gas prices adds about \$50 million per year to the company’s operating costs.

## **THE CAUSES**

Prices are going up, as Chairman Greenspan has said, because of a fundamental supply-demand imbalance. Global Insight recently predicted that “the supply and demand balance for the remainder of the year will remain precarious and the resulting gas price level will lead to some reduction in industrial output over the next three quarters.”

Natural gas prices for much of the 1990s remained relatively stable, hovering around \$2 per trillion cubic feet tcf. In 2002, that stability unraveled, as the long-term equilibrium price for gas skyrocketed to nearly \$10 tcf. Today, prices have fluctuated anywhere between \$4.50 tcf to \$6 tcf, prices that for many natural gas dependent businesses are simply too high.

How did we get to this point? Much of the story can be traced to the nation’s environmental policies. This is especially true in the electricity sector. Siting and permitting for coal-fired power plants, for example, has become extremely complex, burdensome, and uneconomical, pressuring many companies into building gas-fired plants. As the National Petroleum Council found, “These policies have led to restrictions on fuels other than natural gas for the siting of power generation...”

According to the National Energy Policy Report, in order to meet projected electricity demand over the next two decades, America must build between 1,300 and 1,900 new power plants, equivalent to 60 to 90 plants a year. EIA estimates that almost 90 percent

of this new generation will be gas-fired. As a result, by 2020, according to EIA, natural gas, as a share of electricity generation, will grow from its current level of 16 percent to 33 percent.

The 1990 Clean Air Act amendments also were instrumental in the shift to gas. They required dramatic reductions in sulfur dioxide to combat acid rain and reduce emissions of particulate matter. By any measure, they were largely successful in achieving clean air targets. This was due in part because of increased use of natural gas, which has lower sulfur content relative to coal.

From an economic perspective, gas lowered compliance costs associated with new clean air mandates, making gas an increasingly attractive fuel option. With even greater emissions reductions called for in the coming decades, this trend undoubtedly will continue, with economic consequences. As Global Insight put it, “The gas price experiences of the last two years are the first real tastes of the economic costs of a gas-based environmental strategy.”

Nearly 84 percent of natural gas consumed in America is produced domestically. Certainly there is plenty of gas to be produced: a recent Interior Department study found that the Interior Mountain West holds 346 tcf of natural gas resources and reserves, amounting to the second largest domestic natural gas resource. Natural gas from these reserves could heat 55 million homes for 39 years.

Yet much of this gas is off limits to production. The National Petroleum Council, in its 2003 report on natural gas, estimates that 25 percent of the remaining gas supply in the lower 48 states underlies the Rocky Mountain area, and that 29 percent (70 tcf) is currently off limits to exploration and development.

Another 76 tcf of gas are estimated for restricted offshore areas in the eastern Gulf of Mexico, the Atlantic, and the Pacific. The eastern Gulf of Mexico is largely closed to exploration, with only limited, restricted areas available. The East Coast is completely closed to development while drilling on the West Coast also faces strong restrictions.

Some of this is due to statutory lease withdrawals, though federal regulations, combined with conditions and stipulations attached during the leasing and permitting process, are also to blame. The National Petroleum Council contends that, “Government policy encourages the use of natural gas but does not address the corresponding need for additional natural gas supplies.”

Environmental groups compound the problem through a concerted strategy of filing costly, time-consuming litigation to block drilling projects. Peter Morton, an attorney with The Wilderness Society, said on January 21, 2003, “If you bid on a lease on public land, you can expect (environmental litigation).”

So as demand for gas is growing, access to gas supplies has been decreasing, contributing to the current crisis. Successful policy reforms could reap major benefits for the

American people. According to the National Petroleum Council, increased access to U.S. resources could save consumers \$300 billion in natural gas costs over the next 20 years.

## **THE BARRIERS**

Any discussion of how federal law impacts energy development must begin with the National Environmental Policy Act, or NEPA. Considered to be the “Magna Carta” of environmental law, NEPA guides all federal actions that impact the environment, including leasing and permitting for natural gas production.

The NEPA process has become a massive bureaucratic constraint on natural gas production. It requires that federal agencies—and sometimes state and local governments and tribal authorities—collaborate in estimating and disclosing the environmental impacts of any proposed federal action (in the case of natural gas, the Bureau of Land Management (BLM), the Environmental Protection Agency, the Fish and Wildlife Service, the Forest Service, the Federal Energy Regulatory Commission, and other agencies usually have a role). A “federal action” includes leasing, permitting, drilling, and transporting natural gas on federal lands.

There are 2 major steps in the NEPA process: conducting an Environmental Assessment (EA) to determine whether a proposed activity is likely to have any significant environmental impacts, and then, if an affirmative determination is made, an Environmental Impact Statement (EIS) must be prepared before the agency can approve the activity.

These two steps alone—the entire process can involve several steps, depending on different scenarios—can take months, and sometimes years. An EA takes a minimum of 2 to 3 months. Today, more and more companies must shoulder the burden of doing an EIS—preparation for an EIS can cost millions of dollars to complete.

An EIS is often extremely complicated, sometimes incorporating input from several different federal agencies. An EIS must consider both the direct effects and the cumulative effects of all related activities that could impact the environment. Predicting those impacts is often more art than science, and can require computer simulations of complex air and groundwater models.

Even after an EIS is complete, gas producers face interest group lawsuits, and several layers of bureaucracy in the permitting process, which is often laced with heavy restrictions, making production an extremely costly, time-consuming exercise. Because of the protracted regulatory process, construction on the Vector gas pipeline from Chicago through Indiana, Michigan, and Ontario, took three years just to get started. The environmental assessment, permitting and inspection costs for the U.S. portion of the project were approximately \$20 million.

Or consider the experience of Prima Energy, a Denver-based oil and gas company. In his August 15 testimony before Speaker Hastert’s Natural Gas Task Force, Richard Lewis,

Prima's chairman and CEO, chronicled the company's tortuous odyssey through NEPA and the permitting process:

“Prima began the process of applying for the Forest Service permits on January 22, 2002. These lands are managed by the Forest Service and are part of the Thunder Basin National Grasslands, which is comprised of scattered parcels indistinguishable from the surrounding private lands. The Forest Service required Prima to pay for a third-party Environmental Assessment (EA). The EA concluded this drilling would cause No Significant Impact. However, an environmental group appealed the Forest Service's decision in November 2002 at which time the Forest Service remanded its own decision back to the District Office of the Forest Service for clarification. The permits were finally issued on July 10, 2003: 556 days after the permitting process had commenced. Prima's cost to comply with the Forest Service permitting regulations was \$7,958 per well. That is 13 times the cost and 37 times longer than the permitting of private lands. It is 2.4 times the cost and 7 times longer than permitting the BLM lands.

The Bureau of Land Management now takes an average of 175 days to approve a permit to drill a well, a process that, according to BLM's own regulations, should take just 30 days. In just four out of the 25 BLM Field Offices (Buffalo, Farmington, Pinedale and Vernal) there is a total backlog of 1,700 permits. In short, the interval of time between exploring for gas and actually drilling it and delivering to the market is increasing.

In addition to wading through the NEPA and the oil and gas permitting process, natural gas producers are subject to additional restrictions and stipulations attached to environmental laws, such as the Clean Air Act, the Clean Water Act, and the Endangered Species Act.

Bureaucratic obstruction is even blocking construction of gas-fired power plants. On May 17, 2001, officials in Solano County, California approved permits for three 50-megawatt gas powered plants, proposed by Texas-based power developer Panda West LLC. The approval came amidst the California power crisis, which was sparked in part by lack of energy supply.

The projects, however, were stopped after the Fish and Wildlife Service intervened, on grounds that at least one of the plants would disturb a vernal pool, which was habitat for the fairy shrimp and delta beetle. Yet the pool was located, according to Solano County officials, “several miles away” from the proposed project site, and the Fish and Wildlife Service had no documentation supporting its contention that the pools were habitat for the beetle or fairy shrimp. Moreover, the Fish and Wildlife Service provided no biological studies to buttress its finding that a high degree of mitigation was required to protect the species.

## **LIQUEFIED NATURAL GAS**

One way to meet growing domestic demand for natural gas is through imports of liquefied natural gas (LNG). With producers finding it ever more difficult to bring domestic gas resources to market, the booming LNG global market looks increasingly attractive.

Federal Reserve Chairman Greenspan argued in June that advances in LNG technologies hold great promise. “As the technology of LNG liquefaction and shipping has improved, and as safety considerations have lessened,” Chairman Greenspan said, “a major expansion of U.S. import capability appears to be under way. These movements bode well for widespread natural gas availability in North America in the years ahead.”

Currently LNG imports comprise about 1 percent of natural gas used in the U.S. Though Chairman Greenspan noted though LNG can help meet demand, he also stressed that preexisting regulatory barriers are blocking construction of LNG facilities. “Environmental and safety concerns and cost have limited the number of LNG terminals and imports of LNG,” he said.

Siting issues and environmental regulations related to construction of new LNG terminals are complex and burdensome. In fact, building an LNG terminal can take up to a decade. For this and other reasons, imported LNG is more realistically viewed as an important, yet incremental, component of our energy portfolio, and not as a viable long-run option.

## **THE FUTURE**

If this regulatory predicament persists, natural gas prices will hover at unsustainable levels, putting a drag on our economy for years to come. This is a problem that Congress must address directly. On the other hand, as Congress considers environmental issues, it must avoid *exacerbating* the current crisis—that is, it must balance environmental protection with economic growth, while ensuring a low-cost energy supply.

This is especially true for proposals to reform the Clean Air Act. Last year, President Bush introduced the Clear Skies Act, which is the most aggressive presidential initiative in history to reduce power plant emissions. Clear Skies, which I introduced with my colleague Sen. George Voinovich (R-Ohio), would reduce emissions of mercury, sulfur dioxide, and nitrogen oxide by 70 percent by 2018.

Along with providing substantial health benefits for the American people, Clear Skies has realistic caps and timetables that give industry certainty and flexibility to meet emissions reduction targets. Thus Clear Skies balances economic growth and environmental protection.

Moreover, under Clear Skies, coal remains a major source of the nation’s electricity, preventing large-scale fuel switching to natural gas. Natural gas, of course, must remain an integral part of our electricity portfolio, but a precipitous reduction in coal use in favor of natural gas could have deleterious consequences. The National Petroleum Council

says that “lack of flexibility of fuel consumption” will “lead to higher prices, which, in turn, bring negative impacts on gas intensive industries and the economy as a whole.”

The alternatives to Clear Skies fail to achieve a rational balance. Among other things, competing bills stringently control carbon dioxide emissions. This is unwise, not least because there is no scientific evidence to justify such a course. By any measure, it would significantly harm the American economy.

As the NPC stated, “Natural gas consumption for power generation would clearly increase under any CO<sub>2</sub>-reduction scheme during the time frame of this study, placing enormous demand pressure on natural gas. This would likely lead to much higher natural gas prices and industrial demand destruction.”

The Clean Power Act (S. 366) calls for steep reductions in CO<sub>2</sub>. The Energy Information Administration found that S. 366 would cause rapid fuel switching from coal to natural gas, increasing natural gas-based electricity generation by 60 percent. EIA warned that under the Clean Power Act “it is far from certain that the power sector would be able to move from dependence mostly on coal to dependence on natural gas and renewables in a relatively short time period without encountering supply problems.”

In addition to the Clean Power Act, S. 139, the Climate Stewardship Act, introduced by Sen. Joe Lieberman (D-Conn.) and cosponsored by Sen. John McCain (R-Ariz.), would cause a dangerous increase in the price of natural gas. Under S. 139, according to EIA, natural gas prices would increase 16 percent in 2010 and 46 percent in 2025 compared to the reference case.

This would have profound impacts on domestic manufacturers. The chemical, steel, and aluminum industries, EIA found, “participate in highly competitive international markets and would be expected to lose markets if domestic energy prices increase relative to foreign energy prices.”

S. 139 is very similar to the Kyoto Protocol, which the United States Senate unanimously rejected in 1997 by a vote of 95 to 0. Kyoto calls for dramatic reductions in CO<sub>2</sub> and other greenhouse gases. President Bush rejected Kyoto in 2001, saying he would not submit it to the Senate for ratification.

Canada, however, ratified Kyoto in 2002, a fact that poses serious harm to U.S. natural gas supplies. In 2002 Canada exported 3.8 tcf to the U.S. According to the Energy Information Administration, nearly 94% of total U.S. natural gas imports come from Canada. Under Kyoto, Canada must reduce its emissions 75 percent below 1990 levels by 2050. To meet those targets, it will turn to natural gas to reduce greenhouse gas emissions. Ultimately that means lower exports to the U.S.

According to Dr. Lynne Kiesling, director of economic policy at the Reason Foundation, “If Canadian demand for natural gas increases to fuel their own power needs, then barring a substantial increase in Canadian drilling, there will be much less Canadian

natural gas available for export to the U.S. Most of our imported natural gas comes from Canada, so the dislocation to the U.S. natural gas market would be staggering.”

## **CONCLUSION**

Solving the nation’s natural gas crisis is essential to the long-term health of the American economy. Congress must adopt prudent, meaningful reforms that address problems associated with access to natural gas supplies. President Bush recently proposed much-needed reforms to NEPA, something Congress should also consider.

In turn, it must avoid taking the precipitous step of mandating reductions of CO<sub>2</sub> emissions. Such a step is not justified by science, and adopting Kyoto-like policies, such as the Climate Stewardship Act, would seriously strain natural gas markets and threaten the viability and competitiveness of the American economy.