Natural Gas Supply

Short Term and Long Term

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Good morning, Mme. Chairman, and esteemed members of Congress. It's my privilege to appear before you today. My name is Keith Rattie. I'm the Chairman, President and CEO of Questar Corporation. Questar is an integrated natural gas company headquartered in Salt Lake City. We have significant businesses in each part of the natural gas value chain -- upstream exploration and production, interstate pipelines, and downstream retail gas distribution. We operate primarily in the Rockies and the Midcontinent. We're one of the fastest growing gas producers in the country. Our interstate pipeline companies move gas from the Rockies to energy markets in the West. Our retail gas distribution company serves over 750,000 homes and businesses in Utah, Wyoming and Idaho.

I'm here testifying today on behalf of the American Gas Association ("AGA") and its natural gas utility members. AGA is grateful for the opportunity to provide input on the natural gas supply issue that has been so much in the news of late. AGA is comprised of 191 natural gas distribution companies, which deliver gas throughout the United States. AGA member companies deliver approximately 83 percent of the natural gas used by more than 64 million customers nationwide.

This past winter, America received a wake-up call – our second in the past three years. Natural gas prices shot above $8 per Mcf at the Henry Hub for the first time since 2001. Spot prices in the Northeast at times exceeded $20 per Mcf. This spring, natural gas prices have remained well above historic levels for this time of the year. High prices convey a simple message: we have a natural gas supply problem.

It is a problem largely of our own creation.

I have three objectives today. First, I'll briefly explain why the only appropriate near-term response to high natural gas prices is to let the market work, and I'll try to give you some comfort that the market is working. Second, I'll define the magnitude of the natural gas supply gap over the next two decades, and explain why LNG imports alone will not be adequate to close this gap. Third, I'll recommend several actions that Congress can take to help bring natural gas prices down longer term.

As Federal Reserve Chairman Greenspan noted in his testimony to Congress last week, today's natural gas market conditions have been a long time in the making. But what Mr. Greenspan didn't tell you – and what Congress needs to understand – is that today's high natural gas prices are largely the result of policy choices that have encouraged greater natural gas consumption while impeding development of new supplies. Most American consumers are probably unaware that these choices have been made on their behalf.

Predictably, consumers faced with higher gas bills are calling upon their elected representatives to "do something." In the short term, about the only thing Congress can do is let the market work. The good news is that the market is working. On the supply side, the U.S. natural gas rig count has jumped over 33% since the first of this year, and it will rise further. A major pipeline expansion from Wyoming to California went into service in May, bringing new supplies and lower prices to Southern California. LNG import terminals in Georgia and Maryland have been expanded, and at least six new terminals are advancing in the permitting

process. LNG ship construction is booming – the global LNG shipping fleet is set to rise by over 40% in the next 3 to 4 years. Meanwhile, high prices are driving down demand – albeit at the expense of economic activity and the well being of gas-dependent U.S. manufacturing companies, notably the U.S. petrochemical industry.

This is just what you'd expect from a competitive, deregulated natural gas market. With all due respect to those in Congress who are calling for conservation, the market is way ahead of you. Conservation is what happens when prices rise.

There's more encouraging news. Last week, the Energy Information Administration (EIA) reported a record injection of 125 billion cubic feet (bcf) of natural gas into underground storage – the second straight week in which storage injections topped the 100-bcf level, well above historic averages. AGA member companies are stepping up -- natural gas storage, which at the end of this past winter stood at record low levels, is being refilled at a record pace. Barring abnormally hot weather this summer, storage should return to close to normal by November, ensuring that consumer needs are met next winter.

In response to this record storage injection, prompt-month gas prices plunged 10% in one day last week, two days after Mr. Greenspan's testimony. Indeed, the forward natural gas price curves signal that prices will be 25% lower one year from today.

To be sure, high prices are taking their toll on energy consumers. While some sectors of our economy benefit from high prices in the short term – notably producers and the companies that provide services to producers – in the longer term, high prices are not in anyone's interest. AGA members, working with state regulators, are taking steps to soften the impact of high prices. The Low Income Home Energy Assistance Plan (LIHEAP) is providing help to low income residential customers, although funding for that program is chronically short of needs. Some AGA members, with cooperation from state regulators, have hedged to manage price volatility.

If this all sounds familiar, it's because we've seen this movie before. Just two and a half years ago a confluence of events -- cold winter, hot summer, and lackluster drilling activity -- drove natural gas prices to levels comparable to what we have seen in 2003. Then, as now, the market responded – drilling activity picked up, fuel switching and conservation kicked in, and prices retreated. Again, just what you would expect.

While the only sensible option for policymakers in the short run is to let market forces work, in the longer term the most important thing that Congress can do to help ensure natural gas supply keeps pace with demand is to remove the unnecessary barriers to domestic natural gas development.

Let me explain by first defining the "supply gap" – that is, the difference between current domestic natural gas supply and expected demand.

The EIA in its Annual Energy Outlook 2003 predicts that U.S. natural gas consumption will increase at an average rate of 1.8% per year to about 35 trillion cubic feet (tcf) per year in 2025, from 22.7 tcf in 2001 – a 50% increase over the next two decades.

Clearly, much of this demand growth has already been pre-built into the U.S. energy market. We've added over 150,000 megawatts (MW) of new gas-fired electric generation in the U.S. since 1999 -- the equivalent of about 70 Diablo Canyon nuclear power plants. Now, some are second-guessing the fact that this country has bet its electricity future on natural gas. In reality, natural gas has become the fuel of choice for power generation in part because it is the most economic and environmentally benign fossil fuel, and in part by default. While getting permits to build a new gas-fired power plant can be very difficult and time consuming, it is virtually impossible to get permits to build new nuclear, coal or hydroelectric plants. Windmills and other renewable energy alternatives generate a lot of enthusiasm in some circles – but not much electricity.

Given this enormous investment in gas-fired power generation, and given the strong preference for gas in the residential and commercial sectors, the only apparent prerequisites for natural gas demand growth are a growing economy and normal weather. Simply put, natural gas is the fuel of choice for many consumers.

So let's put the EIA's projected 35-tcf per year U.S. gas market into perspective. A 35-tcf per year market implies a jump in average daily gas production from about 60 bcf per day today to about 95 bcf per day in 2025 -- a 35 bcf per-day increase in deliverability. To put this 35 bcf per day supply gap into perspective,

current production from the entire Gulf of Mexico is only about 14 bcf per day, and imports from Canada are about 10 bcf per day. Moreover, LNG imports last year averaged just 0.6 bcf per day, about 1% of U.S. supply.

The EIA predicts that increased LNG imports will help close the supply gap over the next two decades. Indeed, Mr. Greenspan summed up his remarks by stating that a major expansion of U.S. import capability would ensure widespread natural gas availability in the years ahead.

Clearly, there are enormous amounts of stranded gas around the world that can be brought to the U.S. on LNG ships. Indeed, LNG developers around the world are responding to the price signals from the U.S. market. But given the magnitude of the supply gap, it will be a colossal mistake, in my view, if policy makers assume that LNG alone will solve our supply problem.

Some have suggested that the U.S. LNG imports will grow from less than 1 bcf per day today to perhaps 10 to 15 bcf per day in 20 to 25 years. Even if this turns out to be the case (and it may not, given the many hurdles facing LNG project developers) LNG imports would still fall far short of covering the future 35-bcf per day gap.

I would encourage you to be very skeptical about some of the numbers that get tossed around on LNG – numbers like a $2.50-$3.00 per Mcf price for LNG landed in the U.S. The questions that need to be asked when you hear these numbers are: where is that cheap LNG coming from, how much is available, for how long, and at what price?

In truth, global LNG production today is only about 15 bcfd, and nearly all available capacity is dedicated to existing long-term contracts for delivery to non-U.S. markets. Non-U.S. demand is growing faster than U.S. demand, and in many markets LNG prices today are as high as current U.S. gas prices. The major LNG-consuming countries – Japan, Korea, Taiwan, and within a few years China and India – have minimal domestic natural gas resources and thus are dependent upon LNG imports. Competition from countries that have no viable domestic gas alternative will likely drive global LNG prices higher in the future.

For these reasons, and given the strong “not-on-my-beach” opposition to siting LNG terminals, a major supply impact from LNG seems a tall order. The magnitude of the challenge is even more daunting when one puts a finger on the map of the world where the major stranded gas reserves are located. Angola, Nigeria, Venezuela, and the Middle East are not exactly ideal places to invest the billions of dollars needed for gas production and liquefaction facilities.

In addition to LNG imports, Alaskan gas will likely be developed and transported to the U.S. lower-48. The proposed pipelines from Prudhoe Bay and the Mackenzie Delta, which are at least five and probably more like ten years from reality, together might eventually deliver 3 to 5 bcf per day. Alaska gas will help – but it is not the silver bullet for U.S. supply.

Canada, which currently exports about 10 bcf per day to the U.S., faces many of the same supply challenges as the U.S. Demand for gas is growing, and Canadian producers are on the same treadmill as their U.S. counterparts. Under optimistic conditions, Canada may be able to increase exports to the U.S. by about 3 to 5 bcfd over the next two decades.

So, let’s do the arithmetic. To close the future supply gap, we need to increase U.S. gas supply by 35-bcfd over the next two decades. If we take the most optimistic projections, LNG imports, Alaskan gas, and increased imports from Canada together might cover about half of the 35 bcf per day future supply gap.

The inescapable conclusion is that much of the incremental gas supply needed to serve a growing U.S. market must come from the U.S. lower-48 onshore and offshore. That implies that the burden of delivering a major increase in gas supply over the next 20-25 years will fall primarily on the shoulders of U.S. independent producers. This is a key point for policy makers. Except for Alaska and the deepwater Gulf of Mexico -- which incidentally is primarily an oil play, not a natural gas play -- the majors have essentially thrown in the towel in the US. They’ve taken their know-how and their capital overseas to drill in places like Angola, Kazakhstan, and Nigeria. With the U.S. gas market set to boom, U.S. independents are being called upon to perform a large and growing job on behalf of U.S. prosperity and energy security.

There’s only one way to get the job done. Simply put, we need to drill more wells in the U.S. lower-48.

The sobering reality is that we're already drilling a lot more wells today than we were five years ago, but production is still down. U.S. gas producers are on an accelerating treadmill, running harder to stay in place. The main reason: a typical well drilled today will decline at a faster rate than a typical well drilled a decade ago. This is partly due to technology, and partly due to the maturing of the accessible natural gas resource base. Moreover, because up to half of this country's current natural gas supply is coming from wells that have been drilled in the past five years, this decline trend is likely to continue.

Before we can grow gas supply, we first have to replace decline. The U.S. natural gas decline rate will range from 26 to 28 % this year. In practical terms, if we stopped all drilling today, one year from now U.S. natural gas production would be 26-28% lower than it is today. Accelerating decline helps explain why U.S. gas deliverability has been stuck in the 52-54 billion cubic feet bcf per day range for the past eight years -- again, despite an increase in gas-directed drilling.

The current situation notwithstanding, it's a mistake to write off domestic natural gas production. Yes, U.S. natural gas production has stagnated, but that has little to do with the adequacy and potential of the resource base. Please be assured of this point: North America is blessed with abundant natural gas resources. The National Petroleum Council (NPC) study in 1999 did a good job describing North American gas potential. Most of us in the industry believe that the resource base is more than adequate to supply a 35 tcf per year U.S. natural gas market in 20 to 25 years.

A growing percentage of U.S. gas supply today comes from plays that didn't even exist a decade ago. New technology has reduced both the costs and risk of exploration. New technology allows the industry to drill deeper, maintain or increase production in old fields, and develop unconventional gas that only a few years ago was considered uneconomic.

Indeed, technology will someday unlock vast amounts of natural gas trapped as hydrates beneath the ocean floor and the Arctic tundra. Some scientists believe that that there is enough potential in gas hydrates to supply the U.S. market for at least 100 years.

The bottom line: we're not running out of natural gas, and we're not running out of places to look for natural gas. However, we are running out of places where we are allowed to look for gas. The truth that must be confronted now is that, as a matter of policy, this country has chosen not to develop much of its natural gas resource base.

By some estimates 40% of this country's domestic natural gas resource base is either off limits to development, or open under highly restricted conditions. Onerous laws and regulations prohibit exploration in areas where there is huge potential for new supplies. Permitting has become next to impossible for new pipelines and LNG import terminals.

By many estimates 30 to 40% of U.S. potential natural gas resources are located in the Rockies region that includes Wyoming, Utah, Colorado, New Mexico and Montana. Indeed, the Rockies is the only region in the U.S. to deliver growth in production over the past 30 years, and it remains significantly underdeveloped. Three of the four largest U.S. onshore gas discoveries in the last 25 years are in this region.

The federal government manages more than 40% of the land in the Rockies. Despite all the attention given to federal agency performance in processing applications for permits to drill on federal lands, permits that used to take 30 days to process can now take up to a year or longer.

A vast and growing amount of federal acreage has been placed off limits for drilling.

It's time to ask: how large an inventory of untouchable acreage can the U.S. afford to maintain? Policies that emphasize preservation of land for recreational use over other uses have human consequences that have often been ignored – like higher energy prices, fewer jobs, a weaker economy, not to mention lower tax revenues for government.

Opponents of domestic gas development often exaggerate environmental concerns. The irony, of course, is that by choosing not to develop our most environmentally benign fuel, we're burning more coal, importing more oil, and running our aging nuclear plants harder than ever. Those who oppose drilling on federal lands exploit conflicts in federal laws to obstruct development. They offer no viable alternative -- only fantasies about a planet free from the scourge of hydrocarbon fuels. They prevail by intimidating lawmakers. If they continue to prevail, the American economy may be at risk.

Like it or not, our nation's economy will run on hydrocarbons for many years to come, and natural gas is the most benign hydrocarbon fuel.

Moreover, the industry has proven that our energy resources can be developed without harming the environment. Yes, drilling disturbs the surface, but not much, and not for long. Among the many technological advances made by the industry are improved methods of restoring land after the drilling rig has done its thing and gone. Advances in technology have allowed exploration and production companies to greatly reduce the footprint of their activities over the past two decades. Opponents of domestic energy development routinely ignore this fact.

Similarly, the argument that drilling drives wildlife to extinction is pure fiction. To the contrary, in most cases wildlife adapts and thrives in harmony with energy development.

The key question for policymakers is this: can we afford policies that leave vast amounts of our domestic natural gas reserves untested and undeveloped? If the consequences of these policies were understood, I believe most Americans would answer "no."

What role can Congress play? First, we need leadership. Congress can help forge a national consensus that natural gas is abundant, that development is good for our economy, and that our domestic natural gas resources can be developed without harming the environment.

Second, Congress must hold federal agencies accountable for streamlining permitting on high-potential federal land in the Rockies. Studies show that the average processing time for applications for permits (APDs) slowed by 60 percent in 2002.

Third, we need to develop our natural gas resources off the East and West coasts, and in the eastern Gulf of Mexico. It's time to rethink our fear about exploring and producing gas in our offshore basins. Clearly, offshore platforms have a visual impact on the environment. But there is no evidence that offshore platforms hurt the environment. And, for the folks who live along our coasts who don't want to see a distant offshore platform on the ocean horizon, the industry has a solution. Subsea wells can reduce or eliminate the need for offshore platforms

Fourth, Congress should reaffirm the FERC's lead role in permitting interstate pipelines and LNG import terminals. Opponents of pipeline construction exploit conflicts in existing laws and overlapping jurisdiction to block pipeline projects. For example, the Coastal Zone Management Act has been invoked by states to block FERC-approved natural gas pipeline projects.

Finally, Congress should continue to let market forces allocate supply and demand. High prices signal the need for more investment. The industry is responding to high prices today with a rapid increase in investment. We have proven that we can get the job done – if we are allowed to – and we can do so without harming the environment.

Madam Chairman, we applaud your focus on the natural gas supply issue. Now, I will be glad to field your questions.