Executives Address Natural Gas Supply

Natural Gas Supply Executive Roundtable

November 9, 2004
Dallas, Texas

Introduction

America has enough natural gas to meet growing demand for generations to come. The challenge facing our nation is how do we access that supply for residential, commercial and industrial consumers. Government and industry leaders must address the following questions: What can be done to address current and future supply issues? How long will natural gas price volatility continue to exist and impact consumers? Will LNG have an impact on the supply needs? What policies and actions will make a difference? How do we balance supply needs with environmental concerns? To ensure the formation of strong public policies and meaningful actions that will address supply challenges, the American Gas Foundation (AGF) sponsored an invitation-only *Natural Gas Supply Executive Roundtable* on the campus of Southern Methodist University in Dallas, Texas.

The November 2004 roundtable featured lively and engaged panel discussions on conventional supply issues, gas price volatility, new supplies to meet future needs, and adapting infrastructure to future realities. Panel participants, moderators and attendees included energy policy experts, gas customers, regulators and representatives of local distribution companies, producers and pipelines. This paper summarizes the panel discussions and the policy recommendations made by the roundtable participants.

Executive Summary

Participants in the Executive Roundtable generally agreed that natural gas production from existing North American fields is declining and that the industry must look elsewhere for near- and mid-term supplies. A minority view, however, was that there is no particular cause for alarm and that market volatility often attributed to declining supplies is instead the result of a change in the behavior of some large producers. Both high prices and volatility have hurt industries, such as chemicals and fertilizers, which are heavily dependent on natural gas.

Liquefied natural gas (LNG) is an important supplement to North American supplies but is far from a complete solution. Development of new LNG facilities is hampered by both financial and “Not In My Back Yard (NIMBY)” issues. In the longer term, gas from Alaska is expected to make a substantial contribution to the U.S. supply portfolio. Timely approvals are key for needed pipeline construction projects, and pipelines need a single agency to deal with in getting construction approvals.

Participants recommended that the industry focus on several critical steps:

1. Open up drilling in restricted areas such as portions of the Rocky Mountains and the Gulf of Mexico
2. Support an energy bill that has wide appeal rather than one that satisfies limited interests
3. The Federal Energy Regulatory Commission (FERC) should require field-by-field production data to be reported in a timely manner
4. The federal government should sponsor more research on deep formations, unconventional gas and methane hydrates
5. The industry should explore ways to ensure that it has enough petroleum engineers and scientists
6. Utilities should be allowed to enter into long-term contracts for gas supply and to move away from traditional cost-of-service ratemaking
7. More storage should be developed on the utility side of the business
8. The problems of the aging of the offshore rig fleet need to be addressed
9. The industry must abandon a "blame game mentality" and find ways to educate the public and government officials about energy infrastructure, LNG safety and the ability of the industry to produce gas in an environmentally responsible way.

Conventional Supply Issues

The North American natural gas supply outlook is uncertain. Domestic production increased throughout the 1990s and in the beginning of this decade before falling off in 2002. There appears to have been only a modest rebound, if any, in 2003, despite higher prices and healthy drilling activity. One view is that there is no particular reason for alarm over domestic supply. This view holds that the market volatility that some have attributed to declining supplies is instead the result of a change in the behavior of some large producers, who have adopted a "just in time" drilling approach that promotes volatility when the unexpected occurs - like a hurricane in the Gulf of Mexico.

The more conventional position is that production from existing fields is declining and that the industry must look elsewhere for near- and mid-term supplies. Many promising areas are off-limits to gas production or accessible only under highly restrictive conditions. In Canada, 25 percent of western production is held by royalty trusts, which cannot drill. In the United States, many promising areas are off-limits to drilling and exploration for environmental reasons (many of which are decades old and do not reflect the new technology being used today). This includes portions of the plains surrounding the Rocky Mountains and the Gulf of Mexico.

The consolidation of major oil companies does not bode well for domestic energy production. Many majors appear to have an international, rather than a domestically oriented, approach. Only 10 percent of drilling activity in the United States is pure exploration. In general, the industry has become risk averse. Simply acquiring proven reserves doesn't add to overall supply. In addition, the jury is still out on unconventional plays such as Barnett Shale. Future price levels will have a significant effect on domestic gas production.

While LNG is generally considered an important supplement to North American supplies, it will not totally address the nation's growing supply needs. And despite public perception, alternative energy sources—defined as anything other than oil or gas—will not be in a position to make a major contribution to the supply picture for many years to come. The gas industry needs to focus on opening up restricted areas, and it faces a major communications challenge in persuading the public that it can produce natural gas in non-park public lands without harming the environment.

Gas Price Volatility

Increasing gas prices have been very costly for industries that depend on gas for manufacturing and production. The chemical industry in the United States is 70 percent dependent on natural gas. Price increases have cost Dow Chemical $2.7 billion in 2003 and $1.9 billion in 2004. As a result, the company is shutting U.S. plants, resulting in significant job loss. Because the U.S. currently has the world's highest natural gas prices, it is even advantageous for U.S. chemical companies to produce in high labor cost Germany. Chemical companies are looking at alternative fuels, such as LNG and synthetic gas produced from coal, while also pursuing energy efficiency and conservation efforts. As for the gas-dependent nitrogen fertilizer industry, 36 percent of the U.S. industry has been shut down or mothballed since 2000, primarily because of high gas prices.

Companies use financial tools to hedge their price risk and mitigate volatility. Gas prices are more volatile than oil prices but not as volatile as electricity. High prices rather than volatility per se may be the most serious problem for gas-consuming industries, but for residential customers, volatility is a serious issue.

The Kyoto Treaty will affect long-term gas prices, which is in effect even though the United States has not ratified it. The price of oil will also have a substantial influence on long-term gas prices.

New Supplies to Meet Future Needs

Opinions vary widely on the effect of LNG on the nation's future natural gas supply picture. The United States could absorb most of the world's LNG at $4 or $4.50 per thousand cubic feet, but it would be competing with such emerging market economies as India and China. Furthermore, it is unclear how many LNG projects will actually get built in this country. A lack of institutional memory on LNG is slowing project development. Suppliers don't know which projects to support, NIMBY concerns are widespread, and independent projects are unable to obtain supply commitments until the projects are fairly far along. To bring 6 trillion cubic feet of LNG to the United States, 12 to 14 new facilities are needed. Regional planning may be an attempt to take market forces out of the equation in facilities siting. It appears that it will be 2008 before significant incremental LNG supplies can come on line. Gas quality issues are being addressed nationally through interchangeability activities. The public needs to be educated about LNG safety and security, since public support is one of the most crucial factors in gaining approval for LNG facilities.

In the longer term, gas from Alaska may make a substantial contribution to the U.S. supply portfolio. It is very likely that an Alaskan gas pipeline will be built, even in the light of increased LNG imports, but the project is probably a decade away from becoming a reality.

Adapting Infrastructure to New Realities

On the regulatory side, the U.S. Department of Transportation's Office of Pipeline Safety needs strong technical leadership. The aging pipeline infrastructure lacks redundancy. It must be recognized that some inspection regimes will cause pipeline system shutdowns, and some needed repairs will have an effect on gas supply. Regulatory streamlining could help in this regard. For pipeline construction projects, timely approvals are key. Pipelines need a single agency, not a multitude of agencies, to deal with in getting construction approvals, and they need a federal agency that will support them in dealing with public concerns at the local level. Further, new tariffs are needed to encourage the development of gas storage.

The ability to develop sufficient infrastructure is all about returns; it is questionable whether risk-adjusted returns will adequately compensate the industry for building new capacity. The investments planned by the pipelines over the next five years won't keep up with the need for new capacity. As for utilities, they have seen a constant decline in usage per customer, meaning that they have a problem earning their allowed rate of return. It will be a challenge for the gas industry to raise enough capital to ensure the infrastructure gets built where it needs to be built to move gas from frontier areas, the Rockies, the Arctic and the places where LNG comes into the country.

Conclusions and Policy Recommendations

- The industry must focus on opening up drilling in restricted areas such as portions of the plains surrounding the Rocky Mountains and the Gulf of Mexico. It needs to convince the public that it can produce gas in an environmentally responsible way and that because it is the most environmentally friendly fossil fuel, gas occupies the moral high ground in the resource debate.

- Rather than revisiting past attempts at crafting comprehensive energy legislation, the industry should support a bill that has wide appeal rather than a bill that merely satisfies a series of limited interests. Legislation should address:
    - The near-term issues of the streamlining of permitting, LNG siting and energy efficiency
    - The mid-term issues of LNG facility construction and the opening of the Rockies to development
    - The long-term issues of an Alaska gas pipeline, opening of the eastern Gulf of Mexico to development and the encouragement of advanced production technology

- The industry should work on improving the public's understanding of energy infrastructure, focusing on educating local opinion leaders on the scientific and economic aspects of the topic. Existing communication efforts should be used in this task, including FERC's stakeholder outreach initiatives, the Department of Energy's LNG effort and the Office of Pipeline Safety's public awareness requirements.

- Data is lacking on the adequacy of gas supply. FERC should require that field-by-field production data be reported in a timely manner.

- Research & development is needed on deep formations, unconventional gas and methane hydrates.

- Utilities need to be able to enter into long-term contracts for gas supply.

- Utilities need to move beyond traditional cost-of-service ratemaking to something that better aligns the interests of the utilities with the broader interests of their customers, including the need to conserve natural gas.

- More petroleum engineers and scientists are needed in the U.S. Possible solutions are encouraging the immigration of qualified people and granting free tuition to students in this area who make a commitment to work in the industry for a specified period of time.

- The industry must address the aging of its offshore drilling rig fleet; the approximately 550 drilling rigs currently in use throughout the world have an average age of 25 years.

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American Gas Foundation

Founded in 1989, the American Gas Foundation is a 501(c)(3) organization that focuses on being an independent source of information research and programs on energy and environmental issues that affect public policy, with a particular emphasis on natural gas. Overseen by a Board of Trustees composed of executives from the natural gas industry, the AGF has delivered key public policy reports such as *Fueling the Future*, *Meeting the Gas Supply Challenge of the Next 20 Years*, and *Natural Gas and Energy Price Volatility*. Scheduled for release in early 2005 are the *Safety Performance and Integrity of the Natural Gas Distribution Infrastructure, Public Policy and Real Energy Efficiency, and Natural Gas Outlook to 2020* studies.

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