

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference

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Docket No. AD12-1-000

**POST-CONFERENCE COMMENTS
OF THE
NATURAL GAS SUPPLY ASSOCIATION**

The Natural Gas Supply Association (“NGSA”) submits these post-conference comments in response to the Reliability Technical Conference, Docket No. AD12-1-000, held at the Federal Energy Regulatory Commission (“FERC” or “the Commission”) on November 29 and 30, 2011. These post-conference comments are filed pursuant to the procedures established in the Reliability Technical Conference Agenda issued on November 9, 2011 in the above-captioned proceeding.¹

NGSA is a trade association which represents integrated and independent companies that produce and market domestic natural gas. Established in 1965, NGSA encourages the use of natural gas within a balanced national energy policy, and promotes the benefits of competitive markets to ensure reliable and efficient transportation and delivery of natural gas and to increase the supply of natural gas to U.S. customers.

I. Executive Summary

Natural gas currently fuels a quarter of the nation’s power generation and demand for natural gas is expected to continue to grow in the power sector as old and inefficient plants are retired. Given the significant role gas will play in ensuring that power markets maintain a high degree of reliability, we are fortunate to have abundant supplies of natural gas to meet all forecasted natural gas demand.

¹ Reliability Technical Conference Agenda, Docket Nos. AD12-1-000, *et al.*, (Nov. 9, 2011).

During the panel discussions at the two-day conference, some concerns were expressed by participants regarding relying more heavily on natural gas in the power sector. For instance, concerns were raised about whether: (1) increased regulation of shale production will impact the overall supply of natural gas available for power generators,² (2) “a dash to gas” will lead to higher prices,³ (3) natural gas outages will cause vulnerabilities on the power grid,⁴ and (4) there is sufficient coordination between the gas and power sectors.⁵

As an organization representing natural gas producers, NGSA is pleased to provide our natural gas industry perspective on the concerns expressed at the conference. NGSA and its members take concerns expressed by our customers and regulators very seriously and we look forward to participating in future proceedings in order to provide facts about the operation as well as the current market fundamentals of the natural gas industry.⁶

II. The U.S. has an abundant supply of natural gas from a vast array of reliable supply sources.

As stated in the recent NPC Report:

America's natural gas resource base is enormous. It offers significant, potentially transformative benefits for the U.S. economy, energy security, and the environment. Thanks to the advances in the application of technology pioneered in the United States and Canada, North America has a large, economically accessible natural gas resource base that includes significant sources of unconventional gas such as shale gas. This resource base could supply over 100 years of demand at today's consumption rates. Natural gas, properly produced and delivered, can play an important role in helping the United States reduce its carbon and other emissions...

² See, e.g., Request for Evidence of Commissioner Philip D. Moeller on EPA Issues for the November 2011 Reliability Conference, Docket Nos. AD12-1-000, *et al.*, (Nov. 14, 2011) (“Moeller Request”).

³ See, e.g., statements of South Carolina Commissioner, David A. Wright, Docket Nos. AD12-1-000, *et al.*, (Nov. 30, 2011).

⁴ See, e.g., Prepared Statement of Deborah Le Vine, Director, System Operations, Cal. Indep. Sys. Operator Corp., Docket Nos. AD12-1-000, *et al.*, (Nov. 25, 2011) (“Le Vine Comments”).

⁵ See, e.g., Statement of Commissioner Phillip D. Moeller on FERC's Upcoming Reliability Technical Conference, Docket No. AD12-1-000 (Nov. 18, 2011).

⁶ The NPC Report provides much greater detail on the future of natural gas. See National Petroleum Council, Draft Report, *Prudent Development: Realizing the Potential of North America's Abundant Natural Gas and Oil Resources*, (Sept. 15, 2011), <http://www.npc.org> (“NPC Report”).

While shale and other unconventional gas resources are the new game changers, significant conventional resources are being produced in onshore and offshore areas. Lower and less volatile prices for natural gas in the past two years reflect these new realities, with benefits for American consumers and the nation's competitive and strategic interests, including the revitalization of several domestic industries.⁷

The natural gas industry has changed considerably in ten years. Prior to advances in shale production technologies, access to new areas for traditional natural gas development was limited and existing wells were maturing. However, in recent years, technological advancements combining horizontal drilling with hydraulic fracturing have changed this situation dramatically. The estimated natural gas resource base has increased an astounding 71% since 2000 and is still growing. Conventional resources also continue to be produced at significant levels both onshore and offshore. In 2000, the Potential Gas Committee estimated that the U.S. had 1,258 Tcf of natural gas. In 2011, this same group estimates that we have more than 2,100 Tcf.⁸ The following chart shows how significantly the natural gas supply landscape has changed over the past decade.

2001 to 2011 - A Decade Makes a Difference

Then	Now
➤ 60-year supply and falling	➤ 100+ years supply and growing
➤ Shale known but uneconomic to develop	➤ Flourishing production, vast shale resources now accessible
➤ Underground gas storage primarily traditional reservoir, operationally not very flexible	➤ Storage boom with more flexible salt-cavern facilities and additional market area storage
➤ Pipeline capacity growing incrementally	➤ 16,000+ miles of interstate pipeline added since 2000
➤ Rising prices with several spikes	➤ Plentiful supplies moderate prices and supply diversity

⁷ *Id.*, Executive Summary at 3.

⁸ See Report of the Potential Gas Committee, *Potential Supply of Natural Gas in the United States* (Dec. 31, 2010) at 5, <http://www.potentialgas.org/PGC%20Press%20Conf%202011%20slides.pdf>.

In addition to increased natural gas production, new gas storage facilities have been built closer to electric load, increasing operational and supply flexibility. Between 2008 to 2011, ICF International projected that our industry will have added more than 300 Bcf of storage, which is triple the amount of the previous three years.⁹ Unlike traditional storage that is typically only cycled once a year, many of these new storage facilities are capable of cycling gas supplies in and out multiple times per year. Salt dome storage may be able to cycle as many as six to twelve times a year, which provides the greater flexibility required for some gas-fired generation.

Natural gas pipeline infrastructure is also continuing to be built to connect new supplies to market. Over 16,000 miles of interstate pipeline was approved from 2000 to 2010 and EIA projects over 14,000 miles of new pipeline will have been built from 2008 to 2011, the biggest jump in pipeline investment in forty years.¹⁰ As producers, we work closely with pipelines to ensure that sufficient gas infrastructure gets built so that we can get our gas to the market.

The high level of natural gas supply diversity from conventional and nonconventional resources, gas storage, pipeline linepack and LNG imports, along with a robust network of pipeline systems, serves to provide a high level of security of supply for gas-fired power generation. This diversity adds to the flexibility and resilience of natural gas markets, diminishing the impacts associated with both scheduled and unscheduled outages. Increased shale production helps to further reduce the impacts related to hurricane outages that we have seen in the past, given that most shale development is not typically in close proximity to coastal regions susceptible to significant hurricane damage. Moreover, pipeline system redundancies, created through pipeline looping¹¹ and other system designs as well as the vast array of

⁹ ICF Field Level Database, September 2009.

¹⁰ See EIA, Office of Oil and Gas Report, Expansion of the U.S. Natural Gas Pipeline Network: Additions in 2008 and Projects through 2011 (Sept. 2009), available at <http://www.eia.gov/FTP/ROOT/features/pipelinenetwork.pdf>.

¹¹ Pipeline looping is a natural gas transmission pipeline running parallel to an existing pipeline generally separated by 25 feet from the existing pipeline for operating and safety reasons. (<http://www.mnpp.com/us/faq#n62>)

pipeline networks available to get gas to market, substantially aid in maintaining service in instances of interruption. With continued coordination between the gas and power sectors, we can work together to ensure reliability of service even when individual systems experience disruptions.

III. Strong efforts are underway to prudently develop shale gas and increased regulation in this area is not expected to deter development of such vast reserves.

On November 14, 2011, Commissioner Moeller issued a separate request for evidence on EPA issues in advance of the Reliability Technical Conference.¹² In his issuance, Commissioner Moeller posed the following question:

“The EPA apparently made statements that appear to question whether “fracking” of natural gas will be permitted in the future, which raises the question of whether future regulatory requirements imposed on fracking will allow access to sufficient quantities of natural gas to replace coal. Does this issue present a reliability concern?”¹³

Producers are working hard to ensure the security of those supplies and, for that reason, we do not believe that regulatory requirements on the development of shale gas will hinder producers’ ability to develop these important resources.

As the NPC Report emphasizes, realizing the benefits of natural gas will require environmentally responsible development, “[t]he critical path to sustained and expanded resource development in North America includes effective regulation and a commitment of industry and regulators to continuous improvement in practices to eliminate or minimize environmental risk. These steps are necessary for public trust.”¹⁴ As with any kind of energy production, risks exist in the production of natural gas. For this reason, “many, if not most, natural gas and oil companies have committed

¹² See Moeller Request.

¹³ *Id.* at 4.

¹⁴ NPC Report, Executive Summary at 2.

themselves to operating at high levels of performance with respect to environment, safety, and health impacts.”¹⁵

Natural gas producers have every incentive to ensure that natural gas is developed using the highest standards. Not only do we wish to protect our communities and environment, we have an economic interest in the ability to continue to produce our country’s vast shale resources in which huge investments are at stake. Consequently, NGSA members are committed to prudent development of shale as well as all natural gas resources and, to that end, are taking steps to ensure that shale production is done in a safe and responsible manner. We are confident that constantly improving our efforts and working closely with communities and regulators will allow for continued production of one of the greatest natural resources in our nation.

The industry has an excellent environmental and safety record on shale development, including the use of hydraulic fracturing to complete natural gas wells. Our industry is working hard to improve the amount of public information about shale gas operations, including posting detailed information on FracFocus.org about chemical constituents used in the fracturing of more than 5,000 wells.¹⁶ Also, we are working with the states to ensure strong compliance with state regulatory requirements and actively engaging with government on evolving federal and state legislation and rulemaking activities.¹⁷

IV. Natural gas is a clean and cost-competitive resource for the power sector.

Major advances in the recoverability of shale gas are helping to make gas an extremely cost-competitive resource in power markets. The Energy Information Administration (“EIA”) predicts that the annual average wellhead price will remain

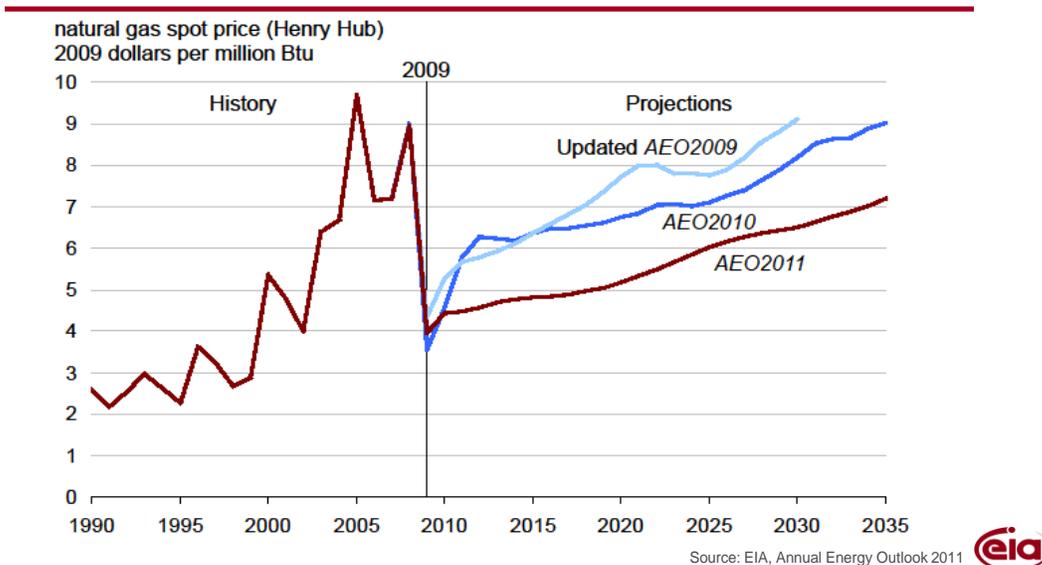
¹⁵ *Id.*, Executive Summary at 18.

¹⁶ FracFocus.org is a searchable database that is open to all members of the public. It was created by two groups of state regulators: the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission. Industry continues to work with these groups to discuss expanding the platform’s capabilities.

¹⁷ For greater detail on industry efforts pertaining to shale gas development, there are several valuable resources on the following websites that we highly recommend including www.anga.us, www.api.org, www.energyindepth.org, and www.naturalgas.org.

under \$5 per Mcf through 2022 and increases after 2022 are projected to reach \$6.53 per Mcf (in 2009 dollars) in 2035.¹⁸ See the chart below for comparison of various estimates for future natural gas prices.

As Supply Increases, Price Forecasts Have Dropped, With Henry Hub Now Forecast Under \$6.00 to Mid - 2020s



Natural gas is a prudent choice for both utilities and generators for a number of reasons in addition to the expected reduced volatility of natural gas prices. Gas-fired power plants are efficient, relatively clean sources of fuel with low emissions and they have relatively quick construction timelines as well as low capital costs. Since the life-cycle emissions for natural gas are about one-half that of coal, natural gas could help reduce emissions in the long-term in the U.S. by as much as 50% by 2050 based on a 2005 baseline.¹⁹

Certainly, as more power is generated by natural gas, there will need to be a higher degree of communication and coordination among our two industries.

¹⁸ See EIA, Annual Energy Outlook 2011 with Projections to 2035 (Apr. 2011), available at [http://38.96.246.204/forecasts/aeo/pdf/0383\(2011\).pdf](http://38.96.246.204/forecasts/aeo/pdf/0383(2011).pdf)

¹⁹ NPC Report, Executive Summary at 14.

V. Natural gas generation will play an increasingly important role in the growing ancillary services market as increased balancing and load following are required to manage the grid to accommodate renewable forms of energy.

At the conference, Deborah Le Vine, Director, Systems Operations for the California Independent System Operator Corporation (“CAISO”) commented on the need to ensure that increased ancillary services can be provided and that renewable forms of energy can be reliably integrated. Ms. Le Vine stated that California’s load regulation requirements have already substantially increased and that ancillary and similar balancing services are becoming increasingly important to maintaining reliability of the power grid.²⁰ We agree with and support Ms. Le Vine’s statements.

While natural gas reliably provides nearly a quarter of the nation’s overall power supply today, anticipated incremental demand increases and retirements will require that natural gas-fired generation be increasingly relied upon to provide base-load generation, as well as balancing services required for intermittent Variable Energy Resources (“VERs”) to be reliably integrated into the power grid. Dispatchable resources, particularly quick-start gas generation technologies, can offset the reliability challenges posed by renewable resources, and represent a generation source perfectly suited to providing the swift responsiveness needed to balance greater penetration of intermittent renewable resources onto the power grid. Quick-start gas-fired units can come online in as little as ten minutes, and can respond reliably in real time when renewable generation is interrupted. To guarantee that adequate load following and balancing are available, the Commission should ensure that markets for ancillary and other balancing services, including load following, are structured in a fair, non-discriminatory manner.

²⁰ See Le Vine Comments at 7, and Attachment 2, slide 3.

VI. Conclusion.

NGSA appreciates the opportunity to comment on the role of natural gas in ensuring the reliability of the nation's power supply. We look forward to future participation in this and similar proceedings.

Respectfully Submitted,
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December 9, 2011