

December 14, 2011



**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**Reliability Technical Conference**

**Docket No. AD12-1-000**

**POST TECHNICAL CONFERENCE COMMENTS  
OF AMERICA'S NATURAL GAS ALLIANCE**

America's Natural Gas Alliance (ANGA) appreciates the opportunity to submit these comments on the issues covered during the November 29 – 30 Technical Conference on reliability of the Bulk-Power System and in response to Commissioner Philip D. Moeller's November 14 request for evidence.

ANGA is an educational and advocacy organization dedicated to increasing appreciation for the environmental, economic, and national security benefits of North American natural gas. ANGA's members include the leading, North American independent natural gas exploration and production companies. The collective natural gas production of the ANGA member companies is approximately nine trillion cubic feet per year, which represents around 40 percent of the total annual U.S. natural gas supply.

The safe and environmentally-responsible development of our domestic stores of natural gas has been, and increasingly will be, an important component of America's energy supply and economic health. Natural gas is a clean-burning, efficient, and cost-effective fuel that offers the potential both for significantly decreasing air pollution emissions and promoting America's energy independence.

**Natural Gas Benefits:**

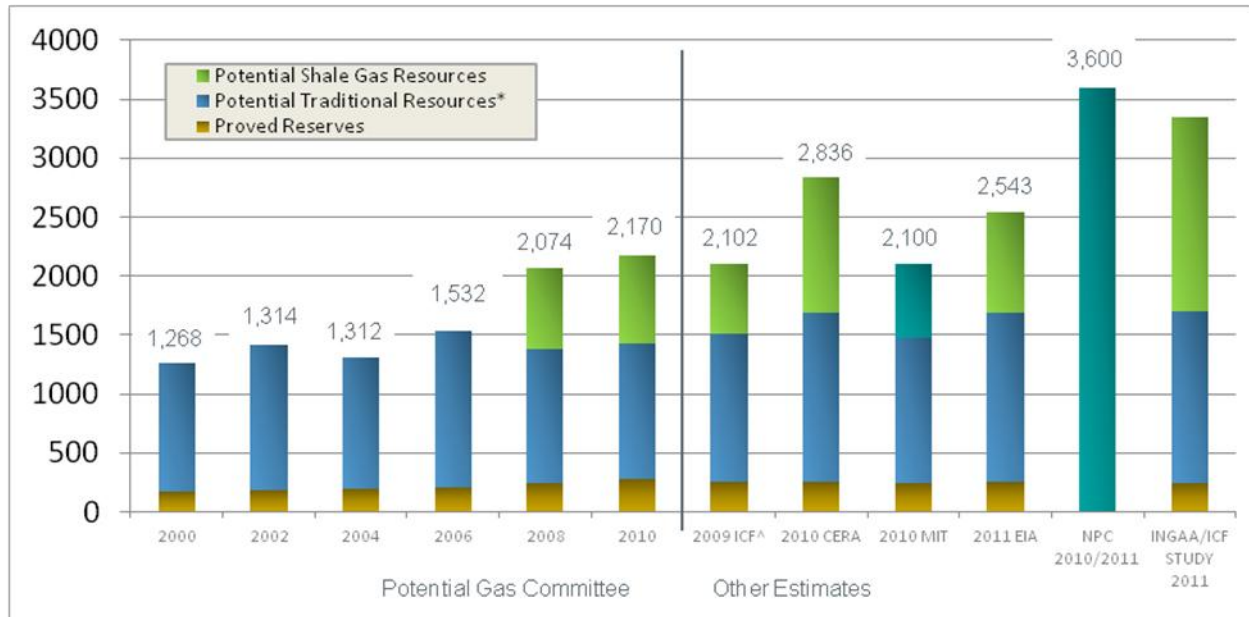
Natural gas-fired power plants can play an important role in maintaining electric system reliability as older, inefficient generating units are retired from the system and plants are taken off-line to complete pollution control retrofits. The advantages of natural gas include low air emissions, abundant domestic supply, low cost, and availability for deployment.

**Environmental:**

Natural gas-fired power plants produce far less carbon and smog-forming nitrogen oxides compared with alternatives, and emit virtually no sulfur dioxide, particulate matter, mercury, or other hazardous air pollutants. Natural gas is a domestically abundant fuel that enables high efficiency power generation.

### Supply:

Estimates of U.S. recoverable natural gas resources have dramatically increased in recent years, reflecting the advances in technology that allows for the development of unconventional resources – namely hydraulic fracturing coupled with horizontal drilling. The figure below illustrates this growth over the past decade, reflecting a growing recognition of the abundant domestic supply. According to the U.S. Energy Information Administration (“EIA”), for example, the total recoverable natural gas resource base is 2,543 trillion cubic feet. Vast supplies of newly-recoverable shale gas are providing our nation with an opportunity to pursue a clean energy future and, as Energy Research Associates has recognized, “has the potential, at least, to cause a paradigm shift in the fueling of North America’s energy future.”



#### Sources:

ICF: As reported in MIT Energy Initiative, 2010, *The Future of Natural Gas*, interim report ; Table 2.1

EIA: See <http://www.eia.gov/analysis/studies/worldshalegas/>

PGC: Potential Gas Committee’s *Advance Summary* and press release of its biennial assessment; see [www.potentialgas.org](http://www.potentialgas.org)

CERA: IHS CERA, 2010, *Fueling North America’s Energy Future: The Unconventional Natural Gas Revolution and the Carbon Agenda*

MIT: MIT Energy Initiative, 2010, *The Future of Natural Gas*, interim report

NPC: Realizing the Potential of North America’s Abundant Natural Gas and Oil Resources Johns Hopkins University ; *Prudent Development Study 2011*

### Low Cost:

According to an IHS CERA study, *Economic and Employment Impacts of Shale Gas Production in the United States*, the growth of shale gas is leading to lower natural gas and electric power prices. They estimate lower natural gas prices, resulting from expanded shale gas production, will reduce electricity costs by an average of 10% nationwide over the forecast period (2010 – 2035). In fact, IHS CERA estimates that almost all of the US shale gas resource could be developed at a full-cycle cost of \$4 per Mcf or less. As a result, not only have gas prices declined significantly over the past two years, but IHS CERA expects gas prices to average below \$5.15 (constant 2010 dollars) thru 2035.

These lower prices will lead to increased levels of industrial production, benefits to chemicals production and an increased chemicals production capacity in the U.S. and significant savings for American consumers. According to the study, savings from lower gas prices will add an

annual average of \$926 per year in disposable household income between 2012 and 2015. In 2035, this would increase to just over \$2,000 per household.

#### Availability for Deployment:

Natural gas can ease reliability concerns because of existing, underutilized generating capacity available for immediate deployment, and new generating resources scheduled to come on-line in the next few years. Units designed and permitted to use natural gas make up the largest portion of the U.S. power generation fleet capacity, but natural gas combined cycle facilities have an average utilization of only about 40 percent (EIA-860 and EIA-923,2010). This means we can have a change in our generation mix on a substantial scale, with no delay for permits or construction. This natural gas can improve reliability of the grid by providing fast-ramping generation to ease the integration of renewables and by providing a reliable form of baseload generation.

#### **Impact of future hydraulic fracturing regulatory requirements on access to natural gas and related reliability concerns.**

ANGA believes that the Nation's domestic supplies of natural gas have been, are being and will continue to be produced in a safe, responsible and environmentally sound manner, and that there is no justification for prohibiting the use of hydraulic fracturing to develop our natural gas resources. Indeed, ANGA is confident that, if evaluated based on facts and using sound scientific and economic principles, any regulation of the practice would allow for the continued safe and responsible development of the resource.

U.S supplies of natural gas have been produced in a safe and environmentally sound manner for decades. For over 50 years, the use of hydraulic fracturing has been applied in the completion of 1.1 million wells, allowing for the production of more than 600 trillion cubic feet of natural gas.

Natural gas development is subject to federal, state and local regulations that govern all aspects of exploration and production. Federal rules governing natural gas activities include the Safe Drinking Water Act, Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Emergency Planning and Community Right-to-Know Act and the National Environmental Policy Act. State regulations include the review and approval of permits for drilling activities such as well design, location, spacing and wastewater management and disposal. Additionally, 21 states have voluntarily undergone regulatory reviews by STRONGER ("State Review of Oil & Natural Gas Environmental Regulations") a collaborative effort with EPA, the Interstate Oil and Gas Compact Commission (IOGCC), the state regulatory body and interested stakeholders. The STRONGER review process was established in 1988 to improve state oil and gas regulatory programs and makes recommendations to state regulatory bodies periodically to address "emerging issues, reflect new information and experience, adapt to changing circumstances, and consider innovative techniques of measurement".

Experienced developers and regulators consider state-level, on the ground oversight and enforcement to be critical, because drilling practices are customized to address the unique geological characteristics found in different parts of the country. The geology of natural gas formations can vary greatly from region to region - even well-site to well-site in some areas. For example, Texas' Eagle Ford Shale and the surrounding environment are vastly different than the geology in Texas' Barnett Shale to the north, just as it is different from Pennsylvania's Marcellus

Shale. Each shale formation, and even different parts of the same shale, possesses unique geological characteristics that require specialized approaches to produce the natural gas locked inside. Well design, location, spacing, operation, water management and disposal, waste management and disposal, wildlife impacts and surface disturbance are all variables that can differ and are accounted for by state level regulation.

ANGA member companies have long supported appropriate state oversight recognizing the role it plays in helping to ensure safe and responsible development of natural gas. ANGA remains confident that EPA will recognize and appropriately defer both to existing regulations in states that have historically had natural gas production, and to the adoption of pending and anticipated rules in states that are now seeing natural gas development due to advancements in drilling technology. Those state and federal regulations and the implementation of FracFocus.org make increased federal regulation unnecessary and duplicative. Indeed, added layers of federal oversight likely would prove counterproductive as the nation seeks energy independence.

### **Ability to expand pipeline capacity<sup>i</sup>.**

The Nation's pipeline infrastructure can support the expanded use of natural gas in the electric power sector. Existing and nearly complete pipeline and infrastructure provides the ability to deliver natural gas quickly and reliably throughout the U.S. The expansion in infrastructure reflects the continuation of a trend that began in 2008, when completions of new pipelines and expansion of existing pipelines were higher than they had been in more than a decade, increasing capacity by more than 44 billion cubic feet per day.

INGAA's 2011 study, "North American Natural Gas Midstream Infrastructure through 2035: An Updated Supply-Demand Outlook" explores both past and projected infrastructure spending and capacity. Along with the growth of natural gas production, there will be a steady and achievable need to build pipeline infrastructure. Based on historic experience, the industry has proven its ability to finance and construct the additional infrastructure necessary to bring supplies to market. Interstate pipeline expenditures alone equaled or exceeded \$8 billion per year in three of the years between 2006 and 2010, according to FERC data. Even with a projected doubling of gas demand in electric generation over the next 25 years, based on our historical investment record, the industry can easily meet projected infrastructure requirements.

In addition, respected, independent agencies have examined the adequacy of the delivery infrastructure. For example, in its recent report, "Displacing Coal with Generation from Existing Natural Gas-Fired Power Plants," the Congressional Research Service CRS explored the question, concluding that "[i]t seems unlikely that on a national, aggregate scale, pipeline capacity would be a constraint on coal displacement" by existing natural gas combined cycle plants. Natural gas consumption required for the "maximum potential coal displacement by existing NGCC plants equate to about 15 BCF per day of natural gas, or about 7 percent of existing pipeline capacity." This "7 percent increase in peak demand would appear manageable given the planned expansions to the pipeline system."

Also, as reported by EIA, natural gas storage capacity has steadily increased in recent years. According to EIA, as of April 2011, demonstrated peak capacity was 4,103 billion cubic feet (Bcf), 14 percent above its level in April 2006.<sup>ii</sup> Growth in storage capacity is a critical element in allowing America's abundant natural gas to reliably and efficiently serve a growing market. By storing gas close to market, pipeline expansions can be avoided, and by using storage to

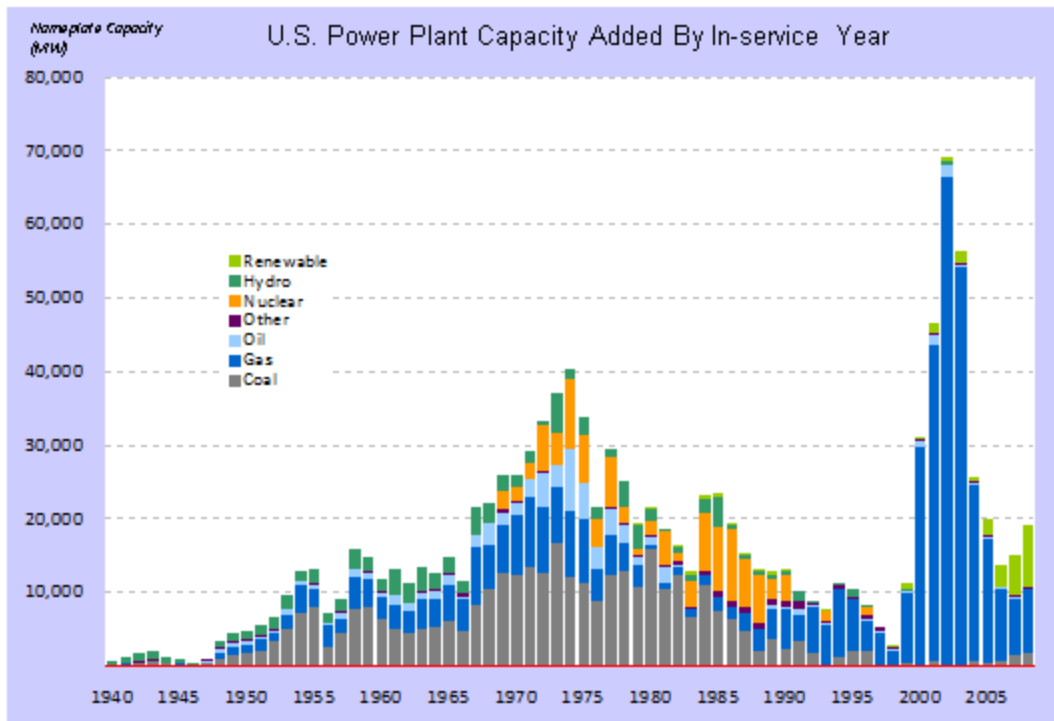
maintain pressure levels in pipelines, extreme variations in demand can be accommodated. This latter benefit enables substantial growth in power-generation use and the integration of intermittent renewable sources of energy into the grid.

### **Impact of EPA regulation on Grid Reliability<sup>iii</sup>:**

Natural gas can play an important role in maintaining grid reliability. First, as coal plants come offline to install pollution control systems, existing underutilized natural gas plants can help “pick up the slack.” As mentioned above, natural gas combined cycle facilities are only averaging about 40 percent utilization nationwide.

Second, new natural gas capacity can substitute for retiring coal plants and can quickly come online. According to the recent MJ Bradley and Associates and Analysis Group Report, “Ensuring a Clean, Modern, Electric Generating Fleet while Maintaining Electric System Reliability,” expanded domestic natural gas production is already facilitating a transition to a cleaner generation fleet. Per the report, 38 gigawatts of generating capacity are presently under construction, 18 GWs of which is natural gas-fired and another 12 GWs of natural gas-fired generation capacity is in advanced stages of development. Added capacity can come online quickly. In normal market conditions a peaking facility can be brought online in 2-3 years and a gas-fired combined cycle power plant in 3-4 years (development, permitting and construction). Also, permitting authorities can expedite this process if new capacity is needed for reliability.

The industry has a demonstrated track record of adding substantial new generating capacity. Between 1999 and 2008, for example, the electric sector added almost 270 GW of natural gas-fired generating capacity (see Figure below). In just three years between 2001 and 2003, the electric industry built over 160 GW of new generation. This robust construction cycle suggests that developers and investors will respond to strong signals if new capacity is needed.



Source: Ceres, et al., Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States, June 2010.

The flexibility quickly to add capacity, combined with continued improvements in technologies that have allowed us dramatically to increase the production of domestic natural gas, reinforces the broad consensus that there is a sufficient supply of natural gas in the U.S. to support current and future power generation demands.

## Conclusion

In summary, we encourage FERC to consider the full benefits of natural gas as well as the latest available data on natural gas supply and cost as it considers electric system reliability, environmental regulation, and the positive contribution that natural gas can make in both of these areas. We appreciate the opportunity to offer these comments. Any questions or requests for follow up can be directed to Amy Farrell or Peter Robertson at 202-789-2642.

Sincerely,

Amy Farrell,  
Vice President, Regulatory Affairs

<sup>i</sup> The discussion which follows addresses, in part, question 19 posed by Commissioner Moeller's November 14<sup>th</sup> request for evidence (whether hydraulic fracturing of natural gas will be permitted in the future). As stated more

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fully below, ANGA respectfully submits that state regulations in this field are adequate and protective, and that while ANGA hopes and expects EPA will only propose regulations in this area based on sound science, regulations which unnecessarily burdened the development of shale gas resources could have negative consequences on reliability.

<sup>ii</sup> U.S. Energy Information Administration (EIA). Today in Energy. November 2011.

<sup>iii</sup> As stated more fully in this section, ANGA respectfully submits that the answer to question 20 of Commissioner Moeller's November 14<sup>th</sup> request for evidence (whether "natural gas pipelines can be authorized and built in a manner that will allow new gas plants to enter service when needed for reliability") is a resounding yes.