

FILE



December 9, 2014

Honorable Thomas W. Johnson, Chairman
Honorable Steven D. Lesser, Commissioner
Honorable Asim Z. Haque, Commissioner
Honorable Lynn Slaby, Commissioner
Honorable M. Beth Trombold, Commissioner

The Public Utilities Commission of Ohio
180 East Broad Street
Columbus, Ohio 43215

PUCO

2014 DEC 10 AM 8:57

RECEIVED-SOCKETING DIV

Re: Case Numbers: 13-2385-EL-SSO, 14-841-EL-SSO, 14-1297-EL-SSO

Dear Chairman Johnson and Commissioners:

I write on behalf of America's Natural Gas Alliance (ANGA)¹ regarding the growing role of natural gas-fired power generation in Ohio, PJM and across the country as coal-fired facilities are retired and new, highly-efficient natural gas fired generation resources are built. Natural gas supply and infrastructure are in place to support a major shift to natural gas use for power generation.

As both producers and energy consumers, ANGA has a vested interest in the production of electricity from clean-burning, affordable natural gas. ANGA is actively engaged in the discussions taking place about the increased role natural gas fired generation is playing in our nation's energy mix and what that means for Ohio's and the nation's continued access to reliable, affordable electricity.

Natural gas fired power plants are capable of running at high capacity factors necessary to serve as baseload power. In fact existing natural gas combined cycle (NGCC) facilities are capable of running more than 85 percent of the time based on an average annual availability and 10 percent already perform at utilization rates of at least 70 percent. Gas-fired generation is also uniquely capable of rapid starts and ramping to respond promptly to unplanned outages and changing power demands during the day. By doing this, natural gas power plants enable renewable generation.

¹ Representing North America's leading independent natural gas exploration and production companies, America's Natural Gas Alliance (ANGA) works with industry, government and customer stakeholders to promote increased demand for and availability of our nation's abundant natural gas resource for a cleaner and more secure energy future.

This is to certify that the information appearing here is an accurate and complete reproduction of a case file document delivered in the regular course of business.
Technician Date Processed 12/10/14

In the wake of the last winter's extreme weather we hear a lot of misleading rhetoric about natural gas and much of the commentary is offered to support the argument that existing baseload generation must be sustained. The extreme weather that occurred during the winter of 2013/2014 created multiple challenges for grid operators, including PJM. PJM itself has been clear that the majority of problems encountered during these extreme conditions were not an issue of natural gas availability. PJM, in a letter in response to questions about the polar vortex from members of the U.S. House Committee on Energy and Commerce, wrote:

- Although there has been much focus on gas issues associated with interruptible transportation, overall the gas interruptions were not the major driver of the high forced outage rates experienced in the PJM region. Natural gas interruptions, although significant, removed less than five percent of the total capacity required to meet demand on January 7, while equipment issues associated with both coal and natural gas units made up the far greater proportion of forced outages.²
- More than three quarters, or 30,900 MW, of the forced outages were associated with equipment breakdowns, startup failures, and other problems related to operating generating facilities in extremely cold temperatures. These problems impacted all generation types, including 14,000 MW of coal capacity, 9,700 MW of natural gas capacity, 1,400 MW of nuclear capacity, and 6,100 MW of other capacity (including hydropower and oil). An increased focus on cold weather preparedness should help to mitigate these problems in the future.

Importantly, these "interruptions" were a function of the gas delivery contracts generators had with the pipelines. In times of high demand, generators holding a lower-cost, interruptible contract could experience interrupted service, which is wholly consistent with the contractual agreement and not a function of natural gas availability. This aspect is acknowledged in a separate communication where PJM noted that, "the gas supply problems experienced last winter were primarily contractual and economic, not physical constraints, meaning that for many gas-fired generators, fuel firmness can be achieved through new arrangements with marketers even without expansion of the gas pipeline system."³

The market is already recognizing the advantages of natural gas as baseload generation. Over the first six months of 2014, natural gas-fired power plants made up more than half of the utility-scale capacity additions in the United States and almost all of these plants are designed to serve baseload power.⁴ Current price and regulatory dynamics have also created an opportunity for existing NGCC to increase utilization and act as a baseload resource. In general, higher utilization makes natural gas with firm transportation more cost-competitive with other generation sources, as the cost of firm transportation is spread among more megawatt hours. These NGCC resources also have the ability to operate at higher utilization levels, while

² Glazer, Craig A. (PJM). PJM Response to Committee Questions re: Polar Vortex Impact on PJM. (April 18, 2014), available at: <http://www.pjm.com/sitecore%20modules/web/~media/documents/other-fed-state/20140418-pjm-response-to-committee-questions-polar-vortex-impact-on-pjm.ashx> at p. 7.

³ Letter from consumer representatives to PJM Board of Managers. <http://www.pjm.com/~media/committees-groups/committees/elc/coalition-briefing-papers/ex-parte-joint-consumer-advocates.ashx>

⁵ Energy Information Administration, Short-term Energy and Winter Fuels Outlook (October 2014) available at: <http://www.eia.gov/forecasts/steo/>

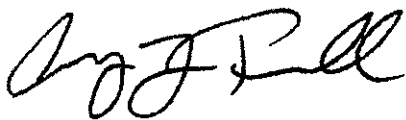
still serving as load following units and retain the ability to quickly ramp up or down in response to fluctuations in renewable energy supply and electricity demand throughout the day.

The market policy dynamic is also shifting in ways that are favorable to reliability. Organized markets, in particular PJM, are recognizing the role capacity market rules can play in ensuring reliable generation. PJM currently has a process underway to establish capacity assurance requirements, which would allow the market to recognize and value “firm” fuel supply. Although the details have yet to be finalized, the proposal is important in that it will enable generators to include costs of a “firm fuel supply” in their bids, allowing for the necessary cost recovery to justify firm contracts or alternative portfolio options.

The affordable, available natural gas supply and the robust infrastructure in Ohio only make natural gas fired generation that much more attractive. Bentek Energy’s recent supply and infrastructure assessment for the Northeast showed that Ohio enjoys abundant natural gas supplies and infrastructure to support far greater use of natural gas in the power sector and that significant growth in both supplies and infrastructure are expected. Northeast natural gas production has grown eight times its 2009 level, and production is expected to double by 2020 (up to 28 Bcf/d). Infrastructure to connect this supply to markets in Ohio and downstream of the state is also growing rapidly—as much as 27 Bcf/d of planned or under construction pipeline projects will link end users and producers. The reliability of natural gas in Ohio is well established and will only improve with the ongoing investment in the delivery system.

To further substantiate the positive natural gas developments already underway in Ohio and the region, we offer a detailed assessment of the rapidly changing supply and infrastructure landscape in Appendix A. We encourage the commission to consider the evolving supply and infrastructure dynamic and the full set of facts presented above as it makes any decision that may override market forces and dictate fuel choices for power generation in Ohio, particularly as it considers the time horizon of any such decision.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amy L. Farrell', with a stylized, cursive script.

Amy L. Farrell
Vice President, Market Development
America's Natural Gas Alliance

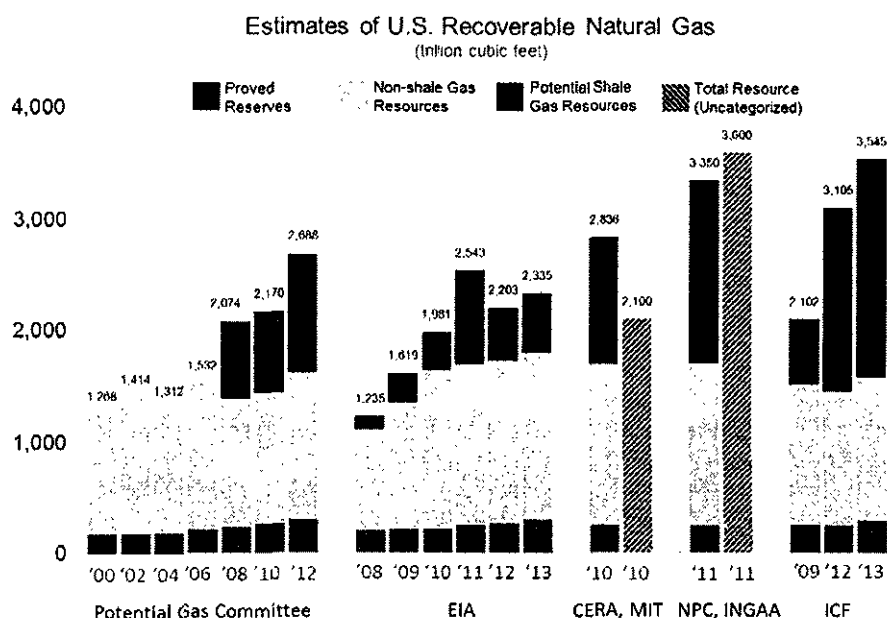
Appendix A

Abundance of Supply and Price Stability

The United States has now surpassed Russia as the largest producer of natural gas. With plentiful natural gas supplies from our geographically diverse shale formations, experts now project stable, affordable natural gas prices for decades to come.

The Energy Information Administration (EIA), the Potential Gas Committee and many others project ample long-term domestic supplies of natural gas. The most recent projections show a range of technically recoverable gas using today's technology from 2,203 to 3,545 trillion cubic feet. To put these findings in context, the total volume of natural gas consumed in 2013 in the U.S. was 26 trillion cubic feet. This abundance translates to affordable energy with average annual Henry Hub prices below \$4.50 per MMBtu for the past six years⁵, and the U.S. Energy Information Administration (EIA) projecting sub-\$6.00 prices through 2030.⁶

Figure 1: Technically Recoverable Reserves



Robust and Growing Infrastructure, Favorable Supply Location

The rapid growth of supply from the Marcellus and Utica shale plays in the Northeast producing region is well established and is leading the overall growth of natural gas supply in the U.S. Natural gas production in the Northeast region has doubled since 2012 to 15 Bcf/day.⁷

However, the key to effectively using such abundance is the pipeline infrastructure that links supplies to consuming markets. The U.S. gas pipeline network consists of over 300,000 miles of high-pressure transmission systems.

⁵ Energy Information Administration, Short-term Energy and Winter Fuels Outlook (October 2014) available at: <http://www.eia.gov/forecasts/steo/>

⁶ Energy Information Administration, Annual Energy Outlook (May 2014) available at: <http://www.eia.gov/forecasts/aeo/>

⁷ Energy Information Administration, Natural Gas Weekly Update (November 6, 2014) available at: http://www.eia.gov/naturalgas/weekly/archive/2014/11_06/index.cfm

The Midwest is the heart of much of that network, and Ohio is a major crossroads, served by an extensive system of pipelines feeding from multiple directions. Figure No. 2 depicts Ohio's relationship to the pipeline system.

Unlike the large, traditional supplies from the Southwest, the Gulf Coast, and the Midcontinent, production in the Marcellus and Utica shales feed the market from the opposite direction. This bidirectional feed relieves pipeline capacity constraints and thus actually creates new pipeline flexibility.⁸ For example, new pipeline expansions have added 1.3 Bcf/d of takeaway capacity from the Marcellus and Utica regions in November 2014 including Columbia's West Side and Texas Eastern Appalachian to Market (TEAM) projects. Additional Texas Eastern projects are adding 2 Bcf/d of reversal or bidirectional capacity through 2017 to take Marcellus and Utica gas to markets.⁹

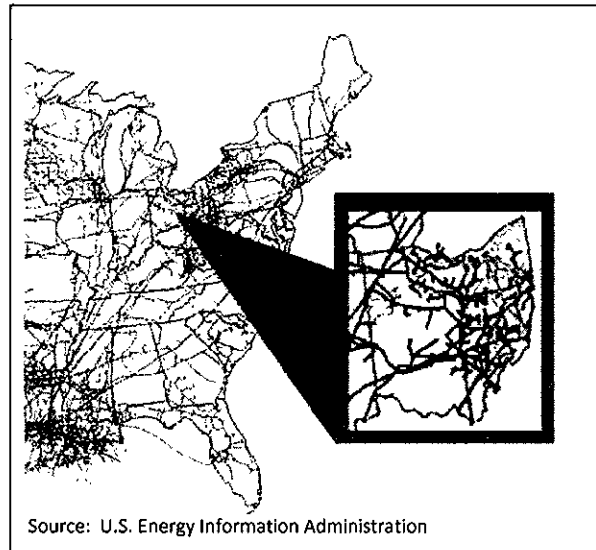


Figure 2: Ohio Pipeline Infrastructure

Another benefit of the location of these supplies is that they are in the same areas as many of the major Northeast underground storage fields, enabling the record-setting storage replenishment we have seen over the past seven months and providing added resiliency to the region's supply deliverability network. Fourteen weeks of the 2014 injection season set new highs for weekly storage injections and seven weeks were second highest when comparing to the previous ten injection seasons (see Figure 3). This incredible storage build is due to the strength of production. Natural gas production on average has grown 3 Bcf per day over 2013.¹⁰ This growth is expected to be sustained when comparing 2013/2014 winter production to the upcoming 2014/2015 winter production.

⁸ This benefit was recognized when the Midcontinent Independent System Operator completed the third and last phase of its evaluation of the ability of Midwestern pipeline infrastructure to support significant replacement of retiring coal capacity. Please refer to the following for additional detail:

Gregory L. Peters, EnVision Energy Solutions, "Phase III: Natural Gas-Fired Electric Power Generation Infrastructure Analysis An Analysis of Pipeline Capacity Availability", 2013.

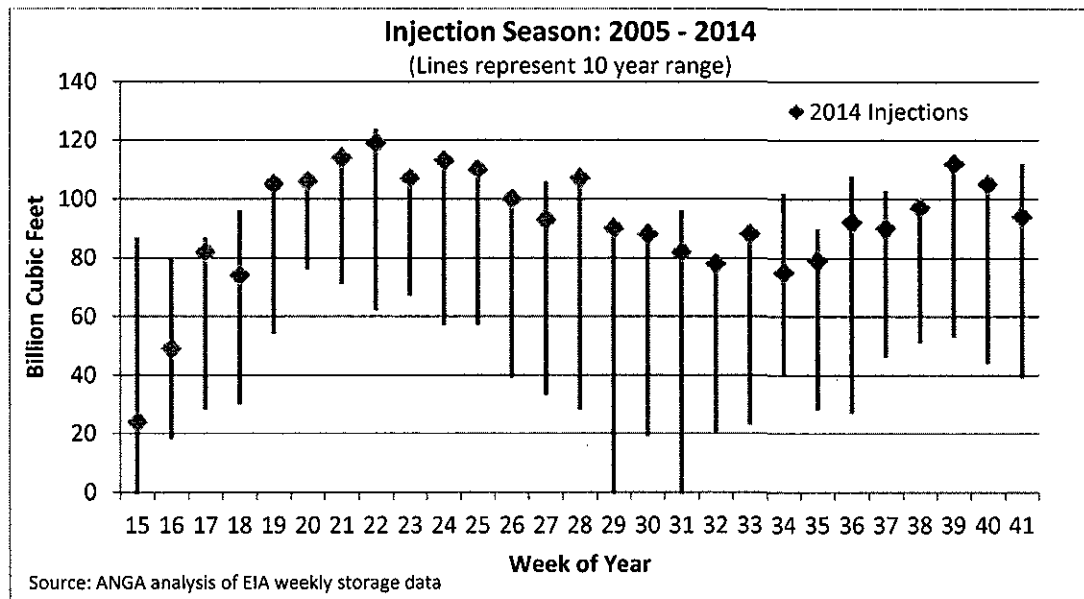
⁹ Energy Information Administration. Natural Gas Weekly Update (November 6, 2014) available at:

http://www.eia.gov/naturalgas/weekly/archive/2014/11_06/index.cfm

¹⁰ Energy Information Administration, Short-term Energy and Winter Fuels Outlook (October 2014) available at:

<http://www.eia.gov/forecasts/steo/>

Figure 3: Natural Gas Storage Injections



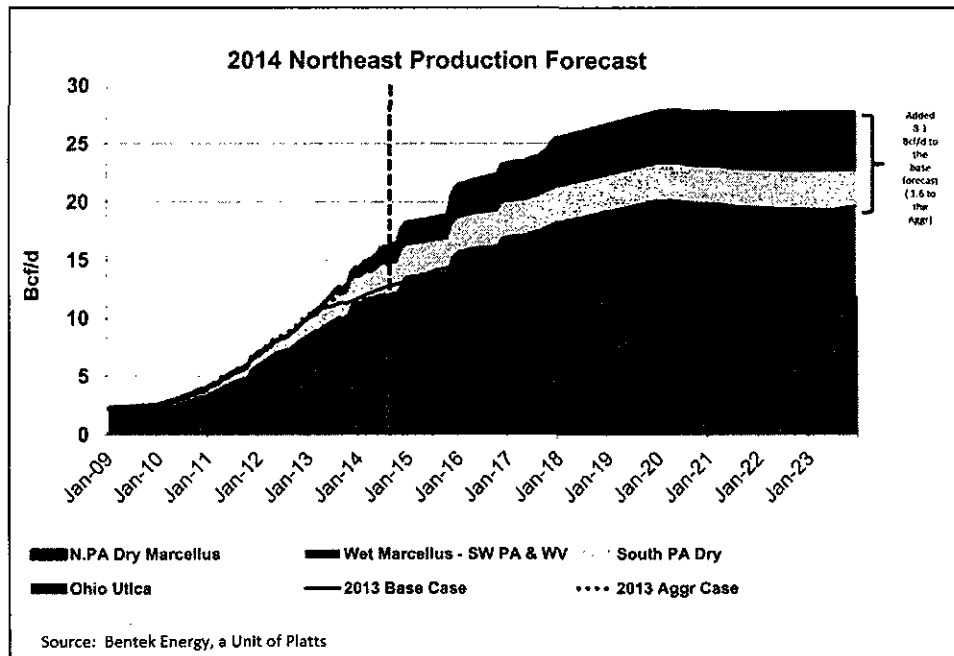
Northeast Supply and Infrastructure Update

ANGA commissioned Bentek to analyze the supply, demand, and infrastructure in the Northeast producing region which includes Ohio and the PJM footprint. This study provided a very positive outlook for regional production and Northeast infrastructure growth.¹¹ The main findings of the study include:

- Northeast production exceeded Southeast/Gulf of Mexico supply for the first time in 2013, and will soon pass western Canada to become the second-largest natural gas producing region in North America behind only Texas.
- Currently, there are an estimated 800 wells in northern Pennsylvania that have been drilled but not completed. At an initial production rate of 4.2 MMcf/d, that is 3.4 Bcf/d of natural gas supply, or 5% of total US supply, that is ready to be delivered to market and serve expanding and new demand markets.
- Northeast production is expected to increase to 28 Bcf/d by 2020. This is almost double current Northeast production rates.

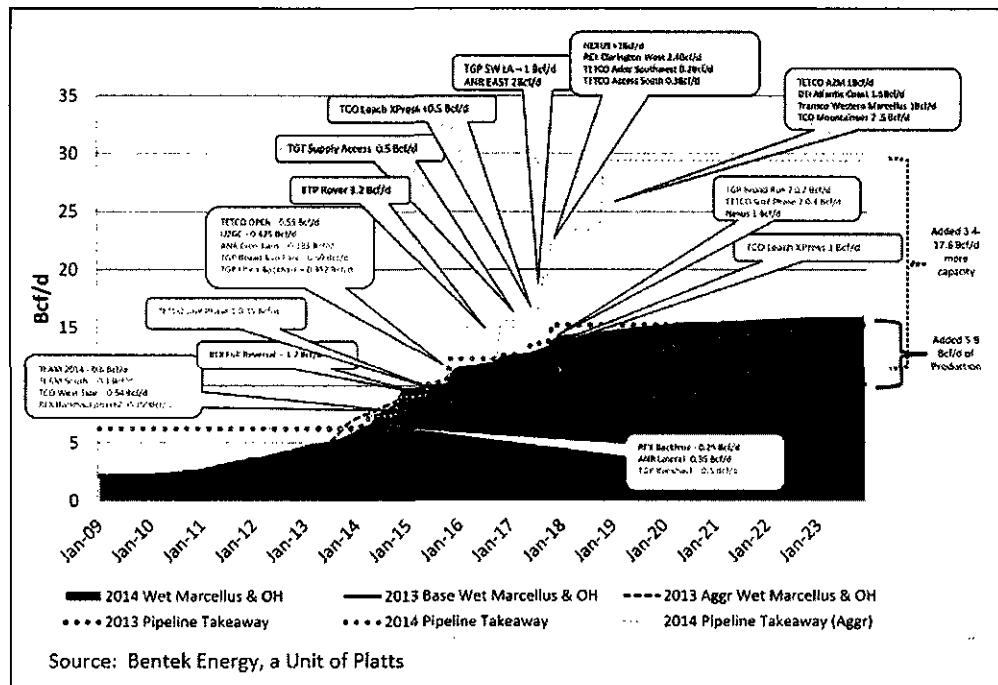
¹¹ Bentek Energy. Northeast Infrastructure Study: Leading the Market in a New Direction (released Sept 2013, updated Nov 2014).

Figure 4: Northeast Production Forecast



- The Northeast is expected to achieve natural gas self-sufficiency by 2015 and is providing competitive pricing for the region, producing more gas than it has demand to consume.
- A significant amount of infrastructure is being built in the Northeast to support continued production growth. As much as 27 Bcf/d of planned or under construction infrastructure projects will link end users and producers.

Figure 5: Marcellus and Utica Infrastructure Projects



Conclusion

Natural gas is a clean, efficient, and important contributor to the national and regional generation mix. In the Northeast, and particularly in Ohio and other areas with direct proximity to the major producing basins, an historic, paradigm-shifting increase in natural gas production is available to the market, far in excess of regional requirements. Meanwhile, the size and flexibility of the existing infrastructure coupled with proposals to build new pipelines to move the growing natural gas supplies to market indicate that the opportunities available to generators and other consumers in Ohio will be continuously improving from their already-strong position.