November 11, 2014

Howard Schneider, Esq.
Chair, Board of Managers
PJM Interconnection, LLC
2750 Monroe Boulevard
Audubon, PA 19403

RE: Ex-Parte Communication to the PJM Board regarding PJM’s Capacity Performance Proposal

Dear Chairman Schneider,

Representing North America’s largest independent natural gas exploration and production companies, ANGA works with industry, government, and customer stakeholders to promote increased demand for and continued availability of our nation’s abundant natural gas resource for a cleaner and more secure energy future. The safe and environmentally-responsible development of our domestic stores of natural gas has been, and increasingly will be, an important contributor to America’s energy supply and economic health.

As both producers and energy consumers, ANGA has a keen interest in the production of electricity from clean-burning, affordable natural gas. Consistent with our mission, ANGA provides information on natural gas supply and demand and analysis of policy proposals with the potential to impact how natural gas is used in the power generation sector. ANGA staff and its member companies have been actively engaged in PJM’s Gas/Electric Stakeholder Task Force, providing updates on the rapid evolution of the gas industry including information on the increasing abundance and expanding pipeline infrastructure. ANGA supports PJM’s efforts to increase electric supply reliability and prevent loss of load events across all sources of generation and commends PJM’s extensive stakeholder process. Our comments highlight the dramatic natural gas supply and infrastructure changes taking place in PJM’s footprint and we offer comments and recommended changes to specific provisions in the capacity performance proposal.

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 years1, and the U.S. Energy Information Administration (EIA) projecting sub-$6.00 prices through 2030.2

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.3

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.

2 Energy Information Administration, Annual Energy Outlook (May 2014) available at: http://www.eia.gov/forecasts/aeo/
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.\textsuperscript{4} For example, new pipeline expansions will add 1.3 Bcf/d of takeaway capacity from the Marcellus and Utica regions in November 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.\textsuperscript{5}

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. This incredible storage build is due to the strength of production. Natural gas production on average has grown 3 Bcf per day over 2013.\textsuperscript{6} This growth is expected to be sustained when comparing 2013/2014 winter production to the upcoming 2014/2015 winter production.

\textbf{Figure 2: Natural Gas Storage Injections}

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\caption{Injection Season: 2005 - 2014}
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Source: ANGA analysis of EIA weekly storage data
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\textsuperscript{4} 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.


\textsuperscript{6} Energy Information Administration, Short-term Energy and Winter Fuels Outlook (October 2014) available at: http://www.eia.gov/forecasts/steo/
Northeast Supply and Infrastructure Update

ANGA commissioned Bentek to analyze the supply, demand, and infrastructure in the Northeast producing region which includes the PJM footprint. This study provided a very positive outlook for regional production and Northeast infrastructure growth.\(^7\) 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.

Figure 3: 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.

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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 4: Marcellus and Utica Infrastructure Projects**

ANGA’s Comments on Capacity Performance

ANGA supports PJM’s October 7, 2014 Capacity Proposal provisions that seek to firm up reliable natural gas supply, send price signals to encourage overall pipeline infrastructure and encourage new products to come to market. As a general proposition, ANGA believes that changes can be made to both the PJM energy and capacity markets to improve the reliability of the PJM grid.

Listed below are some specific areas important to ANGA and its members:

1) **Energy Market Offer Cap** - ANGA is pleased that as part of the Capacity Performance proposal PJM recognized the need to increase the energy market offer cap over the current, outdated cap level. ANGA urges PJM to file the necessary tariff revisions quickly so an appropriate offer cap can be in place this winter.

2) **Ability to Refresh Day Ahead Bids** – ANGA also agrees with PJM that tariffs should be altered to allow generators to refresh their day ahead bids in the delivery day based on fuel prices. This change is critical to the long term success of a grid that is increasingly relying on natural gas to meet both baseload and peak needs. Although in cases where a
generator has firm transportation and contracted gas supply, the issue should be significantly mitigated.

3) **Gas/Electric Coordination** - PJM should work with gas generators and other stakeholders to find a way to efficiently use existing firm gas transportation arrangements to support the winter peak. This could be in the form of a PJM initiative that changes its own scheduling to better fit gas scheduling or in the form of supporting new products and services in gas markets that provide gas generators real-time options for obtaining as-needed gas.

4) **Capacity Performance Expectations** - In regards to the proposed capacity market changes, ANGA supports the notion that capacity resources should be expected to perform when called upon and that penalties for non-performance are material. The capacity market provides valuable support to both new and existing units, but with that revenue stream comes certain expectation of performance. For gas-fired units, fuel must be available and capable of being burned when PJM issues the dispatch order.

5) **Flexibility of Firm Fuel Standards** - PJM has appropriately recognized the merits of affording generators flexibility in order to meet their performance obligation. Particularly in regards to gas procurement, flexibility is paramount and the change made by PJM from an eligibility standard to a performance standard is positive.

6) **Generators Behind an LDC** - ANGA appreciates the challenges that were put forth by some generators in regards to their ability to have gas available to them every hour of the year – particularly those gas fired generators that receive their service from a local distribution company (LDC). Gas for these generators is widely available to them to meet the summer peak, but is somewhat compromised during extreme winter conditions. While these resources may face challenges that other generators do not, they are nonetheless very valuable resources that deserve to be compensated for the enormous value they provide to the grid. As efforts are pursued to better manage these “behind the city gate issues,” ANGA urges PJM to recognize the high value these resources provide to the grid and find a means to compensate them appropriately.

7) **Ability to Recover Long Term Infrastructure Investments** - ANGA also supports the proposed tariff change to clarify that generators can reflect the cost of firm gas pipeline transportation in their Avoidable Cost Rate calculation.

We appreciate the Board’s consideration of our comments. This dialogue assists in ensuring that consumers in the PJM footprint are able to take advantage of our nation’s vast domestic natural gas resources for a cleaner and more secure energy future, while enjoying greater reliability, affordability, and flexibility in meeting future power generation needs in the PJM region and nation.

Sincerely,

Amy Farrell
Vice President, Market Development