



October 30, 2017

Woody Thrasher, Secretary
West Virginia Department of Commerce
State Capitol Complex
1900 Kanawha Boulevard East
Building 3, Suite 600
Charleston, West Virginia 25305

RE: Comments on the West Virginia State Energy Plan

Dear Secretary Thrasher:

IOGAWV appreciates the opportunity to provide comments regarding the West Virginia 2018-2022 State Energy Plan.

The proud history of the State of West Virginia has always included the discovery, extraction, and production of fossil fuels. Although, both the coal and oil and gas industries have evolved dramatically since their early days; it remains imperative that the state of West Virginia remain focused on a comprehensive energy plan that embraces them. Today our state has the opportunity to become both a leading producer of natural gas and the desired location for industries that will be attracted to low cost, abundant West Virginia natural gas. We have the chance to create wealth from that energy production, spur major economic growth, and create enough employment opportunities to retain our young people, and attract the industries needed to move our state forward.

The Division of Energy was created in 2007 to provide leadership for developing energy policies emphasizing the increased development and production of new and existing domestic energy sources and increased energy self-sufficiency. (§5B-2F-2(b)) The West Virginia Energy Policy and Development Act required the division to prepare and submit an annual energy development plan for implementing the state's energy policy; providing a direction for the private sector; including any recommended legislation. The plan also is to encourage the development of energy infrastructure and strategic resources that will ensure the continuity of governmental operations in situations of emergency or disaster. IOGAWV appreciates the steps taken by the Division

of Energy to develop this plan and wants to stress that natural gas is the energy source that can help the Division of Energy to meet these mandates to achieve energy self-sufficiency and provide the necessary redundant energy supply in an emergency or disaster.

It would seem prudent to review the 2012-2017 Energy Plan to see where the focus was at that time and what actions were suggested. That plan referenced two significant initiatives established by Governor Tomblin regarding the use of natural gas. The first was the Natural Gas Vehicle Task Force created in 2012 to transition the state's vehicle fleet to natural gas and developing an infrastructure to support NGVs. The report stated that Natural Gas Vehicles reduce emissions of Greenhouse Gases and help decrease dependence on foreign oil. The report stated that policy changes would have to be enacted to encourage the widespread use of NGVs and reach a balance between natural gas and petroleum fueling. The second initiative mentioned in the 2012 report was the creation in 2011 by Governor Tomblin of the West Virginia Marcellus to Manufacturing Task Force which was to locate and analyze the feasibility of an ethane cracker; look at existing infrastructure including pipelines and storage facilities; and formulate a comprehensive Marcellus to Manufacturing Action Plan. As we will emphasize later in our comments; the focus of both of these promising initiatives has appeared to wane since the 2012-2017 Energy Plan was created.

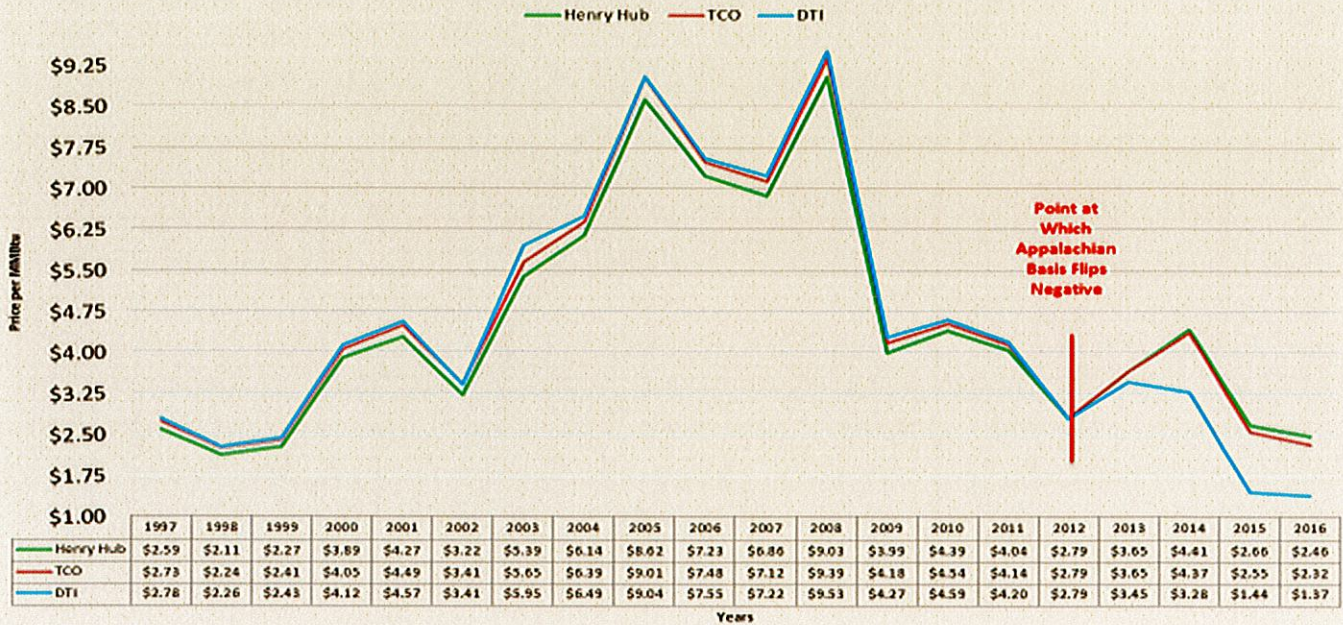
A few comments provided in relation to the previous Energy Plan are still quite applicable today. One commenter stated that cheap shale gas was an important feed stock which can revitalize the chemical and manufacturing industry. The commenter stated that in the power generation sector, WV is fortunate to have two fuels right here that can be used for electricity and that both should be part of the state's energy plan for power generation. In addition, the American Natural Gas Alliance stated that the largest and most immediate opportunity to increase the value and use of natural gas is through power generation. The ANGA referenced the plans to retire older power plants in WV and stated that converting these plants to run on natural gas, or replacing them with new, high-efficiency natural gas combined-cycle plants, will allow WV to deliver affordable, reliable electricity along with cleaner air. Again, as we discuss later, these opportunities have not been seized to date.

The Fossil Fuel Opportunities for West Virginia: 2017 Update published by the Bureau of Business & Economic Research of the WVU College of Business and Economics provides a great deal of pertinent data about the fossil fuel industries in West Virginia and is well done. The research indicated that Natural Gas production has more than quadrupled between 2010-2016 and that

WV is now the 8th largest producer of natural gas in the United States. Oil production in 2016 was up 220% since 2012 and WV is the 9th largest producer of Natural Gas Liquids. With such surges in production and the efficiency of extraction should come benefits to WV producers and the overall economy in our state. However, production growth has tapered off since mid-2015 and that is primarily due to the natural gas market as discussed below.

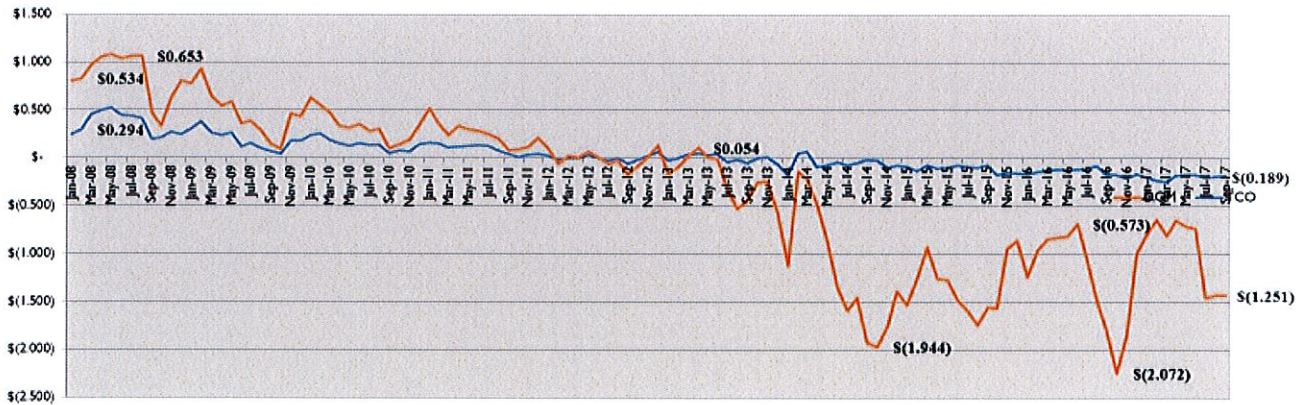
As the report mentions, in 2017 local producers were paid \$1.00 to \$1.25 less than the Henry Hub (spot market) price. This is a phenomenon in our area called the Appalachian basis. The Henry Hub price is what you see each day in the Wall Street Journal, on TV, social media, etc. and is the key trading point (physically located in Louisiana) for natural gas which in turns helps set all the other trading point prices. The chart below shows that our pricing is now at or below where it was 20 years ago (not adjusted for inflation). WV gas production is still delivered into two primary gas markets – Columbia (now TransCanada) and Dominion. The price producers receive for their gas is dependent upon which pipeline or market they deliver into. Prior to development of the Marcellus and as shown on the chart, WV producers actually received a premium to Henry Hub price which is referred to as basis differential. Basically, because our gas was closer to the northeast cities than Henry Hub gas and required less transport, we got an extra ten or fifteen cents. This is partly what originally enticed the major E&Ps to drill in the northeast. In 2012 however and as a result of the bottle neck in the pipelines as well as an oversupply situation, the basis differential flipped to being negative (as you can see marked by the red line on the slide). So no longer were producers getting a premium but our gas was actually being discounted from Henry Hub pricing in order to be sold. This was another game changer for WV producers as now our production was being sold anywhere from Henry Hub price minus ten cents to HH minus \$1.60 or more (see second chart). The basis for October 2017 was **minus \$1.87** on Dominion and **minus \$0.21** on TransCanada. With current pricing, drilling and operating efficiencies are the only path to profitability for Producers. Obviously, we are optimistic that the construction of new pipelines (expected to double total capacity) and the development of new markets will help alleviate some of the negative basis differential and fully endorse and support the construction of said pipelines (like ACP, MXP, MVP, etc.) to help alleviate the production bottle neck in West Virginia. In addition to helping producers, these pipelines should also yield significant benefits to the royalty owners and the state tax coffers.

Average Annual Natural Gas Prices 1997-2016 WV Producer Markets vs. Henry Hub



Basis Differential to Henry Hub Spot

Source: Direct Energy Business Marketing LLC



Due to the current oversupply situation in the northeast, WV gas no longer affords a premium and is significantly discounted from the published Henry Hub price in order to be sold



The 2017 report clearly indicates that the coal sector has declined alongside rapid growth in natural gas production. Coal now composes less than 30% of power generation—down from 50+% in 2001. Coal jobs are down 52% since 2011—with 13,000 jobs lost. Natural gas production is forecast to gain 8% per year through 2021 and employment in the natural gas industry to increase 4.6% per year during that same period. The report’s forecast in employment in natural gas and in coal show natural gas continuing to climb while coal is expected to remain steady at its low levels (Figures 32, 34). More than \$870 million in severance and property taxes has been paid from oil and gas since the implementation of horizontal drilling (2008-2016). Producers have paid an estimated \$500 Million (or one half BILLION) in net (after expenses) royalty payments in 2016 (many of which are to fellow West Virginians). The report states that the Oil & Gas sector reached near parity with coal as the largest industries in the state in terms of GDP.

The report provides some significant data regarding power generation in the nation and our state. Natural gas prices have fallen considerably relative to coal prices for the same level of heat output. In 2005, natural gas was 5 x more expensive as coal on a BTU basis; that ratio has fallen below 1.5 by 2016 (1.5 being the threshold for fuel switching). In 2008 coal fired power plants operated at 68% capacity; in 2016 they operated at 48%. AEP shut down 3 WV power plants in 2015 which had more than 1,800 MW of capacity (10% of state’s entire capacity). In 2014, the WV Legislature passed HB 2803 which required utilities to accomplish Integrated Resource Planning (IRP) to determine the mix of resources that will meet electricity demand at the lowest cost and to provide this analysis to the WVPSC. As an example, the 2016 IRP submitted by AEP shows that they plan to decrease the natural gas portion of their nameplate capacity mix from 19.6% in 2016 to 16.9% by 2025. They also plan to retire 2 natural gas converted units in 2026. Their IRP shows they intend to increase the use of solar and wind substantially and while it may be laudable to focus on renewables, should that be done to the detriment of the primary fossil fuel industries of the state? The PSC in reviewing these plans should take into consideration the overall impact of some of these decisions on the economy of the state. The 2017 Energy Plan states that the retirement of several WV coal-fired power plants leaves open the possibility for redevelopment of these sites for natural gas-fired power generation and IOGAWV fully supports such an effort by the state. A number of new natural gas-fired power plants have also been announced in the state including Moundsville, Brooke County, and Harrison County. If these plants move forward as expected, they would replace more than $\frac{3}{4}$ of the coal-fired capacity since 2012. Some groups have become quite active in opposing the installation of these power plants but the State of West Virginia needs to support and ensure that the projects come to fruition. As can be seen in the chart below, our neighboring states are maximizing their natural gas in producing power while West Virginia continues to lag far behind.

| PJM Nat Gas Power Plants STATUS | | | | |
|---------------------------------|----|----|----|--|
| | PA | OH | WV | |
| In Service | 60 | 17 | 4 | |
| Under Study | 33 | 14 | 7 | |
| Under Cons. | 22 | 4 | 1 | |
| Suspended | 10 | | | |

Another important aspect of power generation in our state is the rapid rise in WV electricity prices as detailed in the report. The average rate for all end-users has increased 6% per year (the fastest growth rate in the nation) while industrial rates are up 61% since 2008. In 2008, West Virginia's average electricity rates were ranked third-lowest in the country while by the first quarter of 2017, the state had moved to 21st in the country. The report states that over the last decade, the PSC has allowed electric companies to pass through a number of increased costs to end users. The price for coal delivered to utilities increased more than 13% between 2008 and 2010 and utilities were allowed to recover those increased costs through higher prices for consumers. The report states that rising electricity rates are a critical issue for WV and have the potential to limit economic growth as industrial firms look for lower prices in other states. Residential consumers are also paying much more for electricity in their homes decreasing their disposable income as a result. Appalachian Power's residential rates have increased more than 50% since 2006 and more than 30% for FirstEnergy since 2008. West Virginia does need to determine the root causes of these substantial increases and implement policies that will permit more cost-effective generation of electricity through the use of natural-gas fired power plants. It is crucial for WV to offer low electricity prices in order to attract businesses and potential employees.

As initially mentioned, two promising initiatives (NGVs and Marcellus to Manufacturing-M2M) from the 2012 plan have not gained as much traction. Unfortunately, there is sometimes a trend in state government to come up with innovative ideas and establish panels or task forces to study them and then fail to see any fruit from that labor. The M2M was established to take full advantage locally of the opportunities and value presented by the shale gas in the area. The focus was on opportunities that businesses can utilize with the development of Marcellus shale gas and ultimately the downstream manufacturing that can be developed in WV. The goal was to capture and add value to the molecule of gas here in WV. Although the West Virginia Manufacturing Association holds an annual Marcellus and Manufacturing Development Conference where many of these subjects are discussed; it is not clear whether the Task Force is still active or that the State has followed through with an Action Plan. In the same vein is the Natural Gas Vehicle Task Force and its results. The Task Force was to research and analyze the potential for the state to operate pilot public-access natural gas fueling stations; communicate with executive agencies in states that are in the process of transitioning their fleets to natural gas and encourage infrastructure development; explore partnerships with the natural gas industry; examine options for modernizing the state motor fuel excise tax related to natural gas; and develop a communications strategy to educate citizens about the economic, environmental, and safety benefits of operating NGVs. The final report of the Task Force was filed in 2013 and there have been some noticeable results including IGS CNG Services fueling stations along I-79 and increase of NGVs in the

state fleet. However, it may be beneficial to re-evaluate and update both of these initiatives to see if further maximization of the use of natural gas within our state can be accomplished.

Another portion of this 2017 Update is the report by the Marshall University Center for Business & Economic Research regarding Energy Efficiency in West Virginia. The Report does make some solid recommendations regarding utility programs, building codes, and tax credits. Energy Efficiency is given a large focus, as it should, but we believe Energy Efficiency should be considered to be much more than traditional concepts such as proper insulation or better light bulbs. Energy Efficiency is also establishing policies and laws to allow for more efficient development and transportation of our natural resources and for them to be used cost effectively by WV end-users.

Due to the large volumes of natural gas produced in West Virginia, we are not able to consume all of our production within the state but we can seek ways to create more demand and move away from being a “resource colony.” The Division of Energy should establish concrete plans that will help it meet its mandate to increase development and production of new and existing domestic energy sources and increase energy self-sufficiency. IOGAWV supports several of the report’s recommendations including:

- **Severance Tax Modifications:** The report refers to the 2016 elimination of a severance tax surcharge intended to retire the state’s worker compensation debt. This debt was retired so the elimination of this additional tax on oil and gas was merely the keeping of the promise made by the State when it was implemented. As the report states, a tiered severance tax on coal has been proposed with the tax percentage being based on the sales price of coal. If tiered severance taxes applicable to oil and gas are proposed, they need to reduce the tax in low price environments as has beset the industry for the last few years and only raise them if prices are well above a profitable margin for struggling producers.
- **Worker Retraining Programs:** Job training programs for the oil and gas industry (including related service companies, mid-streams, interstate pipelines) could help displaced coal workers find gainful employment in the growth industry in West Virginia.
- **Utility Restructuring:** Policies to enhance competition among retail providers and decrease overall prices for end-users would benefit both businesses and residents alike.
- **Redevelopment Incentives for Retired Coal-Fired Power Plants:** The retirement of several WV coal-fired power plants leaves open the possibility for redevelopment of these sites for natural gas-fired power generation and as stated previously IOGAWV fully supports such an effort by the state to convert to the use of our abundant and most economical fuel source to produce electricity.

The Utica and Marcellus Shales are projected to account for 35% of US production by 2020 and constitute the largest natural gas reserve in the United States. The technically recoverable natural gas volumes in the Mid-Ohio Valley area are nearly twice the Gulf Coast. The resource is here; the opportunity is here; and the future of natural gas in West Virginia is very promising. Initiatives such as Shale Crescent USA and the Appalachian Storage Hub can have a tremendous positive impact on the price of natural gas by creating substantially increased demand. The mission of the Shale Crescent USA economic development initiative is to encourage business growth in the Mid-Ohio Valley based upon low natural gas prices that allow manufacturers to operate more efficiently while producing products more economically with access to water and half the population of the United States and Canada. Shale Crescent USA is made up of business leaders, regional economic development partners, non-profit and non-governmental agencies, area Chambers of Commerce, utilities, financial and educational organizations throughout Ohio, West Virginia and the Mid-Ohio Valley. The Appalachian Storage Hub is a \$10+ billion infrastructure project that will allow the chemical and downstream sectors to grow synergistically, leading to an economic revitalization of the Appalachian Basin. The accomplishment of establishing the Hub in West Virginia could be the biggest game changer for the state in a long time. Not only would there be the investment dollars, jobs created; and trickle-down industries established but the enormous potential benefit for WV oil and gas producers from having a local price point created for the sale of their product is incalculable. IOGAWV strongly urges the State to work diligently and provide its full backing to groups like Shale Crescent USA and projects like the Appalachian Storage Hub.

IOGAWV recommends certain policy initiatives and recommended legislation be included in the plan as follows:

- Updating our outdated mineral development laws to utilize the concept of co-tenancy allowing for more efficient development of shale gas via longer laterals. West Virginia is one of only three states that does not have some type of mineral efficiency statute that applies to all oil and gas bearing formations; leading potential investors to refrain from using their capital in West Virginia versus neighboring states that allow such development.
- Encouraging and supporting pipeline infrastructure projects; helping to eliminate the existing bottleneck and oversupply situations in West Virginia.
- Implementing property tax reform measures that allow for the deduction of actual expenses incurred in the production of oil and gas and severance tax reform measures that encourage the development of wells in distressed natural gas service areas.
- Updating the deep well spacing laws. Current law was promulgated in 1972 and is applicable to vertical wells; when drafted the deep well spacing laws did not contemplate the drilling of horizontal wells.
- Supporting the concept of direct supply which would allow end users of large volumes of natural gas to buy directly from a natural gas producer or pipeline

operator. This would facilitate competition and reduce energy costs for the end user.

- Evaluating the state economic development policies for the purpose of assuring that West Virginia is poised to attract ethane crackers; downstream plastics manufacturing; new chemical manufacturing facilities; expansion of existing chemical industry installations; and capturing the full potential represented by the production of natural gas and the Appalachian Ethane Storage Hub.
- Developing policies, including drafting and introduction by the Administration, of such legislation as may be beneficial to encourage the development of natural gas fired power plants in West Virginia consistent with the level of development in our neighboring states of Ohio and Pennsylvania.

If enacted the above policies will result in the drilling of additional wells, reduce administrative burdens hampering development, create thousands of jobs, and attract manufacturing industries. The obvious benefits are increased tax revenues on both the state and county levels, the cessation of the outmigration of our talented young people and the revitalization of the economy in West Virginia.

IOGAWV stands ready and willing to provide its real-world expertise and participate with the West Virginia Office of Energy to create and implement a State Energy Plan that maximizes the use of our abundant natural resources for our citizens and businesses.

With My Best Regards,



Marc Monteleone, President