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EQB to consider cap-and-trade petition this month

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The Pennsylvania Environmental Quality Board (EQB) will consider a petition for a cap-and-trade regulation at its April 16 meeting. The Clean Air Council, Widener Commonwealth Law School Environmental Law and Sustainability Center, and others submitted the petition on February 28, asking EQB to promulgate a regulation that would create a multi-sector cap-and-trade system to reduce greenhouse gas (GHG) emissions to achieve carbon neutrality in Pennsylvania by 2052.

The petitioners initially submitted the petition to EQB on November 27, 2018. Under EQB's Petition Policy (25

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House committee acts on oil and gas legislation

The Pennsylvania General Assembly is getting up to speed on a new legislative session and has formally begun acting on a few bills impacting the oil and gas industry. Among them so far are the following.

House Bill 247, sponsored by Representative Donna Oberlander (R-Clarion), amends the Oil and Gas Act to permit well bores to cross multiple units provided the operator has the right to drill wells on the units via leases with all landowners/members of the units. In her sponsorship memo, Oberlander explains:

"With the ability of the natural gas industry to now drill longer lateral well bores, surface impacts from drilling have been greatly reduced. This advancement means less well pads, less access roads, less truck traffic, less pipelines, and less surface disturbance altogether. It is a positive for landowners, the environment, neighbors, and our local governments. This legislation will provide for a process and accounting mechanism to allow well bores to cross multiple units provided the operator has the right to drill wells on the units via leases with all landowners/members of the units. The operator is then required to reasonably and proportionately allocate the production across the various members of the units. The legislation does not impair any current contracts or leases, does not allow for any production from unleased land, and would not apply in cases where this practice would be contractually prohibited."

Two amendments were adopted on March 20 before the House Environmental Resources and Energy Committee approved the bill by a party-line vote of 15-10. One amendment clarifies that that the allocation of production must be based on each lessor's acreage in the unit. The second amendment requires that a lease include a voluntary pooling provision in order to fall within the provisions of this legislation.

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Cap and trade *Continued from page 1*

Pa. Code Chapter 23), the Department of Environmental Protection is to notify EQB and the petitioner within 30 days of DEP's receipt of the petition whether the petition meets the policy's eligibility criteria. DEP advised the petitioners on December 26 that the petition met the criteria and would be submitted to EQB for consideration at the first meeting of 2019.

However, DEP did not notify EQB members until, apparently, early February. Upon learning of the petition, Representative Daryl Metcalfe, chairman of the House Environmental Resources and Energy Committee, requested DEP on February 19 to have the petitioners resubmit their petition. The petitioners resubmitted the petition on February 28 with minor changes and additional signatories. DEP notified petitioners and the EQB on March 1 that DEP would review the petition to ensure it still meets the eligibility criteria. DEP has now done that and EQB scheduled the matter for consideration at its April 16 meeting.

The petition

The petition includes a fully drafted regulation that establishes a cap on covered GHG emissions, based on a 2016 base year, and reduces GHG emissions to carbon neutrality by 2052. The regulation borrows heavily from California's cap-and-trade regulation, which is a multi-sector program that includes Ontario and Quebec. The California regulation, however, does not require a reduction of all GHG emissions to zero.

The Pennsylvania emissions cap would decline by 3 percent each year. Capping GHG emissions means that the covered entities meeting certain thresholds—including the oil and gas, coal, cement, glass, and steel industries and any facility producing or importing electricity—all must obtain allowances, by auction or allocation, for each metric ton of reportable GHG emissions per year attributable to their operations in Pennsylvania. According to EPA's Envirofacts database, nearly 400 facilities in Pennsylvania report GHG emissions to EPA under a mandatory reporting rule. The proposed cap and trade program would require these and others not currently required to report GHG emissions to participate in the Pennsylvania program.

The petition states that if the regulation becomes effective for 2020, the initial cap would be equal to 97 percent of 2016 emissions. Limited by the ever-declining cap and availability of allowances, each covered entity must reduce its GHG emissions over time to achieve carbon neutrality by 2052. Allowances would cost a minimum of $10 each in 2020, with the price increasing by 10 percent plus the rate of inflation each year. Any person may buy from the available allowances regardless of whether that person emits GHG or not. If a covered entity cannot obtain sufficient allowances by auction or allocation, it may participate in the trading system and purchase needed allowances if they are available. Allowances may be freely traded or banked for future use.

The proposed regulation would allow manufacturers of certain products (but not fossil fuel suppliers or electricity generation) facing international and/or interstate competition to apply for some allowances to be distributed to them without cost. This mechanism is intended to prevent "leakage," which refers to the relocation of production or emissions of GHGs to another jurisdiction in which GHG emissions are not commoditized. The number of free allowances directly awarded to such entities would be based initially on the company's 2018 GHG emissions and be reduced by 5 percent each year after.

The petitioners cite the Pennsylvania Air Pollution Control Act and the Environmental Rights Amendment (ERA)—Article I, Section 27 of the Pennsylvania Constitution—as legal authority for their petition. Citing the Pennsylvania Supreme Court's 2017 decision in *PEDF v. Commonwealth*, 161 A.3d 911, the petitioners assert the ERA requires the Commonwealth to control GHG emissions. They contend the ERA affords a right to a "natural climate unaffected by climate disruption," because "a stable climate" should be understood to be a public natural resource, although this right is not expressly included in the Pennsylvania Constitution. The only express Pennsylvania legislation related to climate change and greenhouse gases is the Pennsylvania Climate Change Act (Act 70 of 2008), which provides for a report on potential climate change impacts, duties of the DEP, establishment of a Climate Change Advisory Committee, and a voluntary registry of greenhouse gas emissions. Neither the Air Pollution Control Act nor the Climate Change Act provides express authority to regulate GHG emissions or establish a cap-and-trade system. The petition bypasses legislative consideration of this issue by asking EQB as an administrative body to promulgate a climate change regulation.

Next steps

The notice of the agenda for the April 16 EQB meeting states DEP recommends that EQB accept the petition for further study. The petitioners may make a short oral presentation in favor of the petition at the meeting.

Under its Petition Policy, EQB may deny it the petition if has previously considered the same issue for which there is no new or different information, if the request concerns a matter in litigation, or if the requested action is inappropriate for EQB rulemaking due to policy or regulatory considerations. In 2013, DEP recommended that EQB reject a petition by Ashley Funk *et al.* for a similar regulation to reduce fossil fuel CO_2 emissions, citing lack of statutory authority and conflict with federal law. EQB voted 17-3 to accept DEP's recommendation to deny the petition. The Commonwealth Court subsequently decided in 2016 that the Funk petitioners did not have a clear right to promulgation of the requested regulation and dismissed their petition for mandamus, which the Supreme Court affirmed. *Funk v. Wolf,* 144 A.3d 228.

Despite the petition policy setting certain timelines, EQB is not required to make any decision regarding the petition at the April 16 meeting.

On April 1, the Pennsylvania Chamber of Business and Industry and 14 industry trade groups including PIOGA asked EQB members not to take any action on the petition until they have fully considered its legal and practical implications. Key among those implications are the comprehensive reshaping of Pennsylvania's entire economy and effects of higher energy prices on low-income rate payers, on municipalities, and on public, private and higher education. Other legal and practical considerations include whether the revenue collected by the auction of carbon allowances constitutes a tax, which constitutionally must be enacted by the General Assembly, and whether the impact to the power generation sector threatens reliability and the PJM Interconnection system. The Chamber and trade associations also recommend that each DEP advisory committee, including the Oil and Gas Technical Advisory Board and the Pennsylvania Grade Crude Development Advisory Council, be given the opportunity to consider the petition, providing necessary evaluation of its impacts by those industry members that would be affected.

If and when EQB accepts a petition for consideration, DEP must prepare a report and recommendation within 60 days (or longer if the report cannot be completed within 60 days) on whether EQB should promulgate a cap and trade regulation. If EQB decides to proceed with regulatory amendments, DEP will prepare a proposed rulemaking for EQB consideration within 6 months after mailing its report to the petitioners.

This petition and its proposed regulation present a dramatic departure from any current regulation in Pennsylvania and are intended to affect every aspect of the economy of this Commonwealth. Whether or not such a program in Pennsylvania would have any effect on the global climate is a question no one can answer. Every business large and small, those with and without GHG emissions, should engage in the conversation and stay tuned for further developments of the GHG rulemaking petition as 2019 unfolds. ■

Oil and gas legislation *Continued from page 1*

DRBC property owner compensation

On March 26, the Environmental Resources and Energy Committee considered and approved by a 16-9 margin **HB 827,** a bill that would require the Delaware River Basin Commission (DRBC) to reimburse the owners of oil and gas rights for the taking of their property if the commission approves regulations banning hydraulic fracturing within the basin *(March PIOGA Press, page 1).* The measure is sponsored by Representative Jonathan Fritz (R-Wayne).

Last session, a Fritz-authored resolution calling on the DRBC to halt consideration of the regulations passed the House but did not advance further. This time around, he has joined with Senator Lisa Baker (R-Luzerne) in offering legislation requiring compensation for property owners, arguing the agency's action would effectively constitute eminent domain.

"My people are being wronged," Fritz said during the House committee hearing. "Government cannot take property from landowners without adequate compensation."

He estimated the total cost of compensation would exceed $10 billion. The proposal likely would be vetoed by Governor Wolf if it passes both chambers.

Well permitting reforms

A second bill to earn committee approval on March 26 was **HB 828,** also sponsored by Fritz, which makes several reforms to well permitting, including:

• Extending the term for well permits up to three years. The applicant may choose a one-, two- or three-year permit.

• Allowing for a single unconventional gas well permit to apply to multiple wells on a single pad. The multi-well pad permit would cost $2,000. Each well to be permitted on the pad would pay a separate well permit fee. The area of review survey identifying any wells which penetrate within 1,500 feet of planned hydraulic fracturing perforations must be submitted concurrently with the well record. The multi-well pad permit expires after five years if drilling does not commence during that time.

• Allowing the final location of a well to be within 50 feet of the specific position identified in a well permit application. It is not considered a violation if a well bore path deviates from that shown on the plat if done so for due to geologic, safety, environmental protection, optimal resource extraction or other reasonable consideration.

The extended permit period, multi-well pad permitting and well bore adjustments were called for in a January 2018 white paper issued by the Department of Environmental Protection. However, Representative Greg Vitali (D-Delaware), the minority chair of the House Energy and Environmental Resources Committee, claimed that DEP supports the concepts in the bill, but does not support the legislation as written because it does not include the existing safeguards included the Oil and Gas Act. He did not specify which safeguards were supposedly missing.

PIOGA backs passage of all three bills. They go next before the full House of Representatives for consideration. ■


RLA
Learning &
Conference Center
At Cranberry Woods

Axes & Ales networking event

Getting together for an axe-throwing competition sounds like a crazy idea, but our inaugural Axes & Ales networking event at LumberJaxes in Pittsburgh was a sold-out affair and everyone had a great time. Thanks to our event sponsor, Pro Pipeline Solutions, and beer sponsor, Liberty Mutual. We're tentatively planning to hold it again next March.

PIOGA at the Great Energy Gathering
March 20, Cannonsburg

PIOGA committee changes name, updates mission

The association's Pipeline and Gas Market Development Committee is now simply the Market Development Committee.

The change comes after several months of discussion among the committee's leadership and reflects the broader scope of what the group does.

At the committee's February meeting, members also discussed and unanimously decided on an updated mission statement: "The Market Development Committee advocates for the responsible production, development and use of PIOGA member resources."

It was noted that the previous mission statement seemed too cumbersome, potentially excluded some types of members and had become stale.

When PIOGA was formed in 2010, the long-time name for the group—the Transportation and Marketing Committee—was carried forward from one of the association's predecessor organizations. It was eventually revised to the Pipeline and Gas Market Development Committee in light of the group's expanded focus on ways to expand the use of Pennsylvania-produced natural gas.

If you would like to learn more about the Market Development Committee and possibly become a member of the group, go to members.pioga.org and then click on Committees from the top navigation bar. ■

Grant Township ordered to pay small portion of PGE legal fees

A federal judge has ordered Grant Township to pay PIOGA member Pennsylvania General Energy Company, LLC (PGE) nearly $103,000 in attorneys' fees and costs in a lawsuit challenging the constitutionality of a so-called "Community Bill of Rights" ordinance intended to block the company's construction of a wastewater disposal well in the Indiana County municipality.

In an opinion issued April 1 in response to PGE's motion for attorneys' fees, Judge Susan Paradise Baxter of the U.S. District Court for Western Pennsylvania said PGE had clearly prevailed in its challenge of the ordinance the township adopted in 2014. After the court ruled the ordinance unconstitutional in 2015, the township adopted a home rule charter containing the same provisions the judge had overturned—asserting that residents have a right to be free of activities that risk harming water, soil or air quality such as an oil and gas wastewater disposal well, and that they can invalidate state and federal laws to exercise that freedom.

"Even after the ordinance was adjudged pre-empted by state law, Grant Township sought to make an end run around that judicial determination by amending its form of government and adopting the pre-empted and constitutionally deficient provisions in the form of a Home Rule Charter," she wrote.

The ruling is yet another setback for the Community Environmental Legal Defense Fund (CELDF), a nonprofit that has convinced Grant Township and other municipalities in Pennsylvania and elsewhere to enact rules that purportedly give them local control over oil and gas development and other undesired activities. Earlier in the case, Baxter imposed $52,000 in legal sanctions against CELDF founder Thomas Linzey and another attorney with the organization and referred the matter to the Disciplinary Board of the Pennsylvania Supreme Court to consider possible disciplinary measures against Linzey.

In her April 1 opinion, Judge Baxter pointed out that PGE had offered to accept only about one-sixth of its proven legal costs. She ordered the township to pay $100,000 in attorney fees and $2,979.18 in costs and said the company's acceptance of that amount "is infinitely reasonable," since PGE provided attorney billing records that totaled in excess of $600,000 for more than 1,700 hours of work on the case.

Grant Township opposed the legal fees on several grounds, including the municipality's limited financial means. However, "the losing party's financial ability to pay is not a 'special circumstance,'" Baxter wrote. "Moreover, Grant Township should have to bear some of the responsibility here as it was on notice that the ordinance was constitutionally suspect and likely pre-empted before it was passed."

Grant Township also argued that PGE's litigation strategy prolonged the proceedings and drove up costs. Judge Baxter asserted that "it is not PGE's litigation strategy that has prolonged this case, but Grant Township's. She pointed to "[t]he continued pursuit of frivolous claims and defenses, despite Linzey's first-hand knowledge of their insufficiency and the refusal to retract each upon reasonable requests, substantially and inappropriately prolonged this litigation, and required the Court and PGE to expend significant time and resources eliminating these baseless claims."

In a press release by CELDF)and a public statement by Grant Township, they described the judge's decision as "hideous" and CELDF accused the judge of conspiring against Grant Township: "This is how courts destroy communities. They side with industry, attempt to bankrupt us, and attempt to silence our lawyers." According to media reports, Grant Township officials hope to appeal Judge Baxter's order.

Background

Adopted in June 2014, the township's ordinance specifically banned underground injection wells and purported to supersede any state or federal injection well permit. PGE, which obtained an underground injection well permit from the U.S. Environmental Protection Agency in 2014 and had applied for a Pennsylvania Department of Environmental Protection permit, filed a complaint in federal District Court in August 2014 challenging the constitutionality, validity and enforceability of the ordinance.

The court initially invalided six provisions of the ordinance on state law grounds in 2015 , and in March

2017 went on to grant three of the six grounds asserted in PGE's motion for summary judgment on the remaining federal claims, attorneys from Babst Calland, who have been representing PGE, explained in the May 2017 issue of *The PIOGA Press*. The court found that Grant Township's ordinance violated the Equal Protection Clause of the Fourteenth Amendment because it discriminated against corporations, the Petition Clause of the First Amendment because it attempted to limit PGE's access to the courts and the Due Process Clause of the Fourteenth Amendment because it demonstrated "irrational and arbitrary behavior, which acknowledges language contrary to existing law and takes the purpose outside of the original point of the Ordinance." The court rejected Grant Township's motion for summary judgment on its counterclaim, which claimed that PGE is violating the rights of Grant Township's residents to "local community self-government."

On the heels of the court decision invalidating Grant Township's ordinance ban, DEP reissued PGE's underground injection well permit. DEP then filed actions against Grant Township and Highland Township, Elk County, asking the Commonwealth Court to invalidate and enjoin enforcement of the same provisions that both townships had added to a home rule charter. In April 2017, the Commonwealth Court issued orders in both cases, temporarily enjoining the townships from enforcing their charters, pending a final determination on the merits.

PIOGA intervened in the case in October 2014 to press for a ruling that the ordinance was also unconstitutional under the Pennsylvania Constitution. PIOGA fully participated in the proceeding until after the court's ruling imposing sanctions on CELDF's attorneys. As a result of that ruling, the parties agreed to settle the case pending the judge's ruling on PGE's attorneys' fees request, and PIOGA withdrew its claims to facilitate ending the district court litigation and setting the stage for appeals.

The township's public statement also said that "we will seek the input and guidance of our constituents as we steadfastly slog away thru this mess." Hopefully their constituents will finally become fed up, as Highland Township's constituents were, and elect new supervisors that will put an end to Grant Township's "slogging away." PIOGA notes that the Seneca Resources' disposal well is now operating in Highland Township and the so-called "Crystal Spring Ecosystem" hasn't suffered from it. ■

Legal challenge to DCNR streambed ownership filed with little-known state board

Loyalsock Creek in Northcentral Pennsylvania

By Kevin Moody
Vice President & General Counsel

In September 2010, the Department of Conservation and Natural Resources (DCNR) initiated a "Navigable Streams Management Program" declaring, among other legal conclusions, that the Commonwealth owns the streambeds underlying streams designated by legislation as "public highways." DCNR has implemented this declaration by requiring lessees to enter into streambed leases that essentially remove the streambed acreage from the leased property, which then reduces the royalties to the lessor landowners. It appears that this DCNR program is targeted only at streambeds that are located in areas where oil and natural gas production is occurring from shale formations.

Many in the industry questioned the legality of this declaration and program when it was announced, but until last year—perhaps due to the relatively small amounts of royalties involved and the significant time and costs of litigation—DCNR's program proceeded unchallenged. That changed last June when a group of landowners filed a class-action challenge to the program with the Board of Property, a little-known state tribunal within the Department of Community and Economic Development that has jurisdiction over actions concerning ownership interests in real property claimed by the Commonwealth.

The "public highway" streams involved in this class action complaint are the Mehoopany, Lycoming and Loyalsock creeks. The lessees involved are Chesapeake Energy Corporation, Statoil Onshore USA and SWN (Southwestern Energy).

Apart from issues involving class actions, this case raises issues of great significance to parties to existing leases that include "public highway" streams, to parties considering leases that include "public highway" streams, as well as to the general public and the public "fisc." These issues include:

• Is the heretofore-accepted conclusion that the Commonwealth owns the beds of all navigable rivers, streams, creeks and bodies of water a correct statement of English common law?

• If not, has this incorrect application of English common law effected an unconstitutional judicial taking of private property without just compensation and, if so, what if anything can be done about it now?

• Even if the Commonwealth owns the beds of the "Great Rivers"—the Ohio, Monongahela, Allegheny, Susquehanna and its north and west branches, Juniata, Schuylkill, Lehigh, Delaware and Clarion—does the Commonwealth also own the beds of "public highway" streams deemed "navigable-in-law"?

• Must a "public highway" be shown to be "navigable-in-fact" to vest ownership of the underlying streambed—and its valuable oil, natural gas and minerals—in the Commonwealth?

• Does DCNR or the Department of Environmental Protection have the authority to lease oil, natural gas and minerals underlying Commonwealth-owned river and stream beds?

• If the legislative declarations transferred private ownership of the streambeds underlying the "public highway" streams to the Commonwealth, are the landowners entitled to just compensation?

• Do the private owners of streambeds underlying "public highway" streams transferred to the Commonwealth have any recourse for recovering their property tax payments made after the legislative declarations?

PIOGA and the Marcellus Shale Coalitionare monitoring this Board of Property litigation and considering options for participation. Industry's position is that the legislative "public highway" stream declarations created navigation easements in the streams in favor of the Commonwealth and did not vest ownership of the underlying streambeds in the Commonwealth. This litigation remains in the early stages, with briefing on DCNR's preliminary objections expected to be completed near the end of May. PIOGA will provide updates as the litigation progresses. The case is *Dunlap et al. v DCNR*, Docket No. BOP-2018-0003. ■

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An active shooter appears at your workplace. How do you respond?

By Carol C. Delfino, CIH, CSP
SE Technologies, LLC

An individual actively engaged in killing or attempting to kill people in a confined and populated area is an active shooter. Active shooter situations are unpredictable and evolve very quickly. Shooter situations often are over within 10-15 minutes before law enforcement arrives on the scene. Individuals must be prepared both mentally and physically to deal with an active shooter situation.

How to respond to an active shooter in the workplace:

- Quickly determine the most reasonable way to protect your own life.
- Customers, client or guests will follow the lead of employees.
- Evacuate
  - Have an escape route plan in mind.
  - Evacuate regardless of whether others agree to follow.
  - Leave belongings behind.
  - Keep your hands visible.
  - Do not attempt to move wounded people.
  - Help others escape with you if possible.
  - Call 911 when it is safe to do so.
- Hide out
  - Find a place to hide where the shooter is less likely to find you.
  - The hiding place should provide protection if - shots are fired in your direction and not trap or restrict your options for movement.
  - Lock the door.
  - Blockade the door with furniture or other heavy objects.
  - Silence your cell phone and turn off any source of noise.
  - Hide behind large items and remain quiet.
  - Dial 911, if possible.
  - If you cannot speak leave the phone line open and allow the dispatcher to listen.
- Take action against the shooter
  - Do this only when your life is in imminent danger.
  - Act aggressively as possible against him/her.
  - Throw items at the shooter and improvise weapons.
  - Yell.

When law enforcement arrives, what do you do?

- Remain calm and follow the officers' instructions.
- Put down any items in your hands and keep your hands visible at all times.
- Avoid making any quick movements, pointing or screaming.
- Provide the following information to the officer:
  - Location of the active shooter
  - Number of shooters
  - Physical description of the shooters
  - Number and type of weapons that you saw
  - A number of potential victims at the location

Remember to always foster a respectful workplace. Be aware of indications of workplace violence and take remedial actions accordingly.

More information on this topic: www.osha.gov/OshDoc/data_General_Facts/factsheet-workplace-violence.pdf. ■

The impact of a severance tax: An analysis

With nearly $1.7 billion over the past seven years paid by natural gas producers from the current impact tax, Pennsylvania's governor continues to propose a severance tax

By Bertison-George, LLC

Governor Wolf has proposed yet another severance tax on the oil and gas industry (February PIOGA Press, page 1). Bertison-George, LLC (BG) would like to bring forward a few facts regarding this proposal. BG would also like to compare Pennsylvania's severance tax proposal to those of its surrounding states.

Pennsylvania does not have a severance tax at this time, although both Ohio and West Virginia, while being applied differently, do. Pennsylvania does have an impact tax, and it has brought in nearly $1.7 billion since 2012. These funds support statewide environmental and conservation programs, as well as community improvement initiatives in all 67 counties. Since 2012, more than $1 billion has supported community programs and local infrastructure improvements. And approximately $375 million has been allocated to statewide initiatives related to infrastructure projects, including the Growing Greener fund, Marcellus Legacy Grants, water and sewer improvements, and brownfield cleanup.

In the following report, BG will discuss how the three states are both alike and different regarding the collection of tax revenues from oil and natural gas producers.

Pennsylvania's current tax on the natural gas industry

Pennsylvania's Act 13 impact fee is a per-well tax that varies dependent on the average price of natural gas during the year. This particular tax is applied for 15 years. Chart 1 below shows how the impact tax is calculated for the first four years:

Chart 1 - Impact Fee Rate Schedule

	Commodity Price Range				
	$0.00 - $2.25	$2.26 - $2.99	$3.00 - $4.99	$5.00 - $5.99	$6.00 - $9999.99
Year 1	$40,000	$45,000	$50,000	$55,000	$60,000
Year 2	$30,000	$35,000	$40,000	$45,000	$55,000
Year 3	$25,000	$30,000	$30,000	$40,000	$50,000
Year 4	$10,000	$15,000	$20,000	$20,000	$20,000

Fee is per well

Source: PAPUC

BG took a look from a producer's point of view on how this tax would have impacted production costs for each well drilled in the initial year of its production. BG calculated the number of wells drilled in a specific year and multiplied it by the impact tax rate schedule shown above to determine how much impact tax was delivered to the state. We then utilized production information from the Pennsylvania Department of Environmental Protection (DEP) and determined how much those specific wells produced in that first year. BG then divided the year-specific wells by their production in those years to determine the cost per production or $/Mcf. Chart 2 below summarizes those calculations:

It's important to note that the annual average price utilized by the Pennsylvania Public Utility Commission, which

Chart 2 - Impact Fee Calculation

Year	Avg ($/Mcf)*	Yr 1 Per Well Fee	Spud Wells	Initial Year Well Impact Fee	Production For Wells in Year Initially Spud (Mcf)	Impact Tax ($/Mcf)
2012	$2.78	$45,000	1,351	$60,795,000	75,453,876	$0.81
2013	$3.65	$50,000	1,211	$60,550,000	139,968,669	$0.43
2014	$4.42	$50,000	1,369	$68,450,000	134,270,283	$0.51
2015	$2.66	$45,000	784	$35,280,000	82,384,132	$0.43
2016	$2.46	$45,000	502	$22,590,000	25,788,778	$0.88
2017	$3.11	$50,000	808	$40,400,000	134,405,592	$0.30
2018	$3.09	$50,000	918	$45,900,000	2,588,085,737	$0.02
Seven Year Average	$3.17					$0.48

* Per PAPUC

administers the tax, is based on the average of natural gas in Louisiana (Henry Hub). Natural gas in Pennsylvania trades at a discount to that price. In fact, the average of two trading points in Pennsylvania has been $0.78 below that of the Henry Hub for the past four years. There are times when Pennsylvania priced natural gas has been up to $1.94 below that of the Henry Hub.

Since some wells aren't put into production until the latter part of the year, producers will pay the full annual fee of between $40,000 and $60,000, but have little production. Thus, the impact tax/Mcf would be much higher than a well put in production earlier in the year.

However, from a competitive state-versus-state perspective, one must look at how wells are going to perform in their initial year of production, and at which state will provide the most economical scenario. We also need to factor what the total tax rate would be based on the recent proposal. The chart below adds the $0.04 per MMBtu severance tax proposal to the previous seven years of the impact tax.

On average the total tax to producers would equal $0.58 per Mcf for the first-year wells that are put into production.

Chart 3 - Combined Impact and Severance Tax

Year	Impact Tax ($/Mcf)	Proposed Severance Tax ($/Mcf)	Total Tax Rate ($/ Mcf)
2012	$0.81	$0.09	$0.90
2013	$0.43	$0.11	$0.54
2014	$0.51	$0.11	$0.62
2015	$0.43	$0.09	$0.52
2016	$0.88	$0.09	$0.97
2017	$0.30	$0.11	$0.41
2018	$0.02	$0.11	$0.13
Seven Year Average	$0.48	$0.10	$0.58

Severance tax projected effect

Chart 4 below compares the estimated severance tax from 2019 to 2024 by the governor, and what BG calculates them to be based on the current market. From the producer standpoint, the net regional price needs be discounted again for transportation costs and royalties. BG utilized an average of $0.80 per Mcf and an average royalty of 15 percent, respectively. Both were provided by the Marcellus Shale Coalition.

Chart 4 - Estimated Severance Tax Rate

	2019/20	2020/21	2021/22	2022/23	2023/24
Henry Hub	$2.96	$2.69	$2.63	$2.65	$2.73
Regional Discount	-$0.42	-$0.51	-$0.59	-$0.66	-$0.65
Net Regional Price	$2.54	$2.18	$2.04	$1.99	$2.08
Transportation Costs	$0.80	$0.80	$0.80	$0.80	$0.80
Royalties (15%)	$0.38	$0.33	$0.31	$0.30	$0.31
Net Price before Sev. and Impact Tax	$1.36	$1.05	$0.93	$0.89	$0.97
Impact Tax	$0.48	$0.48	$0.48	$0.48	$0.48
Severance Tax	$0.09	$0.09	$0.09	$0.09	$0.09
Net Price Received by Producers	$0.79	$0.48	$0.36	$0.32	$0.40
Severance Tax %	6.70%	8.64%	9.74%	10.21%	9.40%

All prices are $ per Mcf

Chart 5 shows the comparison of the impact of the governor's percentage estimate to what the impact is under current market conditions.

Chart 5 - Total Tax Impact

			Estimate		
	2019/20	2020/21	2021/22	2022/23	2023/24
Governor Estimate	4.50%	4.50%	3.80%	3.40%	3.00%
Current Market	6.70%	8.64%	9.74%	10.21%	9.40%
Impact Fee	35.32%	45.58%	51.39%	53.84%	49.59%
Total Current Market	42.02%	54.23%	61.13%	64.05%	58.99%

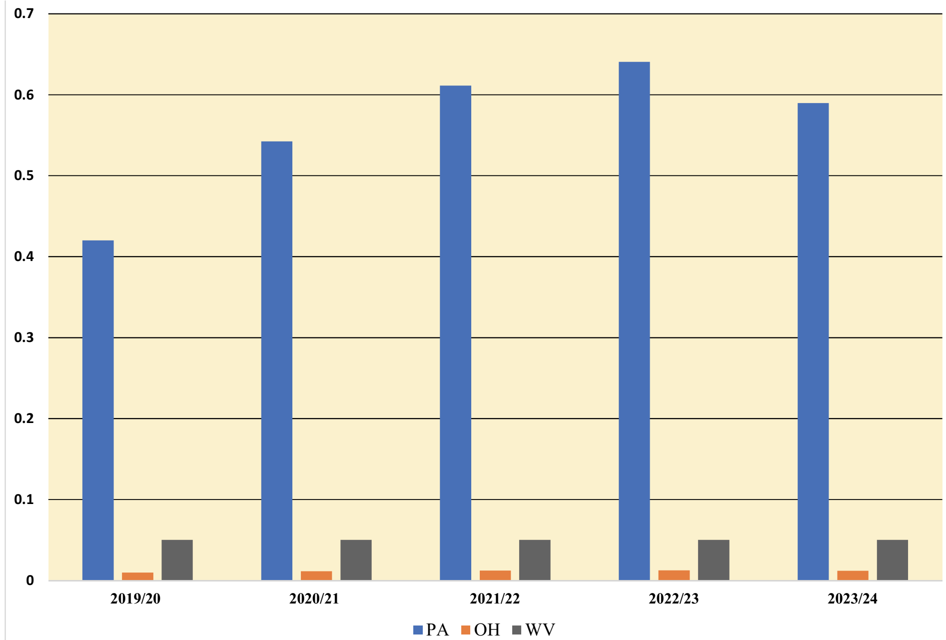
Regional comparison to Ohio and West Virginia

In comparison, both Ohio and West Virginia are much more competitive. The graphic on the following page shows how Pennsylvania would stack up.

As a result of both the impact tax and proposed severance tax charged in Pennsylvania, well and pipeline development will undoubtedly be hampered. In which state would be the logical one to invest millions of capital? Pennsylvania, where you would make as little as $0.32 per Mcf in the first year? Or would you turn to Ohio and West Virginia, where the return on your investment would be significantly more?

In summary, an additional tax on production for the sake of saying Pennsylvania has a severance tax seems to be disadvantageous for future well development. Impact tax revenues collected from the natural gas industry are already supporting local bridge, road and other critical infrastructure improvements, as well as community parks, first-responders, soil and water conservation districts, environmental projects, and housing initiatives. Said funding could be short lived when producers move their rigs to Ohio and West Virginia. ■

Impact/Severance Tax Comparison by State



Study highlights advantages for chemical manufacturing in region

Investing in select chemical projects in the "Shale Crescent" region of Ohio, West Virginia and Pennsylvania offers financial advantages—rooted in feedstock and delivery costs—when compared to opportunities on the Gulf Coast and in other regions, according to a new independent study by global business information provider IHS Markit.

Commissioned by Shale Crescent USA, "Estimated Logistics Benefits of the Shale Crescent USA Region Versus the U.S. Gulf Coast for Natural Gas and LPG," highlights chemical industry development opportunities for the region based on predicted volumes and cost of natural gas and methane, propane and normal butane (LPG) production in the Marcellus and Utica shale plays; the estimated logistics-related cost advantage of feedstock supply; and the cost to distribute the chemical products to regional customers. The report follows a previous study conducted by IHS Markit in March 2018 which evaluated the prospects for a world-scale ethylene and polyethylene plant based on ethane feedstock in the region.

IHS Markit forecasts that the region will supply 45 percent of United States natural gas production by 2040, up from 29 percent in 2018. As a byproduct of abundant shale gas, the Shale Crescent region is rich in natural gas liquids (NGLs) used in petrochemical production and plastics manufacturing, including ethane, propane and butane. IHS Markit forecasts the region will supply 19 percent of United States NGL production in 2040, up from 14 percent in 2018.

While the Gulf Coast has long served as the United States' primary energy and petrochemical hub, the Shale Crescent region's abundant natural gas and NGL supply—combined with its access to water for transportation and processing, as well as its proximity to the vast majority of North American demand for thermoplastics—make it a prime candidate for a second U.S. petrochemical hub .

"The Shale Crescent USA region will be a significant contributor to the supply of natural gas, ethane, and LPG well into the future," said Anthony Palmer, vice president, chemical consulting at IHS Markit. "The specific supply and logistics of natural gas and LPG in the Shale Crescent USA region affords a cost advantage to its local use within the region, albeit not as significant as that of ethane."

Palmer also concluded that "while both methanol and ammonia/urea production from natural gas are economically advantaged in the region due to the low feedstock costs, the most advantaged LPG derivative is an integrated propylene (via propane dehydrogenation) to polypropylene project in the Shale Crescent region. Access to ample supplies of locally produced propane leads to a competitive manufacturing cost for propylene, and subsequently polypropylene, which is augmented by the region's close proximity to over three-quarters of the U.S. polypropylene end use market." ■

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New/returning PIOGA members
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Oil & Gas Producer

IGS Energy
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Service Provider—energy brokering, natural gas marketing

Kendra II LLC
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Service Provider—water management services, UIC disposal, trucking/transporting, storage solutions and water treatment

Follow us on the real PIOGA LinkedIn page

It's a rather long story, but the PIOGA page on the professional social networking site LinkedIn did not belong to the association, nor did we have any control over the content. We recently created an official PIOGA LinkedIn page as a place to post items about PIOGA events and activities as well as to share other industry news.

We encourage you to follow our page to keep up with what PIOGA is up to and to make other connections. You can find us at www.linkedin.com/company/pa-independent-oil-gas-association-pioga. ■

2018 oil & gas activity recap

Another record year for Pennsylvania natural gas production

The most recent quarterly report on natural gas production by the state's Independent Fiscal Office (IFO) noted that 2018 represented another milestone for Pennsylvania producers—6.115 Bcf, a 14.2 percent increase from the previous year.

Additionally, the number of producing unconventional wells last year was 8.736, which was 10.7 percent more than in 2017. Average production per well in 2018 was 1,666 MMcf, an increase of 30.7 percent over the prior year. The inventory of unconventional wells shut in or drilled but not yet completed declined by 7.6 percent to 1,450, the IFO reported.

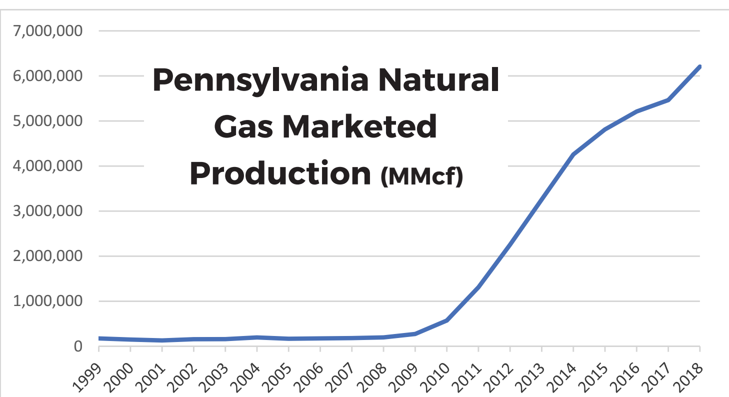
State production comparison (Bcf)

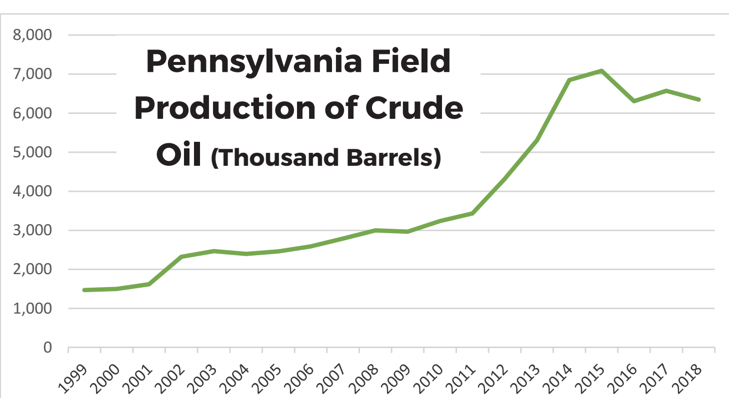
		Production Volume			Annual Growth Rate		
Rank	State	CY 2016	CY 2017	CY 2018	CY 2016	CY 2017	CY 2018
1	Texas	8,156.3	7,995.7	8,003.7	-7.3%	-2.0%	9.7%
2	Pennsylvania	5,210.2	5,463.9	5,643.2	8.3%	4.9%	13.8%
3	Alaska	3,230.2	3,250.8	2,950.1	1.7%	0.6%	-0.2%
4	Oklahoma	2,468.3	2,513.9	2,679.6	-1.3%	1.8%	17.3%
5	Louisiana	1,793.4	2,147.6	2,577.5	-1.1%	19.8%	33.6%
6	Ohio	1,437.3	1,772.9	2,160.1	42.7%	23.4%	35.1%
7	Colorado	1,688.4	1,687.7	1,664.1	0.0%	0.0%	8.3%
8	West Virginia	1,384.5	1,601.1	1,629.8	5.3%	15.6%	12.2%
9	Wyoming	1,848.6	1,804.7	1,579.2	-7.4%	-2.4%	-4.0%
10	New Mexico	1,282.7	1,324.9	1,383.7	-1.1%	3.3%	12.9%
11	All Other	4,091.8	3,794.2	3,374.9	-1.6%	0.4%	8.0%

Note: CY 2018 includes production through November and the corresponding growth rate is based on the same time period in CY 2017.
Source: U.S. Energy Information Administration. Production does not directly correspond to DEP data.

Wells drilled by county

County	Conventional	Unconventional	2018 Total	2017 Total
Allegheny	0	16	16	26
Armstrong	0	16	16	21
Beaver	0	38	38	20
Bradford	0	45	45	64
Butler	0	32	32	67
Cameron	0	12	12	0
Clarion	0	0	0	6
Clearfield	1	0	1	0
Clinton	0	5	5	0
Elk	1	25	26	21
Fayette	0	31	31	0
Forest	22	0	22	6
Greene	0	112	112	158
Lawrence	0	0	1	1
Lycoming	0	34	34	32
McKean	36	0	36	37
Potter	0	12	12	20
Sullivan	0	10	10	16
Susquehanna	0	174	174	94
Tioga	0	57	57	41
Venango	5	0	5	15
Warren	71	0	71	40
Washington	1	106	107	209
Westmoreland	0	44	44	7
Wyoming	0	11	11	8
Totals	**137**	**780**	**917**	**913**





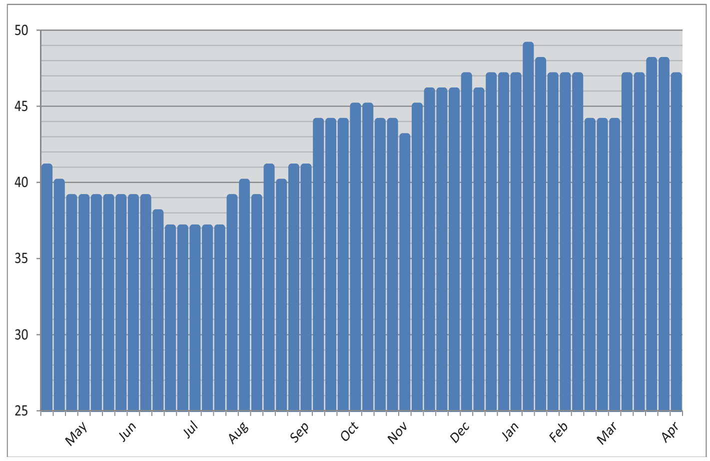
Date sources: PA Dept. of Environental Protection, US Energy Information Administration

Wells drilled by operator

Operator	Conventional	Unconventional	Total
Allegheny Enterprises Inc	1	0	1
Apex Energy (PA) LLC	0	2	2
ARD Opr LLC	0	15	15
Bald Hill Oil	4	0	4
Bearcat Oil Co LLC	2	0	2
BF Adventures LLC	2	0	2
Blackhawk Energy LLC	7	0	7
Bull Run Resources LLC	2	0	2
Cabot Oil & Gas Corp	0	122	122
Cameron Energy Co	15	0	15
Chesapeake Appalachia LLC	0	37	37
Chestnut Oil LLC	2	0	2
Chevron Appalachia LLC	0	67	67
Chief Oil & Gas LLC	0	31	31
CNX Gas Co LLC	0	64	64
Columbia Gas Trans LLC	1	0	1
Curtis Oil Inc	6	0	6
Daniel P Hornburg	1	0	1
Dunham Energy Partners LLC	1	0	1
Eclipse Resources PA LP	0	1	1
EM Energy PA LLC	0	12	12
EQT Prod Co	0	47	47
Gas & Oil Mgmt Assn Inc	5	0	5
Greylock Prod LLC	0	7	7
Howard Drilling Inc	2	0	2
Huntley & Huntley Energy Expl	0	4	4
Inflection Energy (PA) LLC	0	4	4
Jett Oil LLC	2	0	2
JKLM Energy LLC	0	11	11
Johnson Well Svc LLC	2	0	2
Kylander Oil Inc	4	0	4
Lindell & Maney LLC	5	0	5
Martin Matthew C	1	0	1
Mead Oil LLC	4	0	4
Minard Run Oil Co	11	0	11
MSL Oil & Gas Corp	9	0	9
PA Gen Energy Co LLC	0	8	8
PennEnergy Resources LLC	0	38	38
Pennfield Energy LLC	5	0	5
Pennhills Resources LLC	4	0	4
Pierce & Petersen	4	0	4
PVE Oil Corp Inc	14	0	14
Range Resources Appalachia	0	81	81
Repsol Oil & Gas USA LLC	0	43	43
Rice Drilling B LLC	0	51	51
Rick & Sons Oil LLC	5	0	5
Rockdale Marcellus LLC	0	10	10
Sammy-Mar LLC	1	0	1
Seneca Resources Co LLC	0	56	56
Snyder Bros Inc	0	11	11
SWEPI LP	0	7	7
SWN Prod Co LLC	0	35	35
Weldbank Energy Corp	5	0	5
Wilmoth Interests Inc	10	0	10
XTO Energy Inc	0	16	16
Totals	**137**	**780**	**917**

Oil & Gas Dashboard

Pennsylvania Rig Count



Penn Grade Crude Oil Prices

Natural Gas Futures Closing Prices

Month	Price
May	$2.710
June	2.749
July	2.805
August	2.832
September	2.827
October	2.847
November	2.905
December	3.054
January 2020	3.137
February	3.072
March	2.948
April	2.647

Prices as of April 8

Sources

American Refining Group: www.amref.com/Crude-Prices-New.aspx
Ergon Oil Purchasing: www.ergon.com/prices.php
Gas futures: quotes.ino.com/exchanges/?r=NYMEX_NG
Baker Hughes rig count: phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother
NYMEX strip chart: Nucomer Energy, LLC, emkeyenergy.com

Northeast Pricing Report — April 2019

Provided by Bertison-George, LLC
www.bertison-george.com

Front month trading decreased across the board. They ranged from $0.05 per MMBtu for Dominion Southpoint to $1.52 per MMBtu for Algonquin. One-year trading average prices had a very tight spread differential. Transco Z6 increased only $0.01 per MMBtu while Algonquin decreased $0.06 per MMBtu. The entire trading period had only minor changes as well. TETCO M3 increased by $0.04 per MMBtu with Algonquin decreasing by the same amount.

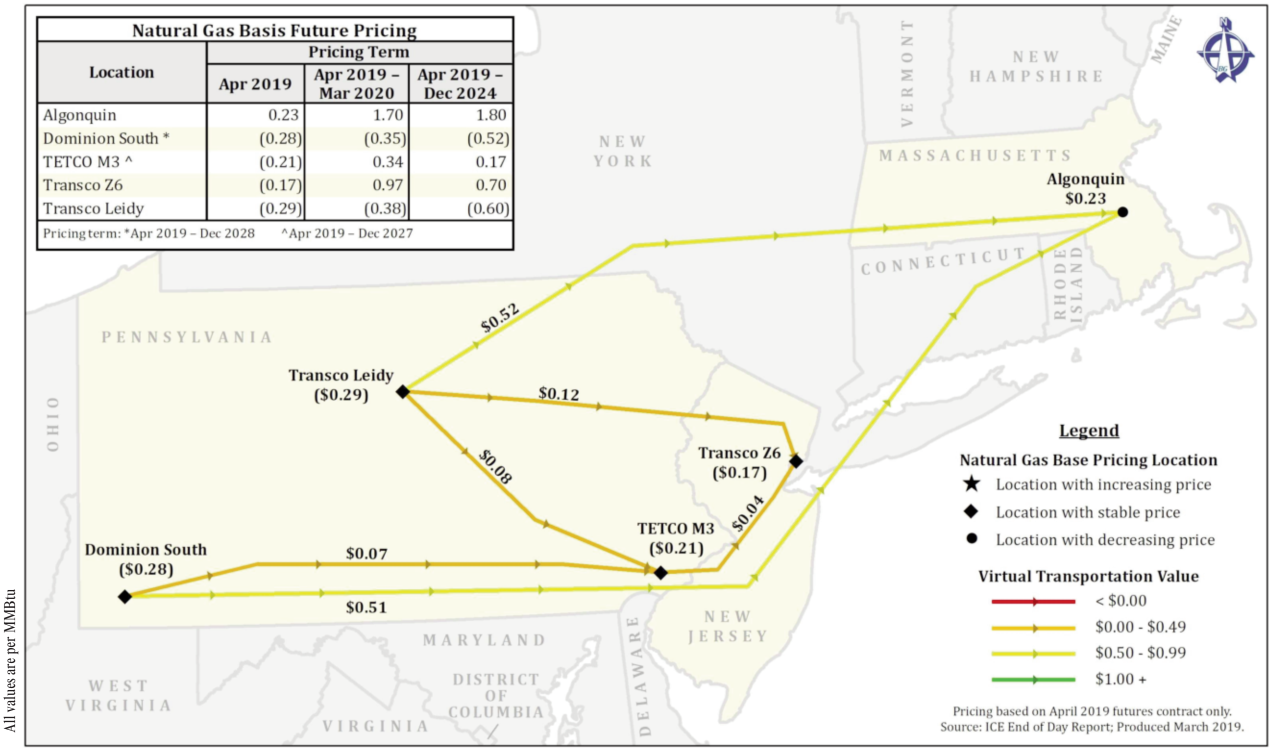
Transportation values continue to decline. Dominion and Transco Leidy to Algonquin decreased the greatest amounts. They were $1.47 and $1.44 respectively. The lowest was TETCO M3 to Transco Z6 which decreased by $0.12 per MMBtu.

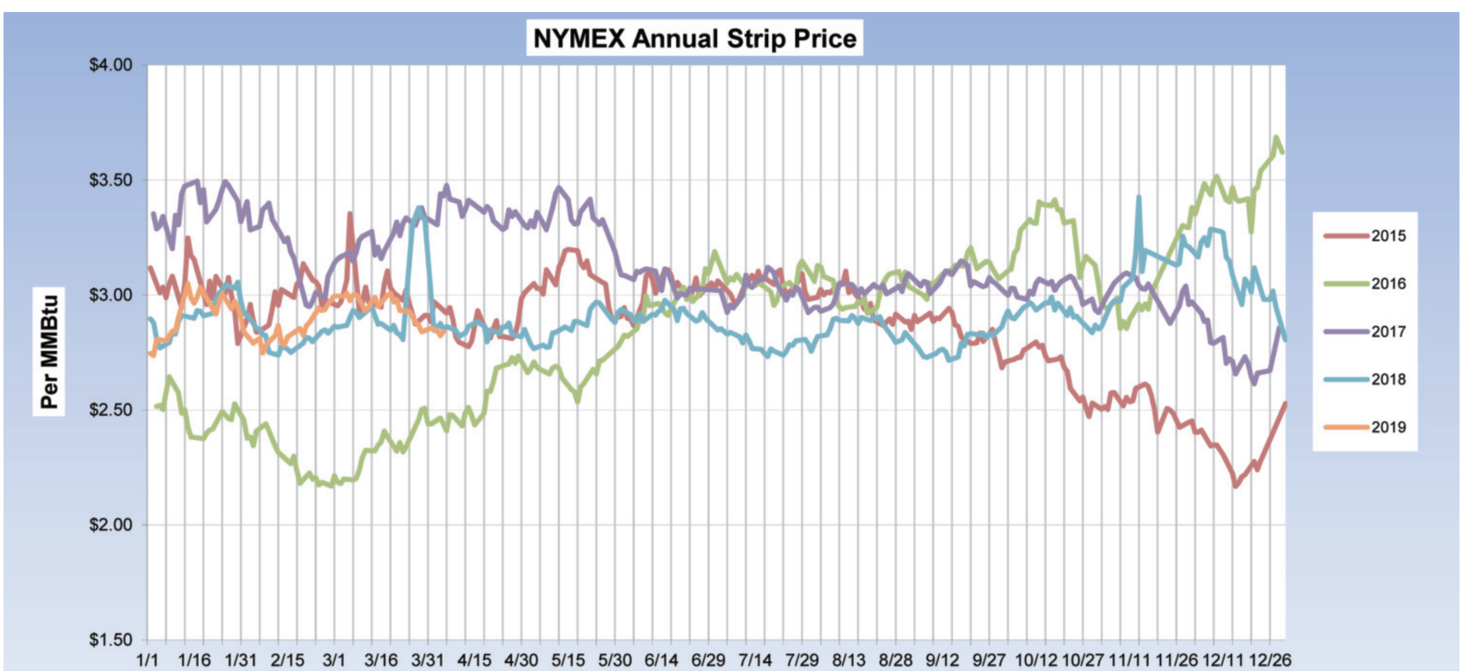
Production is increasing, however a large driver for the reduction in values is demand. Demand fell across all sectors. Total U.S. consumption of natural gas fell by 3% compared with the previous report week, according to data from the EIA. Natural gas consumed for power generation declined by 4% week over week. Industrial sector consumption decreased by 2% week over week. In the residential and commercial sectors, consumption declined by 2%. Natural gas exports to Mexico were the same as last week, averaging 4.6 Bcf per day.

Natural Gas Basis Future Pricing

Location	Pricing Term: Apr 2019	Apr 2019 – Mar 2020	Apr 2019 – Dec 2024
Algonquin	0.23	1.70	1.80
Dominion South *	(0.28)	(0.35)	(0.52)
TETCO M3 ^	(0.21)	0.34	0.17
Transco Z6	(0.17)	0.97	0.70
Transco Leidy	(0.29)	(0.38)	(0.60)

Pricing term: *Apr 2019 – Dec 2028 ^Apr 2019 – Dec 2027





Spud Report: March 2019

The data show below comes from the Department of Environmental Protection. A variety of interactive reports are available at www.dep.pa.gov/DataandTools/Reports/Oil and Gas Reports.

The table is sorted by operator and lists the total wells reported as drilled last month. **Spud** is the date drilling began at a well site. The **API number** is the drilling permit number issued to the well operator. An asterisk (*) after the API number indicates a conventional well.

OPERATOR	WELLS	SPUD	API #	COUNTY	MUNICIPALITY
BKV Opr LLC	2	3/6/19	131-20573	Wyoming	Meshoppen Twp
		3/11/19	131-20574	Wyoming	Meshoppen Twp
Cabot Oil & Gas Corp	1	3/5/19	115-22558	Susquehanna	Auburn Twp
Cameron Energy Co	2	3/4/19	123-48205*	Warren	Sheffield Twp
		3/15/19	123-48204*	Warren	Sheffield Twp
Chesapeake Appalachia LLC	6	3/1/19	015-23452	Bradford	Smithfield Twp
		3/2/19	015-23453	Bradford	Smithfield Twp
		3/23/19	015-23450	Bradford	Wilmot Twp
		3/24/19	015-23451	Bradford	Wilmot Twp
		3/14/19	131-20560	Wyoming	Meshoppen Twp
		3/15/19	131-20566	Wyoming	Meshoppen Twp
Chief Oil & Gas LLC	2	3/11/19	113-20412	Sullivan	Elkland Twp
		3/11/19	113-20414	Sullivan	Elkland Twp
Hilcorp Energy Co	1	3/16/19	073-20543	Lawrence	North Beaver Twp
Daniel P Hornburg	2	3/4/19	123-48287*	Warren	Pleasant Twp
		3/25/19	123-48146*	Warren	Sheffield Twp
Howard Drilling Inc	1	3/1/19	083-56923*	McKean	Wetmore Twp
PA Gen Energy Co LLC	2	3/9/19	083-57146	McKean	Norwich Twp
		3/12/19	083-57147	McKean	Norwich Twp
PVE Oil Corp Inc	2	3/4/19	083-57165*	McKean	Sergeant Twp
		3/18/19	083-57097*	McKean	Sergeant Twp
Range Resources Appalachia	11	3/4/19	007-20584	Beaver	Independnce Twp
		3/4/19	007-20586	Beaver	Independnce Twp
		3/6/19	007-20583	Beaver	Independnce Twp
		3/6/19	007-20585	Beaver	Independnce Twp
		3/1/19	125-28621	Washington	Robinson Twp
		3/2/19	125-28618	Washington	Robinson Twp
		3/2/19	125-28620	Washington	Robinson Twp
		3/27/19	125-28642	Washington	Smith Twp
		3/27/19	125-28643	Washington	Smith Twp
		3/27/19	125-28640	Washington	Smith Twp
		3/27/19	125-28641	Washington	Smith Twp
Repsol Oil & Gas USA LLC	4	3/4/19	015-23441	Bradford	Pike Twp
		3/4/19	015-23442	Bradford	Pike Twp
		3/4/19	015-23443	Bradford	Pike Twp
		3/4/19	015-23444	Bradford	Pike Twp
Seneca Resources Co LLC	6	3/5/19	047-25058	Elk	Jones Twp
		3/5/19	047-25060	Elk	Jones Twp
		3/6/19	047-25056	Elk	Jones Twp
		3/6/19	047-25059	Elk	Jones Twp
		3/7/19	047-25061	Elk	Jones Twp
		3/7/19	047-25057	Elk	Jones Twp
SWN Prod Co LLC	7	3/27/19	015-23474	Bradford	Stevens Twp
		3/27/19	015-23475	Bradford	Stevens Twp
		3/28/19	015-23472	Bradford	Stevens Twp
		3/28/19	015-23473	Bradford	Stevens Twp
		3/4/19	081-21734	Lycoming	Jackson Twp
		3/5/19	081-21791	Lycoming	Jackson Twp
		3/6/19	081-21735	Lycoming	Jackson Twp
Whilton Brooks A	1	3/12/19	123-48178*	Warren	Glade Twp
Wilmoth Interests Inc	1	3/26/19	123-48279*	Warren	Sheffield Twp
XTO Energy Inc	8	3/11/19	019-22799	Butler	Prospect Boro
		3/14/19	019-22741	Butler	Prospect Boro
		3/14/19	019-22742	Butler	Prospect Boro
		3/15/19	019-22798	Butler	Prospect Boro
		3/15/19	019-22800	Butler	Prospect Boro
		3/15/19	019-22801	Butler	Prospect Boro
		3/15/19	019-22803	Butler	Prospect Boro
		3/16/19	019-22802	Butler	Prospect Boro

	March	February	January	December	November	October
Total wells	**59**	**92**	**75**	**55**	**90**	**104**
Unconventional Gas	49	82	72	42	78	85
Conventional Gas	0	0	0	1	0	0
Oil	9	10	2	8	12	13
Combination Oil/Gas	1	0	1	4	0	6

Calendar of Events

PIOGA events

PIOGA event info: www.pioga.org/events

Spring Meeting
April 10, Rivers Casino, Pittsburgh

PIOGATech: Well Plugging Workshop
April 25, Clarion University, Clarion

Sporting Clays Shoot
May 2, Promised Land Sporting Clays, Freeport

Ted Cranmer Memorial Golf Outing and Steak Fry
June 3, Wanango Country Club, Reno

PIOGATech: Water and Waste
August 21, The Chadwick, Wexford

Divot Diggers Golf Outing
August 22, Tam O'Shanter Golf Course, Hermitage

Cigar Networking Event
July TBA, BURN, Pittsburgh

Fall Conference / Annual Meeting
September 24-25, Seven Springs Mountain Resort, Champion

PIOGATech: Safety Risk Management
October 17, Location TBA

Halloween Theme Networking Event
November 1, Location TBA

Marcellus to Manufacturing Conference
November 7, Location TBA

Annual Oil & Gas Tax and Accounting Seminar
November 20, Location TBA

PIOGATech: Air Quality Compliance
December 17, The Chadwick, Wexford

Holiday Mixer
December 17, The Chadwick, Wexford

Other association & industry events

DUG East
June 18-20, David L. Lawrence Convention Center, Pittsburgh
dugeast.com

IPAA Midyear Meeting
June 24-26, Colorado Springs, CO
www.ipaa.org/events

IOGANY Annual Summer BBQ
July 11, Peek'n Peak Resort & Conference Center Findley, NY
www.iogany.org

OOGA Summer Meeting
July 16, Canton, OH
www.ooga.org

IOGAWV Summer Meeting
August 4-6, The Greenbrier, White Sulphur Springs, WV
iogawv.com

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