

Shale Gas Roundup



Potter County, Pa.

1st Quarter
2018

DEP Sets Public Hearing For Treatment Plant

Citizens have an opportunity to learn details about the shale gas wastewater treatment plant proposed for a parcel in west Coudersport and offer input to state regulators on Tuesday, Jan. 16, at the Gunzburger Building in Coudersport, Pa. Dept. of Environmental Protection (DEP) will host a presentation on the project at 5:30 p.m. A public hearing will follow at 7, during which testimony will be accepted by DEP.

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Mike Broeker (left), chief operating officer for Epiphany Allegheny LLC, believes the company has come up with an environmentally friendly option for treating wastewater produced in shale gas drilling. A high-tech membrane shown here by Carnegie-Mellon University professor Meagan Mauter allows water vapor to pass while blocking impurities. Wastewater would be brought to the processing plant in tankers and either returned to well pads for further use, or processed through the borough's treatment facility.

Detailed study examines shale gas impact on schools

Shale gas development in Pennsylvania has been the subject of public debate and academic research for more than a decade. But, until recently, no one was taking a look at the industry's impact on school districts. That has changed with the recent release of findings by the Penn State University Marcellus Education Team.

A comprehensive survey of 940 educators as well as interviews and focus sessions with 50 educational and community leaders across Pennsylvania's shale gas range have been analyzed by the study's leaders, who reported their results late last year.



Educators and school administrators across the shale gas-producing counties of Pennsylvania were interviewed in a Penn State study conducted to assess the industry's impact on public education.

Group calls for setback from schools

Protect Our Children, a coalition of parents, concerned citizens, public health professionals and advocacy organizations, has delivered 3,000 petition signatures to the Pa. Dept. of Environmental Protection (DEP) calling for oil and gas activities to be kept at least one mile from schools.

Members cite the potential health risks to students who are in close proximity to production facilities.

"Parents recognize that no amount of regulation will prevent accidents," said spokesman Crystal Yost. "The only way to prevent exposure is simply to prevent this industrial activity from occurring near our schools in the first place."

Nearly 150 schools and 170 day care centers in Pennsylvania are within one mile of well sites, according to one study, prompting the group's appeal to DEP.

Among their findings:

- One-fourth of school districts have made curriculum adjustments in response to changing workforce needs, although many report having insufficient information and lack of coordination upon which to base these decisions.
- Despite uncertainty and a perceived lack of information, interviews with educational leaders in Pennsylvania's northern tier suggest that not only have shale gas-related workforce needs created new opportunities for young people exiting secondary school, but that these opportunities have made career and technical center programming more attractive to students.
- While school district respondents in areas with high drilling activity report significant local economic activity, they report that relatively little economic benefit has accrued back to schools. Respondents from some school districts, especially in areas with high drilling activity, are concerned that shale gas-related workforce demands may increase dropout rates.
- Respondents in areas with high drilling activity have reported tightened housing markets, increases in housing rental costs, and increased residential insecurity and homelessness. Respondents report concerns about how this might affect recruitment and retention of staff when district salaries can neither keep pace with rising local costs, nor match gas industry-related salaries.
- School district respondents also report problems with road congestion, damage, and repair issues that affect school bus routes and schedules as well as public safety.
- One of the most pressing questions shale gas development poses for schools is the extent to which gas industry jobs will be ac-

Impact on schools (continued)

accompanied by influxes of new populations. If so, will this result in school enrollment changes and/or increases? Based on survey data, school personnel have reported relatively low impacts on enrollments.

--About half of all school district respondents expressed doubt regarding the longevity of shale gas-related jobs. Respondents also expressed frustration over a relative lack of communication between school districts, career and technical centers, and the gas industry, and disagreement over the appropriate workforce development roles for each entity.

--While many educators see student preparation for post-secondary education as part of their mission, almost three-quarters of respondents believe that most jobs connected to the shale gas industry will not require a four-year college degree. This is consistent with a recent report suggesting that about three-quarters of the industry's direct workforce needs will require relatively little post-secondary education or trade certifications. This led some respondents to express concern about the possible effects on student educational aspirations and the transition to college.

"School district administrators within Pennsylvania's shale gas region, like the communities they serve, need to be aware of and plan for the different phases of gas development," the study's authors concluded. "There is a close interrelationship between community well-being and school well-being. Because of this interrelationship, schools are well placed to be active community partners with other community stakeholders in engaging in discussion and debate about how shale gas development can be strategically managed for long-term and sustainable community development."

"While rapid expansion of economic activity can have many positive effects for schools and communities, Pennsylvania's natural gas is a finite resource. A pressing, and difficult, question is how the shorter term economic boom of shale gas development can be strategically managed so that Pennsylvania schools and communities can maximize their opportunities for long-term social, economic, and environmental sustainability."



This publication is produced by the Natural Gas Resource Center in Coudersport, Pennsylvania. Previous editions are available on the website, pottercountypa.net. Anyone with story ideas or comments should contact Paul Heimel (pheimel@pottercountypa.net).

Turning shale gas into electricity

Plans are in the works for a shale gas-fired electricity generating station in Potter County. Anchor Energy, a subsidiary of Pittsburgh-based IMG Midstream, is seeking an air quality permit from the Pa. Dept. of Environmental Protection for a facility in Hebron Township. IMG develops, owns and operates several small-scale generating stations, including four operating in gas-rich sections of Tioga and Bradford counties.

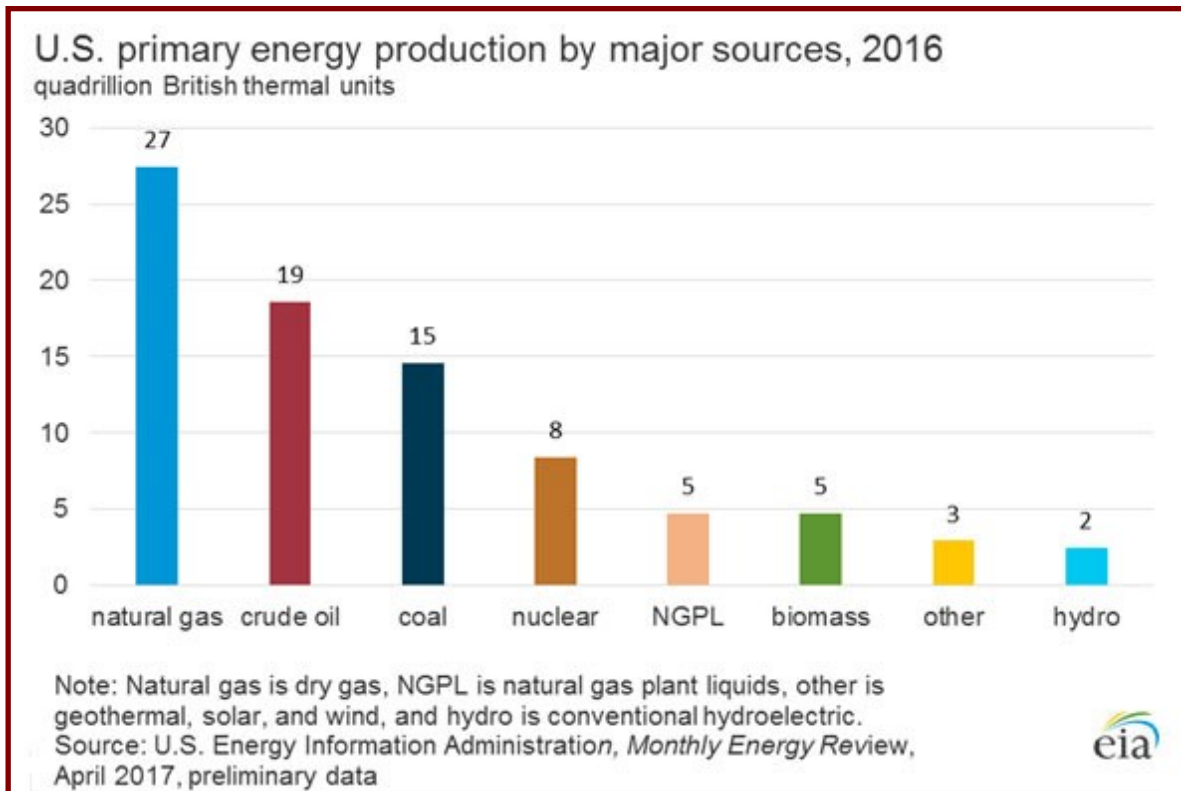
The plant will be about the size of a basketball court and use local gas to generate approximately 20-22 megawatts of electricity, which is enough to power 13,000 homes. IMG spokesperson Kristi Gittins said the company does not expect construction to begin until 2019 at the earliest.

"We haven't selected a specific site yet," she said. "We need about five or six acres and only one acre for the actual building. Once we know more, we'll hold a community meeting to let everyone know the specifics."



This electricity-generation plant is similar to what is being planned for Hebron Township in Potter County by Anchor Energy, tapping into shale gas in the region.

Counties forming gas/oil advocacy organization



Commissioners from many of the counties that are seeing a significant amount of shale gas activity are developing a coalition to promote energy development through statewide and national advocacy activities.

The group has established a working title of “Pennsylvania Council of Energy Producing Counties,” and will be formalizing its operations in the coming months. Commissioners from the counties of Tioga, Bradford, Jefferson, Clearfield, Lycoming, Sullivan, Wyoming, Lawrence and Mercer attended the group’s most recent meeting.

During a roundtable discussion, they agreed that the main focus of the council will be on gas and oil industry issues and opportunities.

McClure Association Consultants has been retained to guide the council’s development. Basic elements of its mission statement were agreed upon, including:

- Promote the energy industry in Pennsylvania.
- Promote an energy plan for Pennsylvania.
- Provide a voice for energy-producing counties and their residents on pre- and post-production matters.
- Provide advocacy services to energy producing counties on matters exclusive to energy production.
- Create a forum to consistently monitor producer actions and marketplace developments.
- Maintain a platform for tracking, monitoring, and mapping of energy production and production facilities.
- Offer meetings for energy-related educational programs and for networking.

Pa. gas production will rise in 2018

Activity in Pennsylvania's gas fields slowed in recent years amid low prices, but operators ramped up drilling in 2017, and they're expecting to drill even more in the new year. New pipelines are driving drilling in Pennsylvania, according to an analyst who monitors the gas industry.

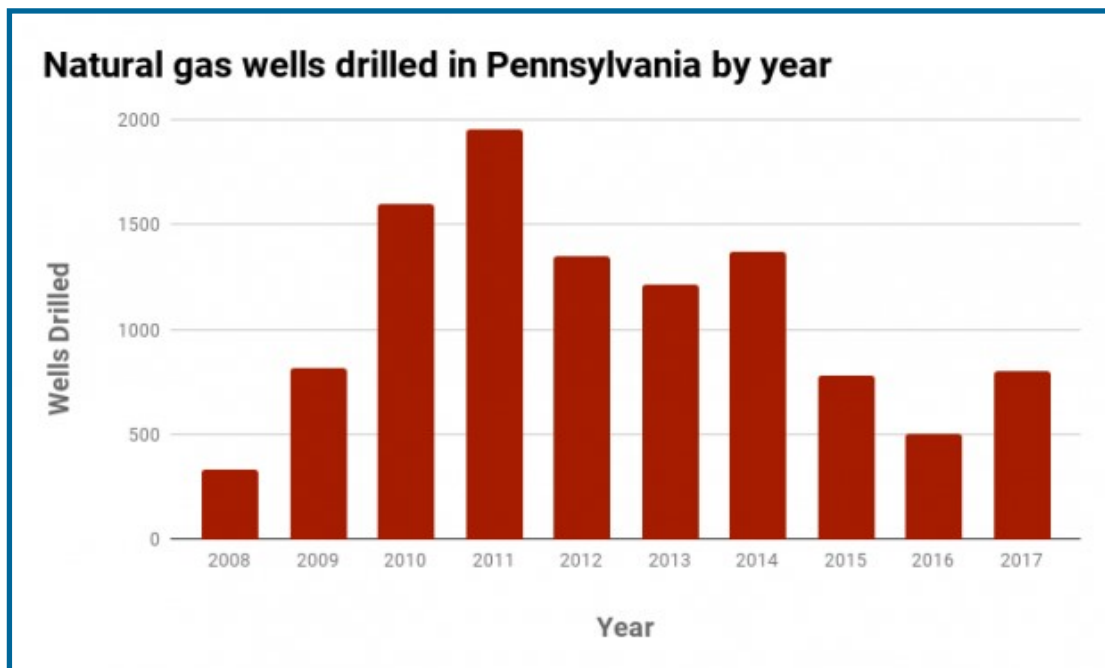
"Over the past couple of months and continuing through the first quarter of 2018, there's a lot of pipeline capacity coming online," said Imre Kugler, associate director of plays and basins for IHS Markit. More pipelines will allow more gas to flow to market. By spring, Kugler anticipates several new lines will send Pennsylvania gas to the Gulf Coast and southeastern United States. He said the gas will mainly be used to generate electricity, though some could be exported overseas.

Drilling ramped up in anticipation of those lines, reaching about 50 new wells per month in 2017, Kugler said. He expects the pace will climb to 80 wells per month in 2018. But gone are the days of 100 rigs drilling statewide, like in 2012 during the boom. Today, there are around 30, according to oil and gas service company Baker Hughes.

That drop does not indicate a major slowdown that the disparity in those numbers might imply, said Dave Spigelmyer, president of the Marcellus Shale Coalition, a trade group for the natural gas industry. "Operators have learned to be far more efficient," he said.

He said producers now concentrate drilling in the regions where they can get the most bang for their buck, which include the southwestern and northeastern parts of the state. Drilling used to occur more frequently in central Pennsylvania, but that's tapered off. Furthermore, the wells in Pennsylvania's highest-producing areas are getting longer, Spigelmyer said.

Pittsburgh-based operator EQT recently drilled one that extends 17,400 feet horizontally, and it announced plans to drill 27 more near this length in 2018. "You're getting the equivalent of three wells inside of one well," Kugler said.



Source: Pa. Dept. of Environmental Protection. Wells drilled refers to "unconventional," or shale gas, wells. The 2017 data reflect the number of wells drilled through mid-December.

Potter County in mid-range of Pa. gas forecast



Dan Brockett addresses NGRC meeting attendees.

Natural gas locked in shale formations two miles or deeper throughout much of Potter County is coveted by energy companies, but early signs suggest it is not the bounty that has been documented both east and southwest of the county.

With that as his foundation, educator Dan Brockett of Penn State University presented a crash course on the topic to about 65 people attending a recent Potter County Natural Gas Resource Center meeting at the Gunzburger Building.

Brockett, an affiliate of Penn State's Shale Energy Education Team, has addressed regulators and policymakers across the U.S. and abroad. With just 40 minutes to share years of accumulated knowledge, he moved quickly between topics. Among the highlights of his presentation:

- Economics, political trends and energy dynamics all point toward increased drilling for shale gas in Potter County. That makes it incumbent upon public officials to focus their efforts on risk reduction in the areas of environmental protection, public safety and community impacts.
- There is an oversupply of gas in the Appalachian Basin, including Potter County. That glut has kept prices low, reducing companies' incentives to drill for more. At the same time, low-priced gas could be an incentive for other industries to consider locating in Potter County.
- While Potter County is already one of the biggest hubs for gas transmission and storage in the East, more pipelines are coming as the companies that have acquired rights and drilled for gas seek to move it to market.
- Industry excitement was focused on Marcellus Shale as recently as five years ago, but companies found that the Marcellus gas in Potter County was marginal – at least while prices remain stagnant. However, companies that have been recently exploring the deeper Utica/Point Pleasant formations are pleased with the early results.
- There have been roughly 110 shale gas wells completed in Potter County since hydrofracturing technology allowed companies to drill them beginning in 2008. While multiple factors make the industry unpredictable, signs point to hundreds – or even thousands - more wells being drilled in the coming years.
- Negative community impacts that have been experienced in areas with intense shale gas development have included deteriorated roads, noise, traffic and business congestion, and water contamination. However, most of the impacts have been temporary. Early trends in Potter County suggest that there will not be a “gas rush,” but more likely a steady and long-lasting pattern of drilling and production as market conditions dictate.
- Potential for water pollution ranks at the top of citizens' concerns, as confirmed by questions raised at Tuesday's meeting. Companies must be held accountable for following the laws. Issues of concern should be shared with state lawmakers and regulatory agencies.
- A host of political issues related to shale gas drilling are unresolved in Harrisburg, ranging from a proposed severance tax and pipeline regulations, to the authority of local governments, setback requirements and royalties/ landowners' rights.