

# Natural Gas TODAY

For Municipal Gas Systems



#### Inside This Issue... Page 2A

- FERC Initiates NGA Section 5 Investigations, continued from page 1.
- EIA Annual Energy Outlook 2019, continued from page 1.
- The Plastic Pipe Rule: A Long Time to Wait

#### Page 3A

- The Plastic Pipe Rule, continued from page 2.
- Pipeline Industry Safety is Up As Incidents Decline
- Snapshots Natural Gas Storage Graph Rig Count Graph Seasonal Temperature Map Price Per MMBtu Graph

#### Page 4A

• Permian, We Have a Gas Problem

Natural Gas TODAY published 2007 by IMGA. No relationship to Gannett Publishing or any other newspaper or publication is expressed or implied.



### **EIA Annual Energy Outlook 2019**

EIA's recently released Annual Energy Outlook 2019 Reference case projects continued growth in U.S. dry natural production and exports through 2050 as domestic natural gas prices remain relatively low and stable.

U.S. dry natural gas production is forecast to grow by 23% from 75 billion cubic feet per day (Bcf/d) in 2017 to 92 Bcf/d in 2020, according to the most recent Short-Term Energy Outlook (STEO). In the AEO2019,

does so at a slower rate than dry production. Natural gas consumption in 2050 is expected to be 96 Bcf/d, up from 74 Bcf/d in 2017.

Natural gas that is produced but not consumed domestically is exported, and the largest growth in exports is from liquefied natural gas (LNG). U.S. LNG exports are projected to increase from an average of 2 Bcf/d in 2017 to 14 Bcf/d by 2030. Much of the increase in LNG exports (8 Bcf/d) occurs between 2017 and 2023 as

#### FERC Initiates NGA Section 5 Investigations

On January 16, 2019, FERC launched investigations and initiated hearings pursuant to Natural Gas Act ("NGA") section 5 into three natural gas pipeline companies in response to their Form No. 501-G filings to explore whether they have been overrecovering their costs of service. Separately, FERC also found that nine other gas companies sufficiently complied with FERC's directives in Order No. 849 and terminated their Form No. 501-G proceedings without taking any further action.

In December 2017, President Donald Trump signed into law the Tax Cuts and Jobs Act, which lowered the federal corporate income tax rate from 35 percent to 21 percent. In response to the federal income tax reduction, as well as its separate finding that certain tax pass-through entities should not be permitted to include an income tax allowance in their cost of service, FERC issued Order No. 849 in July 2018, which required certain pipelines to make the one-time informational Form No. 501-G filing. In doing so, FERC explained that the purpose of the Form No. 501-G procedures is to provide FERC and interested stakeholders with information to determine whether pipelines' rates are no longer just and reasonable.

After pipelines submitted their Form No. 501-G filings in compliance with Order No. 849, FERC initiated NGA section 5 investigations into three natural gas pipelines based on the Form No. 501-G:

• Bear Creek Storage Company, L.L.C. ("Bear Creek")

In Bear Creek's Form No. 501-G filing, Bear Creek estimated a return equity ("ROE") of 16.3 percent after inclusion of the income tax reduction, but argued that no rate reduction was 2050 needed because Bear Creek's Form No. 501-G did not accurately reflect its capital structure and because Bear Creek's two customers - two other interstate pipelines - were subject to rate moratoria and thus could not pass through the reduction in rates until their moratoria ended. In initiating an NGA section 5 investigation into Bear Creek's rates, FERC noted that Bear Creek made no commitment to reduce its rates before the end of its

#### AEO2019 Reference case dry natural gas production and consumption



eia Source: U.S. Energy Information Administration, Annual Energy Outlook 2019

### AEO2019 Reference case natural gas import/export balance billion cubic feet per day





**RETURN SERVICE REQUESTED** 

Source: U.S. Energy Information Administration, Annual Energy Outlook 2019 Note: Pipeline imports from Mexico make up a negligible portion of the U.S. import/export balance, and are not included

the rate of production growth is projected to slow after 2020 but remain positive through 2050, when production reaches 119 Bcf/d.

Dry production growth is expected to outpace U.S. consumption of natural gas. Although consumption is also projected to grow through 2050, it

new LNG export facilities come online.

U.S. natural gas pipeline exports to Mexico and Canada are also expected to increase through 2050. Exports to Mexico will grow from 5 Bcf/d in 2017 to 8 Bcf/d in 2050. Net imports

Continued on page 2.

Continued on page 2.

### Prices. News. Resources. Training. . . . www.imga.org

#### Page 2A / WINTER 2019 / Natural Gas TODAY

#### **FERC's Section 5**

Continued from page 1.

customers' rate moratorium and that initiating an NGA section 5 rate investigation would ensure any reduction in Bear Creek's rates occurs by the end of one of its customers' rate moratorium.

 Northern Natural Gas Company ("Northern")

Northern argued in its Form No. 501-G filing that no rate adjustment was needed because, among other things, it had expended significant amounts of money to modernize its plant and because its customers would benefit from Northern investing its tax savings into ongoing modernization programs. However, FERC stated that while it was necessary to take into consideration Northern's increased costs, it should also take into account Northern's increased revenues. Since FERC calculated \$115 million in additional revenues for Northern's first two reporting quarters in 2018 compared to the same period for 2017, FERC estimated that Northern's ROE in 2018 is 17.3 percent, and therefore Northern may be over-recovering its cost of service.

 Panhandle Eastern Pipeline Company, LP ("Panhandle")

Panhandle contended in its addendum to its Form No. 501-G that no rate change was necessary. Panhandle stated that it was a separate tax paying entity with a total ROE of 14.2 percent. In initiating an NGA section 5 investigation into Panhandles' rates, FERC stated that Panhandle entered into a new firm transportation contract with another pipeline that would significantly increase Panhandle's jurisdictional transmission revenues

and could allow Panhandle to recover revenue substantially in excess of it's cost of service. In addition, FERC noted that Panhandle was wholly owned by a master limited partnership, which raised concerns about whether Panhandle could argue that it should be treated as a tax paying entity.

Further, FERC terminated the Form No. 501-G proceedings for nine other pipelines. FERC stated, in a separate order, that those pipelines either "filed a limited NGA section 4 rate reduction filing, filed a prepackaged settlement, or provided explanations as to why no rate change is necessary ... and no party filed adverse comments with respect to their FERC Form No. 501-G filings." Accordingly, FERC terminated the Form No. 501-G proceedings for these pipelines without taking any further action. 6.00 4.00 2.00 2010 2010 2010 2010 2050. The range of Henry Hub natural gas spot prices in the

#### Annual Energy Outlook 2019

Continued from page 1.

from Canada will decrease as the United States exports more natural gas to Canada while importing less, particularly from western Canada. The net flow of natural gas between the United States and Canada is expected to change to net exports toward the end of the projection period as U.S. export volumes exceed import volumes from Canada.

This growth in production, consumption, and exports comes as U.S. natural gas prices are expected to remain relatively low and stable through 2050. The annual average Henry Hub spot price is expected to remain lower than \$4.00 per million British thermal units (MMBtu) in real 2018 dollars through 2034 in the Reference case, and not to exceed \$5.00/MMBtu by

#### AEO2019 Henry Hub spot prices

dollars per million British thermal units



eia Source: U.S. Energy Information Administration, Annual Energy Outlook 2019

natural gas spot prices in the AEO2019 is defined by the resource and technology side cases, indicating that assumptions about technically recoverable resources and costs drive the projections. The High Oil and Gas Resource and Technology side case projects lower prices that remain lower than \$4.00/MMBtu through the projection period. The Low Oil and Gas Resources and Technology case projects steeper growth, with prices reaching \$4.00/MMBtu by 2023 and exceeding \$8.00/MMBtu by 2050.

The AEO2019 presents long-term projections of energy supply, demand, and prices through 2050. It includes a Reference case that assumes laws and regulations remain in force in their current form throughout the projection period, as well as alternate scenarios that incorporate different assumptions about macroeconomic factors, technology and resource availability, and oil markets.



We are often told, "Good things come to those who wait." While this affirmation applies to many personal struggles, it can be a frustrating reminder when there are sound technical justifications for immediate changes in the workplace.

Progress on the publication of the plastic Pipe Rule from the Pipeline and Hazardous Materials Safety Administration (PHMSA) has required extreme patience. Fortunately, good things do come to those who wait, as the Plastic Pipe Final Rule was published on November 20, 2018 and the contents largely aligned with APGA's comments and expectations. Operators will have until January 22, 2019 to begin complying with the new requirements.

On August 14, 2009, the American Gas Association (AGA) filed a petition with PHMSA to increase the design factor for plastic pipe. Subsequently, on September 9, 2009, AGA filed a petition for PHMSA to make minor amendments to pipeline safety regulations by incorporating the latest edition of the ASTM D2513 standard for polyethylene pipe.

For two years, PHMSA remained silent on these petitions and therefore AGA



considered them denied. Therefore, in 2011, AGA requested an informal hearing to reconsider these petitions. It took another three and a half years before PHMSA issued a Notice of Proposed Rulemaking (NPRM) titled Plastic Pipe Rule on May 15, 2015.

Several stakeholders, including APGA, provided written comments in response to PHMSA's proposals. Those comments were considered, and a path forward was presented by PHMSA to their Gas Pipeline Advisory Committee (GPAC). The GPAC is comprised of 15 individuals: five from government, five from industry and five from the public. This advisory group considers PHMSA's suggested plan for a final rule and provides their guidance.

Continued on page 3.





#### The Plastic Pipe Rule

Continued from page 2.

The GPAC met to discuss the Plastic Pipe Rulemaking in June 2016. Since then, the industry has awaited PHMSA's publication of the Final Plastic Pipe Rule.

Recently, a significant milestone has been achieved. The Office of Information and Regulatory Affairs within the Office of Management and Budget (OMB) analyzes proposed rulemakings on behalf of the President to determine the cost benefit of the rule. This is the final hurdle before a rule is published, and in October 2018, OMB finalized their review.

The three primary areas addressed in the Final Rule are: modifications to the design of plastic pipe, tracking and traceability and plastic pipe construction and operations requirements.

#### The Design of Plastic Pipe

PHMSA (1) increased the design factor for polyethylene pipe from 0.32 to 0.40 for all pipe manufactured after the January 22, 2019; and (2) expanded the approved use of polyamide-11 and allowed the use of polyamide-12.

#### **Tracking & Traceability**

In the proposed rule, PHMSA proposed to require operators to ensure that all plastic pipe and components manufactured after the effective date of the final rule be marked in accordance with ASTM F2897, an industry standard for tracking and traceability. PHMSA also proposed to require those markings to be legible, visible and permanent and maintained for the life of the pipeline. Lastly, PHMSA proposed to require operators to maintain records for tracking and traceability information for the life of the pipeline.

In the Final Rule, PHMSA only included a modified requirement for the required marking of plastic pipe and components manufactured after December 31, 2019 but did not require that operators maintain documentation of those markings. It is anticipated that there will be a separate rulemaking in the future that will address the maintenance of tracking and traceability records. permanent repair method, are PHMSA's effort to align regulations with manufacturer recommendations.

Additionally, PHMSA addressed other petitions for rulemaking, such as the petition from the Gas Piping Technology Committee (GPTC) requesting that PHMSA allow aboveground, encased plastic pipe at the inlet and outlet of regulator and metering stations if certain conditions exist. There are several other nuanced requirements related to construction and operations of plastic pipe within the rulemaking that are too lengthy to cover in this article.

APGA has developed tools to enable operators to begin preparing for the new requirements. APGA will also hold webinars to assist members in understanding the new requirements and what modifications to their current practices may be necessary for compliance.

#### Pipeline Industry Safety is Up As Incidents Decline

### **19% decline in pipeline incidents** over the last five years

The total number of pipeline-related incidents have declined 19 percent over the last five years (2013-2017), according to a new report released by the Association of Oil Pipe Lines (AOPL) and the American Petroleum Institute (API). Based on data collected by the U.S. government, the "2018 Pipeline Safety Excellence Performance Report" shows that approximately 85 incidents impacted people or the environment in 2017, which is 20 fewer than in 2016.

#### 24% decline in pipeline incidents caused by operations or maintenance failures

The "2018 Safety Report" shows that incidents caused by operations or maintenance failures declined 24 percent over the last five years. Such incidents reflect actions by operators during day-to-day activities in operating a pipeline network such as installing and maintaining equipment and operating the pipeline and its valves, pumps and storage equipment. While equipment failure remained consistent from 2013 to 2017, failures related to incorrect operations decreased by 60 percent over that same period.











#### **Construction & Operations Requirements**

The balance of the rule outlined several modifications to the manner in which operators construct and maintain plastic pipelines. Many of these are simply clarifications to otherwise vague requirements already in pipeline safety regulations. Others, such as the requirement to prohibit the ability to use leak clamps as a

#### 35% decline in pipeline incidents caused by corrosion, cracking or weld failures

The AOPL-API report, shows that pipeline incidents caused by corrosion, cracking or weld failures declined 35 percent over the last five years. This key performance indicator shows the impact that integrity management programs are having on pipeline infrastructure. The report shows that incidents caused by corrosion are down approximately 31 percent, whereas incidents caused by the failure of pipe metal or weld seams are down approximately 60 percent.

### Permian, We Have a **Gas Problem**

By Jamie Brick, McKinsey Energy Insights

Permian gas prices will remain weak for the next few years despite nearly 2 Bcf/d of additional pipeline capacity coming online by 2020. This is because the Permian, predominantly a shale oil play, has large quantities of associated gas production.

McKinsey Energy Insights expects Permian crude and NGL production to grow from 3.3 MMbpd in 2017 to 8.8 MMbpd by 2025, which in turn should cause natural gas production to rise from 7.1 to 16 Bcf/d over the same time frame.

The Texas Gulf Coast and, to a lesser extent, Mexico are the most likely destinations for incremental Permian gas volumes. While the fundamentals support additional pipelines (among those, the large quantities of new gas being produced), there is a real risk that the Permian will become overpiped in the medium to long term.

#### **Unconventional Economics**

If pipeline utilization exiting the Permian remains below 80%, in-basin gas prices are expected to be about \$0.10/MMBtu cheaper than on the Texas Gulf Coast, because of the variable cost of transporting the gas. Once pipeline use exceeds 80%, inbasin prices start to decrease as Permian gas competes with other gas for access to this limited pipeline capacity, causing in-basin prices to fall further. The Permian has already crossed that 80% threshold, and prices are starting to show the effects.

This scenario would usually result in operators reducing drilling for gas, but only approximately a quarter of Permian gas production is not associated with oil and is sensitive to inbasin gas prices. If in-basin gas prices fall, the first to be affected will be the <5% of production that comes from new gas wells, which have a breakeven of between ~\$2-3/MMBtu. Next would be the ~25% of Permian production from gas wells that have already been drilled, which break even at about \$0.80-1.00/MMBtu.

The remaining ~75% of gas production is associated with oil, and can even have a negative value, as oil revenue is what drives investment decisions for those wells. Since this associated gas is largely unaffected by in-basin gas prices we can expect to see Permian gas production continue to increase even as the takeaway capacity approaches 100%.

Where will incremental Permian gas production go? There are two primary destinations for incremental Permian gas: Mexico and the Gulf Coast. Once bottlenecks are resolved, new pipelines to Mexico should add an effective export capacity of about ~2.9 Bcf/d, a much-needed outlet until new pipelines to the Gulf Coast come online from 2020.

However, both routes face problems. Building additional pipeline to the west is difficult, especially in California, while western gas demand is uncertain due to high solar generation. Meanwhile, competing volumes from the Marcellus and SCOOP/STACK, as well as higher pipeline development costs for long-distance interstate pipelines, makes building a pipeline to the north less attractive.

Too much of a good thing? In other areas, we have seen anecdotal evidence indicating private equity money competes against itself, causing the required returns to fall. Additionally, Appalachia provides a good example of how excess pipeline can develop in response to wide basis differentials. (McKinsey Energy Insights models indicate there is more pipeline capacity exiting Appalachia than production until after 2026.)

Most of the proposed new pipelines linking the Permian to the Gulf Coast would be regulated as an intrastate pipeline and are generally easier to permit and build compared to interstate, or even northeastern interstate pipelines.

As a result, it is more likely in the long term that excess new pipeline capacity will be built from the Permian to the Gulf Coast rather than too little.

### **2019 IMGA Annual Meeting**

The 2019 IMGA annual meeting is being held March 19, 2019 at the Northfield Inn & Conference Center in Springfield, IL.

Come and talk with other municipal leaders. Share solutions and problems for natural gas within your community.

Listen to knowledgeable speakers on today's natural gas topics. This year's speakers are:

- Jenny Fordham, Senior Vice President, Government Affairs for the ٠ Natural Gas Supply Association
- Jackie Butler, Senior Director, Marketing for Panhandle Eastern Pipeline Company
- Trevor Cooper is part of BP's Natural Gas Marketing & Origination Team

Enjoy a great breakfast buffet and a delicious prime rib and shrimp buffet for lunch.

Registration is required so please provide the following information by phone 217-438-IMGA, fax 217-438-6100 or email brubenacker@imga.org.

Name of attendees Name of City or Village Phone, Fax, Email

IMGA has reserved a block of rooms at a special rate of \$70. If you need a room please contact the hotel directly at 866-577-7900. Their website is www.northfieldinn.com.

Once again this year, the annual meeting will be free of charge, except for hotel costs. We hope that you will join us this March in Springfield.



as expected. This is because a \$10 per Conclusion barrel increase in oil price leads to an increase of about \$1.20 MMBtu in oil-linked LNG (assuming a 12% slope), with no direct impact on Henry Hub-linked U.S. LNG prices.

From 2020 to 2024, we expect about 2 Bcf/d of surplus capacity at U.S. LNG export terminals. If oil prices were to increase due to, for example, a decrease in Venezuelan crude oil production or some other unforeseen shock, then oil-linked LNG contracts would become more expensive. Demand for U.S. LNG would become more price competitive and provide an outlet for additional associated Permian gas.

The Permian is in a unique position. High oil prices lead to additional gas production and put downward prices on in-basin gas prices. The Permian's gas problem can be divided into two phases.

The first phase is from now until about 2020 where there is insufficient pipeline capacity and in-basin prices are low. Despite building nearly 2 Bcf/d of additional pipeline capacity by 2020, additional capacity is needed. This leads to the second phase. Market fundamentals may attract too many pipelines, and the Permian is at risk of becoming over piped.

#### LNG Demand

Assuming there is sufficient pipeline capacity, high oil prices may not depress prices in the Permian as much

## Stay Informed With The IMGA Evening Report

The IMGA Evening Report is an excellent way to stay up to date on NY-MEX prices, weather, gas storage, and industry news. Each issue includes the days closing market prices for natural gas futures and crude oil, as well as a short commentary on market movement and industry related news. The IMGA Evening Report is distributed electronically daily and is

complimentary to all of our members. If you are not an IMGA member, but would like to receive the IMGA Evening Report, please contact Jeanna Martin at jmartin@imga.org or 217-438-4642. The IMGA Evening Report fee for non-members is \$150 per year, or become a member today for a one time fee of \$250.



#### **Interstate Municipal Gas Agency**

Created BY Municipals FOR Municipals 1310 West Jefferson, Auburn, Illinois 62615 217-438-4642 www.imga.org

