

Methane Leak Detection and Abatement Provisions of the PIPES Act of 2020

July 2021

- Natural gas now contributes [more to U.S. climate pollution than coal](#).
- Methane, the primary component of natural gas, has over 80 times the warming power of carbon dioxide over the first 20 years.
- Prior to the PIPES Act of 2020, natural gas pipeline operators, representing the transportation segments of the natural gas supply chain, were able to leak and vent natural gas into the atmosphere as a regular course of business so long as there was no risk of explosion.
- The pipeline segments of the natural gas supply chain (gathering, transmission and storage, and local distribution) are [estimated](#) to emit nearly 5 Million Tons of methane each year (which [translates](#) to an equivalence of about 160 Million tons of CO₂).
- The PIPES Act of 2020, for the first time, requires operators to find and repair leaks even if they pose no risk of explosion, and must minimize intentional releases.
- The regulating agency, PHMSA, is often hamstrung by statutory rulemaking limitations, meaning without pressure, the promulgation of weak rules despite the strong substantive legislation is quite possible.
- PHMSA is also considering bringing more gathering lines under its regulation – the vast majority of gathering lines are not currently regulated and would therefore not be subject to the new rules. Pressure is needed to bring as many miles of gathering lines under federal regulation and therefore required to eliminate leaks and minimize emissions.

Before the PIPES act of 2020, the only reason a natural gas pipeline operator needed to worry about fixing a leak in its system was if it was considered “hazardous” – that is, if the leak might explode and impact public safety or cause property damage. The current regulations do not prohibit an operator from having “non-hazardous” gas pipeline leaks with no plan to repair them, or from intentionally releasing natural gas; indeed, those have long been normal parts of natural gas pipeline operations.

The 2020 Act changes that in several important ways. Although the charge to PHMSA in the Pipeline Safety Act has long included “protecting the environment” along with pipeline safety, the attention to

potential environmental harm has typically been confined to the transport of hazardous liquids. The transport of natural gas, and any methane losses in the process, have not been treated as the major environmental concern that they are. That changes with the 2020 amendments.

The Pipeline Safety Trust has long advocated for better leak detection requirements, with enforceable performance metrics for leak detection systems. We've also made it a priority to establish regulations for gas gathering lines, hundreds of thousands of miles of which remain unmapped and virtually unregulated, with no constraints, and not even any information about their construction, location, size, use, failures – really, their existence. Working with EDF, NRDC, Senator Udall's staff, and committee staff from Senator Cantwell's office, we succeeded in making some major progress to improve how PHMSA regulates gas pipeline methane releases, bringing attention back to the fact that PHMSA has responsibility for environmental protection as well as pipeline safety.

The new mantra is: Leaks – find them, fix them. Section 113 of the Act requires PHMSA to develop standards for operators to use advanced leak detection (ALD) systems to find leaks on their systems and to repair nearly every leak, even the ones previously designated as non-hazardous. The regulations will include performance metrics, repair criteria, and scheduling rules. The use of ALD systems will mean that the leaks can be effectively located and quantified so that methane volumes can become a criterion in scheduling repairs. According to a study from Colorado State University scientists, 16% of distribution system leaks are responsible for more than 50% of the emissions from the systems studied. By locating and quickly repairing those super-emitters, major progress can be made in reducing overall emissions. Importantly, these rules will also apply to at least some gathering lines, continuing the process of bringing that large set of lines under regulation. PHMSA has separately been working on new gathering lines rules, potentially bringing more miles of lines under minimum standards and reporting requirements and therefore the new methane rules as well, for years. The more miles of lines included in the new rules would mean more methane kept in the pipelines and out of the atmosphere.

Section 114 of the Act takes aim at the other major source of methane emissions from pipeline facilities – intentional releases from pressure relief systems – from intentional blow-downs in preparation for repairs, replacement or internal inspections, or from faulty or poorly designed parts of compressor and metering stations, among others. The new statute requires PHMSA to establish regulations controlling these emissions, but critically, the statute requires operators to revise their operational plans this year to minimize methane releases – even before the PHMSA rules are produced. This self-executing aspect of the statute is most important when considering the cost/benefit analysis that PHMSA rules must undergo: if operators are already taking actions to minimize emissions, the costs of those actions shouldn't be attributed as costs of subsequently written PHMSA rules.

PHMSA has already begun the process of developing rules under Section 113. It has held at least one public meeting, and has had several smaller meetings with various stakeholders to gather input on developing these rules. Although several pipeline operators have used ALD equipment successfully and cost-effectively, it is a new concept for most other operators and for PHMSA and state regulators.

The Trust held a conference in May, including speakers from ALD providers, from EDF, from operators with ALD experience, and from CSU scientists, in an effort to start educating additional operators and regulators about the systems and how regulations might be fashioned to best use ALD to find and fix leaks.

We intend to remain heavily involved at every opportunity for public participation in the rulemaking process. It is critical that PHMSA get these rules right to quickly get system leaks eliminated and change operational practices to minimize voluntary releases. Because the federal statute is set up to allow state pipeline safety regulators to establish more stringent regulations than PHMSA, there may also be a number of opportunities to work with states eager to meet climate commitments as they choose whether to go beyond the rules PHMSA establishes to reduce both methane leaks and to minimize or eliminate intentional methane releases. We also intend to remain heavily involved at every opportunity for public participation as the gathering lines rules are finalized.

Resources

PHMSA's Methane Rulemaking

[EDF Blog Post](#)

[Materials and Video from PHMSA's Public Meeting](#)

[Pipeline Safety Trust's Virtual Conference](#)

[Sections 113 and 114 of the PIPES Act of 2020](#) (search for "SEC. 113. LEAK DETECTION AND REPAIR." to jump to appropriate section)

PHMSA's Gathering Lines Rulemaking

[PHMSA's Gas Pipeline Advisory Committee Meeting Materials](#)

[Pipeline Safety Trust's Congressional Testimony](#) (go to page 13 for testimony related to gathering lines)

General

[PHMSA's PIPES Act of 2020 Progress Chart](#)