

Comments to U. S. Environmental Protection Agency (EPA)

Regarding Re-proposal of U. S. EPA's New Source Performance Standard
(NSPS) for Methane

Also Known as "OOOOa" Rule

EPA Docket No. EPA-HQ-2017-0757

and

T-54 and T-90 for Technical Reconsideration of OOOOa Rule

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Submitted by

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Executive Summary

Commenter has experience in these issues with 17 years' experience in electric utility sector as a customer of natural gas and with 15 months' experience with interstate natural gas pipeline companies. These comments are offered to improve the 2016 NSPS (also known as OOOOa rule due to the Clean Air Act section) issued by Obama Administration. These comments do not mean to reflect the views of any former employers or current clients. However, the comments are based upon knowledge of upstream, midstream, downstream and industrial users of natural gas. Commenter does not claim to speak for North American Electric Reliability Corporation (NERC) but commenter is a member of the current and 2017 natural gas-electric reliability committee. Commenter is able to provide relevant NERC materials of public information in these comments since methane leaks may well be an indicator of which pipelines and compressors are of more significance to electric power customers.

Nothing in these comments is intended to imply or express any anti-gas and anti-gas infrastructure views. The commenter sees the significance of natural gas for reliability of the electric power and industrial users of natural gas.

Commenter is confused by the status of the Reconsideration of the 2016 OOOOa rulemaking (under AT-54 and AT-90) if also proposing to rescind this rulemaking. Thus, commenter submits these comments in anticipation of the technical reconsideration still pending at EPA. This commenter filed comments in December, 2018 under EPA-HQ-OAR-2017-0483.¹ The reference to T-54 and T-90 indicate commenter's desire that EPA consider these suggestions—most that were expressed in earlier comments submitted in December, 2018.

EPA should re-propose the rule, make separate source category distinctions, and set Best System of Emission Reduction (BSER) where BSER fits each segment as separate source categories as appropriate. Re-proposing does not mean that fugitive methane leaks should not be regulated.

There were imperfections in the final OOOOa rule that merit improvements in a reconsideration or where technical corrections can address fugitive leaks from compressor stations and pipelines. There is no reason to withdraw the entire rule, ignore Environmental Protection Agency (EPA's) regulatory authority, or question the authority to regulate methane without a separate endangerment determination. It is better to make technical improvements allowing more sophisticated sensors or leak detection devices to reduce costs, harmonize other transmission/distribution/gathering/storage/LDC maintenance and address those fugitive methane leaks in a more economical manner. Commenter regrets EPA has proposed to eliminate the entire regulatory program that has been in place for almost three years. Learning from implementation of the "new source" (which now covers *existing sources* commenced after 2015) pipeline regulations addressing all new pipeline or compressor station projects commenced after September 18, 2015 will help the industry make improvements and provide worthy observations for "existing source" regulations sequential to the new source regulations.

EPA failed in the original rulemaking to separate out different oil and gas industry segments and create separate source categories. Best System of Emission Reduction should be applied to different source categories in the oil and gas sector. EPA falsely assumed in 2014-2015 rule that all segments of the oil

¹60 CFR Part OOOO(a) of Clean Air Act Filed on December 17, 2018 – and also filed related to Affordable Clean Energy Rule (ACE) Docket EPA-HQ-OAR-2017-0355 on October 31, 2018.

and gas industry should be regulated for all fugitive methane leaks. While methane is found in oil and gas industry segments, it should not be presumed that all source categories with fugitive leaks are of equal importance in regulating methane as a GHG. Nor are all sources of fugitives of equal importance. There is precedent for this.

The NSPS for the existing electric power (electric utility) sector, known as Affordable Clean Energy Rule (ACE) was recently finalized. The rule calls upon electric generation units to reduce CO₂ through heat rate improvements suitable for that individual generating unit based upon age (vintage) and type of unit at the coal-fired power plant. The ACE rule presumes that not all units can meet the same heat rate improvements. Further, the ACE rule allows the existing source utility units to consider remaining useful life of the plant in making its heat rate determinations. In that rule, CO₂ was not restricted under a NSPS or Best System of Emissions Reduction (BSER) for natural gas-fired power plants even though gas-fired power plants emit CO₂. Similarly, EPA has some leeway in regulating fugitive methane as a GHG to regulate with common sense approach to larger sources of fugitive methane. The other example where EPA opted to use its own authority to not regulate all sources of methane is that the original OOOOa proposed rule and final rule opted to not regulate incomplete combustion of methane by natural gas users in the oil and gas sector. This is not a criticism of the OOOOa. This was a practical decision. The NSPS for new and modified units under Section 111 (b) for power plants did not address other GHGs. Similarly, the OOOOa rule did not attempt to address CO₂. These decisions were practical decisions about what to focus on during these rounds of NSPS. In that same manner EPA can make decisions about which pollutants to focus on as GHG is this first round of NSPS for new and modified sources in the oil and gas sector.

Further regulating new low-volume production with fugitive methane (from associated gas in oil wells) does not make a lot of economic sense since they have so many locations for small volumes of fugitive emissions. Also, upstream production wells often sell and re-sells numerous times in the first five years of production making the management of leak detection and repair, as mandated in the 2016 rule very complicated and financially burdensome. It would surprise most not in the oil and gas industry how many times in five years new production wells can be sold to other parties. Much of this is because of the logistics of having production equipment located in a region to reduce costs.

It should be obvious to anyone with nominal interest in natural gas that natural gas prices have been extremely low over the last five years and these lower prices make it harder for low volume production companies to make any profit. Many existing shale production wells have shut in or been named in bankruptcies over the last five years. This is especially the case in non-Permian (west Texas). The EPA should consider that this rule may have unintended consequences to the low-volume producers. Thus, rescinding that section of the rule or setting a separate source category may be best in this first round of NSPS.

This commenter believes that best technical or surgical changes may be made to the NSPS for new sources, as required in the OOOOa rule, to address the largest source of methane emissions from the transmission, distribution, storage and gathering parts of the oil and gas sector. The commenter offers recommendations for making separate Best Management Practices or BSER based upon EACH source category. Under the Clean Air Act, the NSPS process is an iterative review and must be reviewed every eight years.

EPA may determine at that time, eight years from now, that upstream low-volume production or other sources of methane should be addressed. However, in the interim, fugitive emissions from low production oil wells where associated gas (essentially a waste gas providing little or no current profit) should be tabled and not retained in a 2019-2020 EPA methane leak detection and repair rulemaking. EPA should instead address fugitive methane by addressing, over time, LDCs. Addressing fugitive methane at LDCs also will improve public safety. Gathering lines with pipelines >11-inch diameter should be covered along with gas storage facilities.

Although the Administration did not ask for comments to address National Environmental Protection Act (NEPA), this commenter believes that retaining but correcting the OOOOa rulemaking will allow permit applicants before Federal Energy Regulatory Commission (FERC) and other agencies to demonstrate that methane, a GHG, will be addressed. Failing to regulate methane for “new and modified” (now existing) sources will just risk more claims that gas pipeline and compressor station construction applications have no requirements to address climate change under NEPA.

Retaining a technical corrected OOOOa rule may help new and modified pipelines and compressor stations obtain approvals submitted to regulatory agencies because OOOOa shows that GHGs have been considered under National Environmental Protection Act (NEPA) and that fugitive methane emissions will be regulated by most of the sources.

Commenter encourages EPA to seriously review the comments received by industrial users of natural gas, electric sector users of natural gas and state pipeline safety officials who might file comments on the proposed residency of the 2016 rule to see impacts not originally considered in the 2015 rulemaking preparation. Further, commenter suggests that EPA convene a one- or two-day panel discussion with different oil/gas and gas users on ways to make technical corrections to the “new and modified” rule and in anticipation of the “existing source rule”. The relationship between gas gathering lines, gas storage, gas transmission, Local Distribution Utilities (LDCs) and electric users or industrial users is far more intertwined than EPA has recognized. Those energy relationships are critical and should affect how methane leak and repairs are sequenced.

Section 1: Key Surgical Recommendations for a Revised OOOOa Rule Under AT-54 and AT-90

Commenter provided recommendations in October, 2018 during EPA’s call for comments. These recommendations augment those earlier comments.

- 1) EPA does not need to make separate endangerment determinations for each greenhouse pollutant and for each industry sector or segment. There is no precedent for this under criteria pollutants regulated since 1977. EPA asserts that EPA will “rescind the standards applicable to the sources in the transmission and storage segment of the oil and gas industry”. This is an arbitrary and capricious decision since methane gas is believed to be 25 times more powerful than CO₂². Thus, it would be wise to take rational steps to address methane as a GHG from the

² Based upon U. S. EPA and United Nation’s IPCC determination. Some non-governmental organizations assert that methane is 84, 86 or 92 times more powerful than CO₂. This commenter believes that the appropriate assumption is 25 times more powerful than CO₂ consistent with the IPCC Report.

natural gas transmission and storage segments of the oil and gas sector. Instead, the Agency is inviting intense litigation, confusion, and wasted 2016-2019 midstream investments made in implementing the 2016 rule when, under future Administrations the EPA will be instructed to take quick action when the rule is re-proposed. EPA calls for comments in Section VI. B of the Preamble to address this question. The commenter does not believe it is realistic for EPA to have to make separate endangerment determinations for secondary effects since GHGs have secondary effects on public environment through water intrusion, loss of wetlands, etc. The commenter thought it was unwise for EPA to make a public health endangerment determination on CO₂. CO₂ is not a human health pollutant in the same way that ozone, PM 2.5, SO₂, lead criteria pollutants are. However, by suggesting that human health determination was wrong does not mean to imply that methane should not be regulated as a GHG. Pollutants can be regulated for secondary public welfare effects.

- 2) EPA's 2016 was not a redundant rule reflecting a duplicative rule as a GHG pollutant on top of VOC regulations under Title I. Other industries have had both Title I regulations under Section 111 and also been regulated under Section 112.
- 3) Reasonable accommodations should be made by EPA or states {under 112(d) for existing sources} to accommodate new and small or low volume upstream oil/gas production³ operations where it is not always immediately known whether further investments should be made based upon early production numbers. Early oil/gas shale production can be very fickle shooting out like a rocket in early days or weeks but showing a decline rate that is not common in conventional oil or gas. This often makes new wells an uncertainty for low-volume producers. They need a wait and see period to determine if the product can be produced at a profit when gas prices are <\$5.00 MMBtu. In fact, most shale gas (and associated gas from oil production) prices in west Texas have necessitated the producers to pay for take away. EPA does need to understand that as a nation we do not want to inadvertently strangle off these new shale gas producers—often gutsy enough to invest where larger companies are reluctant to invest. Or where the small business, often family- owned producers have five- and ten-year leases that could become worthless if the production costs are drive too high by methane leak and repair requirements. This commenter is not an expert on how all accommodations should be made—but perhaps the new low- volume upstream producers should simply be eliminated from this round of NSPS review. It would reduce the bulk of the costs to small businesses. EPA can take up regulation during the next NSPS review cycle in 8 years. And differentiating the small businesses with low-volume production does not eliminate larger producers from the OOOOa rule.

If this eight-year delay is not acceptable to EPA, this commenter would recommend elimination of the specific requirements for detection requirements using FLIR cameras on low production wells and given up to two years to determine if the economics of those wells will merit further investments. **This recommendation does not mean the producers should never be regulated for fugitive methane emissions.** It simply gives them more time to determine the economics of that well. By placing a phase in for the upstream low-volume producers from the NSPS (OOOOa), EPA eliminates the largest costs in NSPS rulemaking while still addressing methane leaks not caught by larger corrosion and leak risks in compressor stations, natural gas storage facilities (salt domes, abandoned oil and gas wells, unused aquifers, etc.), LDCs and interstate natural gas pipelines.

³ As defined by the IRS

- 4) **This commenter believes by adding to the rulemaking coverage of Local (gas) Distribution Utilities (LDCs), the rulemaking will address more methane emissions than in the original 2016 rule and to a broader public good/benefit.** Further the rule will likely reduce methane leaks on new LDC pipelines that are connected to existing pipelines where existing sources with corrosion may be detected and replaced. By replacing LDC pipelines that show significant leaks not currently regulated by state or Federal Pipeline and Hazardous Materials Safety Administration (PHMSA- a division of U. S. Dept. of Transportation), some of the local distribution pipeline systems will be both safer and address methane. This commenter believes that the 2016 rule placed extremely high costs on smaller production (smaller emitters individually) and ignored fugitive leaks on Local Distribution utilities (LDCs). Regulating LDCs with reasonable time for leak detection and repair response will both reduce GHGs but also offer a secondary benefit of looking for pipeline and other LDC gas infrastructure corrosion and leakage. EPA should add LDCs to the group to address fugitive emissions after a substantive LDC information collection request (ICR) to identify where the largest climate and safety benefits would be achieved at lowest costs to LDCs. **Getting the sequencing right on LDCs is critical.** EPA should consider many factors when setting repair deadlines for LDCs since many LDCs are not in remote locations without other utilities, transportation, other buildings, and population centers. EPA, as an agency, has faced similar sequencing issues under water regulations dealing with the Safe Drinking Water Act when drinking water agencies have had to address pipeline repairs and corrosion. This requires the same sober thinking about timing.
- 5) The re-proposed rule should focus on targeting areas identified by a variety of risk and priority factors. Regulated parties should use information available from PHMSA, FERC, NERC, Argonne National Lab (as contractor to DOE), and EIA should be included in the targeting of which fugitive methane leaks make the most sense to address as priorities. EPA may benefit from existing data already used by other agencies or parties. For example, it would make sense for pipeline companies and LDCs serving hospitals, power plants and significant numbers of industrial parties (including data centers) to place those compressor stations and pipelines on the 'fast track' for methane leak and repairs. If they have been recently inspected using advanced ILI or other corrosion detection or subject to satellite imagery use, then this should suffice. These locations are more critical because of the end user and location than some remote locations of pipelines and compressor stations use in upstream, processing, or gathering lines with <11-inch diameter pipelines.

While Figure 1's map (page 8) may not be granular enough, it shows how NERC has identified 18 regions of the U.S. where gas infrastructure may be problematic to the power sector from a reliability perspective. Even if the fugitive emissions are not as serious as at other locations it might make more sense to address these locations at the top of the queue (after pipelines serving hospitals and schools).

For the purpose of making a clear point, the page 8 map below shows NERC's concerns with electric utilities serving Florida based upon several factors including that there is no geological storage of natural gas. (The LNG storage in Jacksonville is for export market not for power plants). Further FL is a state that frequently faces hurricanes, floods, and has karst geology with landslides and sinkholes that might affect both oil and gas pipelines. In other locations on this map NERC has identified cybersecurity concerns—not all locations on this map or in this study

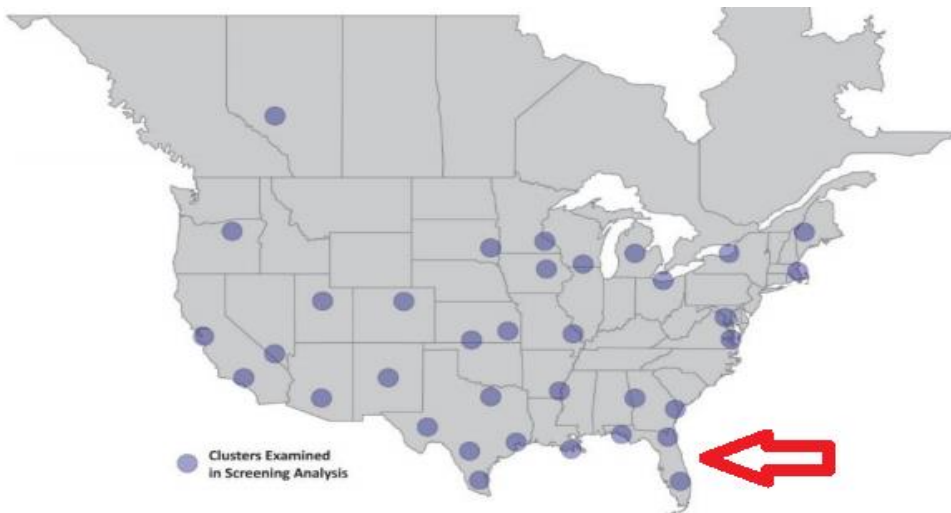
are due to pipelines. But this map is offered to point out that some regions of the country with >60% natural gas or high renewables supported with gas-fired plants may be a more significant location justifying methane leak detection in compressor stations and power plants. So for LDCs and interstate pipelines in Florida, it makes common sense to start with pipelines/compressor stations, storage (none) and gathering lines (none) in Florida that serve critical hospitals, power plants, military bases, data centers, ^s⁴, water pumping stations (although usually electric) and move down the chain from there unless that owner/operator believes there is a methane leak of such significance that it should move to the front of the queue. Unfortunately, the 2016 OOOOa rule never gave gas pipeline companies the option to sequence their leak detection and repairs. EPA viewed all leaks as equal.

It makes no sense to treat all fugitive emissions treated equally. For example, it may not be necessary to have LDCs and gas transmission companies as focused on small “wisp” leaks on pipelines than on larger leaks and corrosion identified by drone technology, satellite and sensors or monitors that show increases in methane emissions from compressor stations. Most studies indicate the fugitives are mostly coming from compressor stations not pipelines. All leaks are not equal and regulations that are based upon that presumption create wasted investments and wasted time while more significant leaks go unaddressed. While many of those leaks may never pose a threat for explosion, they should be addressed- in sequenced order based upon many factors including location, age of infrastructure, most recent ILL inspection, other corrosion detection methods, and who the gas customers are in gas or electric curtailment queue.

- 6) EPA should work with PHMSA and state agencies to determine the best methods for addressing LDC fugitive leaks that give best societal benefits to protect the public from fugitive methane emissions. The decisions should also address corrosion detection/repairs to prevent a larger pipeline or compressor station rupture/force majeure event. To be clear, this may mean that many LDCs cannot address some locations until they can also coordinate with other essential services in that areas such as local highway and street repairs, state or Federal transportation programs, electric, water and telecom/cable utility maintenance projects. This is especially important where multiple utilities share a Right of Way (ROW). **EPA should never presume that all parties in different energy sector segments can act at the same pace in addressing fugitive leaks.** The gas customers of LDCs’ sequencing decisions should also be considered in this process with some flexibility. Flexibility is not a gimmicky recommendation to not regulate. It is a genuine recommendation to address practical concerns by learning from “new and modified” LDC systems as cities annex or build new developments served by LDCs. It is a way to learn more about best ways to economically address existing sources of fugitive methane leaks later. This recommendation is not intended for LDCs to be either burdened or to be exempted from regulation.

⁴ In 2019 a commercial airport narrowly averted a gas curtailment and airport shut down when the nearby compressor station was shut down. Fortunately, the curtailment was avoided with less than four hours’ notice. Commenter is not providing the name of airport or location out of respect for security reasons. With PHMSA or DHS’ approval commenter would provide details to EPA staff. In this instance an informal arrangement of businesses to self-curtail or reduce manufacturing demand of gas during shoulder season avoided an airport shutdown with planes scheduled to land.

Figure 1



Source: NERC, Single Point of Disruption Study, 2017.

https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf

Based upon a review of PHMSA and state safety data it is clear that some newer pipelines and compressor stations can leak and it is equally true that some older infrastructure does not automatically corrode and cause massive leaks in year 30 or 60. The analysis must be coordinated between EPA, PHMSA and state safety agencies to determine if there are patterns by products, size, pipeline materials used, appropriate pressure, etc. Further, the LDCs along with the rest of the industry need to be given the option of using far less expensive (but accurate) methane sensors, drone technology, mobile devices, and satellite readings. Not all fugitive methane leaks are equal. The rule should allow companies to address repairs on more significant leaks first—perhaps with an eye to recommendations from PHMSA, state regulatory agency, North American Electric Reliability Corporation (NERC) and FERC if there are electric utilities reliant upon that natural gas.

Unfortunately, there is no comparable natural gas reliability entity like NERC, though if one existed, this is precisely a critical purpose for that organization. Thus, to do this right, this means all parties need to know more about the relationship between gas infrastructure and gas users. NERC, while very helpful to identify locations only looks at Bulk Electric System not smaller electric utilities or industrials that use gas for fuel and product.

- 7) EPA is always tasked with evaluation of costs and benefits. Yet oddly in the original proposed rule, final rule and proposal to rescind the rule the EPA failed to look at costs and benefits for the infrastructure served by the oil and gas sector. It is clear that much of the attention in the proposed 2015 and 2019 re-proposal that the EPA has not considered the broader cost to society if there were force majeure events in midstream pipelines/compressor stations that might have been prevented or shortened with reasonably timed methane leak repairs.

It is peculiar that while EPA, under prior Administration, included many benefits to society for regulating methane, that it did not consider the benefits if a methane leak detection prevented or reduced the frequency of gas leaks, force majeure events, power outage or manufacturing disruption due to infrastructure failures. Events in the last 18 months with ruptures and compressor station explosions and closures or reduced capacity are documented in more than 12 locations in at least 10 states⁵. In the case of a compressor station disruption, a PHMSA staff member discussed at a pipeline safety meeting that they were hours away from shutting down a local airport serviced by a compressor station failure after two days in a state not provided. For security reasons, commenter declines to give that location but would be willing to discuss with EPA with DHS or PHMSA's approval.

A recent PHMSA report estimated that an Enbridge natural gas pipeline rupture cost \$9.7 million to its own property and \$1.8 million for the emergency response and \$2.5 million for environmental mitigation, investigation, and other miscellaneous costs. That totals to approximately \$19 million in property damage and associated repairs. While EPA and OIRA may not want to count all of these Enbridge pipeline rupture costs they should count some leak averted or prevented benefits and the costs to society for not running early leak detection procedures.

Columbia Gas's September 2018 pipeline rupture in the three small Massachusetts towns outside Boston is expected to cost \$1 billion dollars according to many trade press articles⁶. Perhaps that is mostly older infrastructure which might have been more prone to leaks than much younger compressor stations and pipelines⁷. But in this case the company failed to correctly address its own safety requirements when repressuring the pipeline under repair. A methane leak and repair regulations might not prevent events like the fall 2018 accident or its many compliance issues. But a nationally mandated methane leak and compliance requirement to address the leak, whether under PHMSA or EPA certainly should improve the industry's standards, compliance obligations and culture.

The safety analysis conducted by NTSB and the Office of the Governor that Columbia Pipeline suggested that the company (and its contractors) had not operated with precise industry standards and did not require a certified professional engineer (PE) to determine how to re-open lines with pressure detection. The total costs cited here are confidential but based upon WBUR and other Massachusetts news agencies⁸. Again, the EPA's action is not a pipeline safety regulation but PHMSA and EPA should consider "cross-benefits" as well as costs when regulating CO₂ and methane since both are GHGs. In the case of both Aliso Canyon (2015-2016) leak and the different leak in Lawrence and nearby suburbs, these infrastructure failures also affected homes and local businesses. When EPA determined the costs of the OOOOa rulemaking it did not consider in the RIA the secondary affects due to loss of natural gas or electricity (from gas-fired power plants) and those economic impacts to customers.

⁵ Gas pipeline or compressor station failures in OR, ID, WA, MI, TN, KN, TX, CA, and MA.

⁶ Oil and Gas Journal, Pipeline and Gas Journal, etc.

⁷ California's Southern California Gas Utility's ruptured only ten months after its new construction and was out of service for two years until October 2019. When the pipeline returned to service the capacity was reduced by approximately 10%.

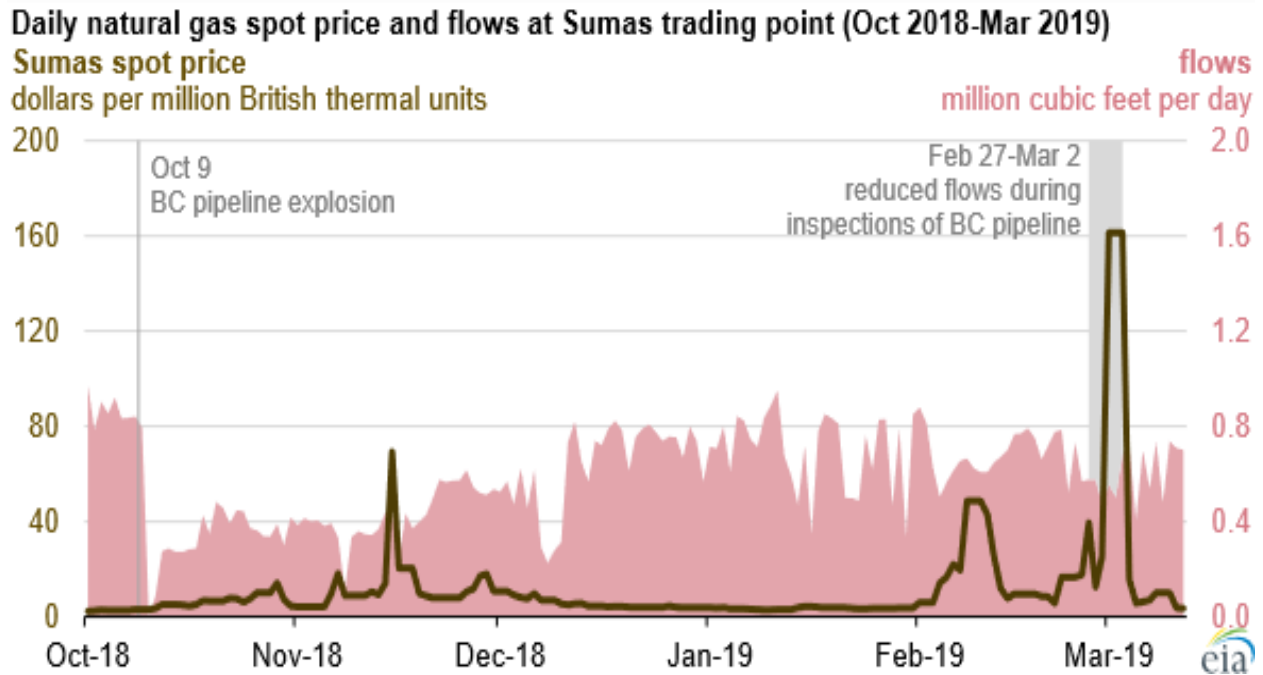
⁸ <https://www.bostonherald.com/2019/05/01/nisource-ups-cost-estimates-for-merrimack-valley-gas-disaster/>

While this commenter is not an economist, it is appropriate for EPA to review the economic analysis of costs to consider the purchasers of natural gas following pipeline failures when identification of benefits in the rulemaking.

Enbridge's (October 2018) gas pipeline rupture (and related compressor station and secondary pipeline safety inspection) in western Canada rendered the gas pipeline inoperable for approximately six days. The Sumas trading center saw spikes for at least four months following National Energy Board's decision to reduce the pipeline or compressor station capacity by 20%. See Figure 2 on page 12. These are indirect costs to the industrial or electric utility sector when gas is curtailed or where firm contracts cannot be met at 100% and parties must buy off the market off and on for many months. While these are not "climate costs" they are costs to industry and should be considered when EPA and PHMSA conduct cost-benefit analysis and address impacts in the Regulatory Impact Analysis (RIA). **These costs and impacts have not been considered by PHMSA or EPA when weighing the costs and benefits for regulation.** If EPA would regulate with a reasonable approach to LDCs and pipeline/compressor stations on interstate systems the regulation could BOTH address GHGs and identify more significant methane leaks needing response. The commenter is not saying that the 2018 Enbridge and Columbia Gas accidents would have not happened with a re-written OOOOa rulemaking. However, it is likely that *an improved OOOOa regulation* would help the company better focus on methane leaks and prevent the catastrophic failure.

Conducting a more focused rulemaking on the gas transmission/storage, gathering, and LDC sectors may indicate that the sector would benefit from a combined rulemaking looking at both pipeline safety and greenhouse pollutants. An improved rule should focus on how to reduce costs on identification of methane through sensors, satellite imagery, less expensive camera technology used than FLIR cameras requiring expensive cameras, consultants, contractors or full-time FTEs and training. In the last five years more technologies have entered market that can help the parties identify fugitive methane emissions without the same extreme costs associated with LDAR. There also appear to be legitimate breakthroughs in methane tagging sensors to differentiate between agricultural methane, landfill methane, wetland methane and natural gas in oil/gas infrastructure. EPA and PHMSA should work on the optimal technology choices together. For example, companies that have well documented and disciplined ILI (a more sophisticated pipeline pigging system) without serious or chronic PHMSA or state safety violations, the ILI system may prove to be more effective than looking for "wisps". The commenter cannot specify all the technology options should be allowed but urges EPA to not think of these leak or corrosion detection devices and systems in the same way they think of cookie cutter pollution controls (scrubbers, bag houses, etc.). To do an effective job in finding methane the EPA must allow the use of technologies and tagging to differentiate the methane coming from LDCs or interstate pipeline facilities from local water treatment plants, agricultural sources, Superfund sites, etc. *Technology issues are also addressed in Part II on Best System of Emissions Reduction (BSER) on page 13.*

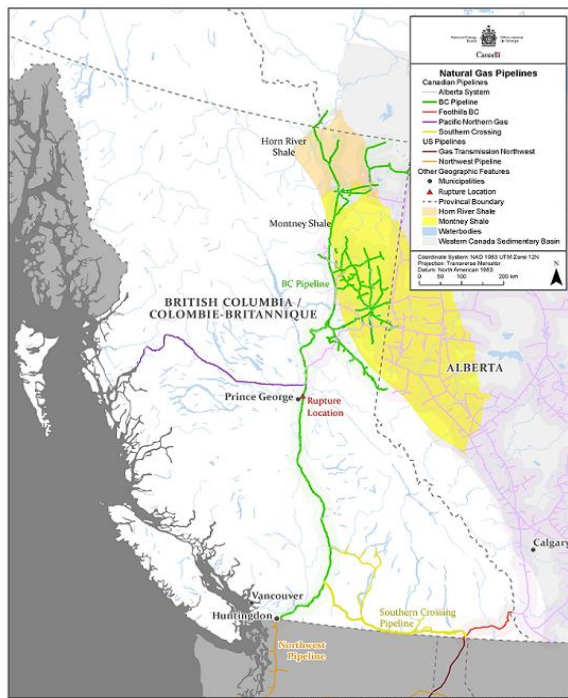
Figure 2 Spot Price for Natural Gas Users After Enbridge Explosion, 2018-2019



Source: U.S. EIA, based on Natural Gas Intelligence (prices) and Genscape NatGas RT (flows)

Figure 3 Enbridge Pipeline Rupture 2018

Figure 1: Map of pipelines and points related to the rupture



Source: National Energy Board, Canada⁹

⁹ <https://energi.media/british-columbia/neb-impacts-of-enbridges-bc-pipeline-rupture-on-natural-gas-flows/>

- Isn't methane leakage and corrosion a pipeline safety a PHMSA issue?

PHMSA is the primary agency for interstate pipelines and state safety regulatory agencies and state Public Utility Commissions (PUCs) are the primary regulatory agencies for pipeline safety for LDCs. However, PHMSA has been slow to propose and finalize many regulations as required under many recent pipeline safety statutes going back to deadlines established by Congress in 2011. In this case, it is not duplicative regulation to have methane leaks identification and corrective action required by EPA. While this commenter might prefer the regulatory program remain at one agency, it is clear that PHMSA has not acted as it should under many safety statutes or in implementation of many separate regulatory actions to enhance safety including almost thirty years of safety recommendations¹⁰ by National Transportation Safety Board (NTSB). Discussions at the October, 2018 Santa Fe National Association of Pipeline Safety Representatives¹¹ were clear that most state safety agencies implement safety requirements that heavily rely upon companies to implement PHMSA requirements. Many state officials commented they had inadequate staff, poor budgets, inadequate time or staff for inspections, and must often rely upon private and publicly owned gas companies and LDCs as safety experts. EPA cannot change that situation but they should be aware of it.

Thus, reliance upon EPA to address methane leaks under the Clean Air Act is a worthy second choice to pipeline safety agencies that are not adequately addressing methane leaks and pipeline safety in several segments of the natural gas industry.

Commenter believes this is precisely why it would be best if PHMSA and EPA would work together to correct the OOOOa rulemaking to enhance safety and address GHGs as a climate change issue in a sensible manner given other regulatory obligations to address pipeline safety.

Section II Re-thinking Best System of Emission Reduction (BSER) for Each Energy Segment or Source Category.

In 2016 EPA's methane rule forced all midstream parties to treat methane leaks equally. This was poor judgment by EPA. Revising the rule, rather than rescinding it, would provide a great opportunity to force industry to identify the leaks that matter most- first. **As stated before, EPA failed to address Best System of Emission Reduction (BSER) on a segment by segment or source basis.** There is no statutory justification for this decision. EPA should think more creatively about the maximum methane reductions achieved by the various oil and gas segments by allowing for the segments to use the most optimal leak identification technology. Instead EPA picked FLIR camera technology. FLIR camera technology can be effective in some applications. But it makes no sense to assume that all oil and gas segments would use this camera technology with same effectiveness and at the same cost. EPA was sloppy by not looking at a wider variety of methane leak or sensor technologies. The commenter urges EPA to think more creatively at methane technologies and not make decisions that limit the methane detection systems to

¹⁰ Many of these recommendations were addressed in the NTSB report following the Merrimack Valley accident where NTSB questioned why Columbia Gas did not use a Professional Engineer (PE) to design and oversee the Merrimack Valley repair and why Excess Flow Valves and other measures were not required. Similarly, Aliso Canyon's root cause analysis conducted by California agencies point to many sensors and monitors that could have shut down the leak within hours of the leak commencement. NTSB's Report on Columbia/NiSource's Merrimack Valley explosion https://www.nts.gov/investigations/AccidentReports/_layouts/nts.gov/recsearch/Recommendation.aspx?Rec=P-18-007 and <https://www.nts.gov/investigations/AccidentReports/Reports/PSR1802.pdf>

Aliso Canyon's root cause analysis <https://www.cpuc.ca.gov/aliso/>

¹¹ <http://www.napsr.org/home.html>

be selected each 8-year NSPS cycle. The widest application should be allowed for users to encourage more technologies to be developed by the market.

Further, the commenter believes that Best “System” should mean that compressor station and pipeline owner/operators (whether owned by private corporations, investor organizations, electric utilities or natural gas LDCs) should create their own “system” for prioritizing which compressor stations, gas storage, or gas pipelines based upon risk. This means risks of pipeline rupture, risks to a force majeure event with a compressor station failure or risks to loss of natural gas/power to hospitals, power plants and critical manufacturing sector customers where inadequate notice could cause the manufacturing equipment to freeze or “seize” with the need to make capital expenditures to replace that manufacturing equipment. Examples of where the manufacturing can freeze up with inadequate notice of loss of electricity or natural gas directly to that factory are glass manufacturing, steel production, and chemical production.

The best way to focus on fugitive methane leaks that matter that most and for companies to use risk analysis to set priorities.

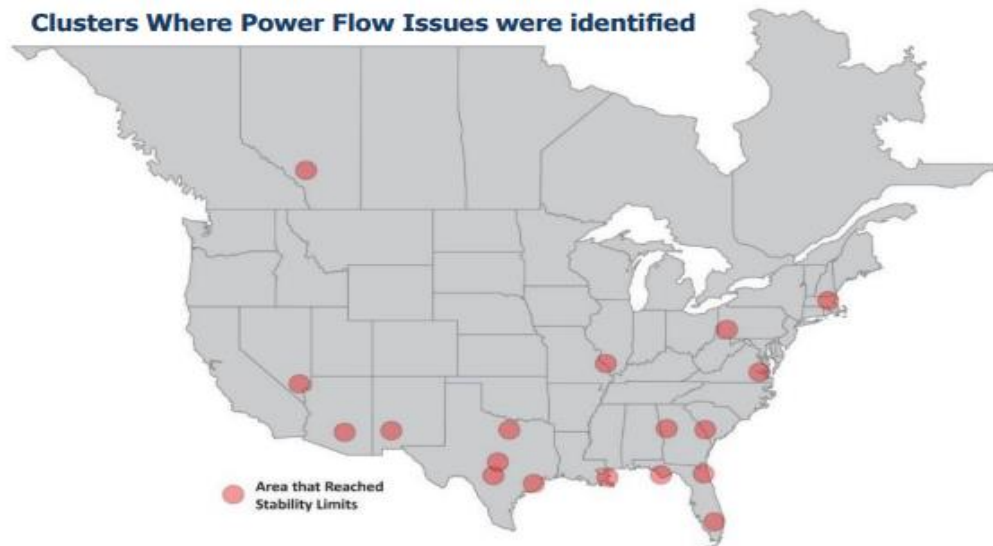
How would regulated entities do a risk analysis?

- Evaluation of compressor stations, pipelines and storage based upon ILLI inspection records, corrosion identification and the proximity to serving power plants or hospitals with no redundancies in equipment at 100% of capacity within 4 hours. This part of the revised OOOOa rulemaking would need EPA to work with PHMSA and NERC. But an excellent starting place for the first year in OOOOa for “new” sources would be new pipelines and compressor stations built in proximity to the locations identified by NERC in this 2017 Figure 1 map (and as updated by NERC).
- Companies owning compressor stations and pipelines should review GADS data over prior two years to evaluate potential vulnerabilities and also cross reference with how many gas-fired power plants have no secondary fuel (oil or biomass) on site. Most of the nation’s power plants do not have secondary fuel on site even if they once obtained a dual fuel permit. These plants either opted to not maintain the dual fuel operations, did not maintain regulatory compliance with Resource Conservation and Recovery Act regulations on spill prevention, or took most of the footprint for the oil storage to place a bag-house for mercury controls. Either way, very few power plants outside of Massachusetts and other New England states have dual fuel capability. And virtually no power plants have dual fuel (oil) for use during summer months since a secondary oil supply cannot be used for more than a few hours during ozone season under Clean Air Act between May and September. These are the factors that midstream and LDC companies and electric utilities that own pipelines should factor in when designing the “triage” effect for addressing methane leaks that have the most significance. This does not mean that EPA should not require methane leak and repairs for other locations but these areas are more important since repairing the methane leaks might also be better actions for public safety. The commenter believes that PHMSA and state safety agencies would have additional recommendations if consulted prior to a rulemaking.
- Plan should consider FERC Form 588 submittals as well as those submitted by other parties in that state or region when setting priorities for which compressor stations and which pipelines should have leak repairs. This is similar to how electric generators do not undertake major repairs without consulting other electric utilities in that same region where the plant will be out of operation for more than a few hours. Even during shoulder seasons (April-May and

September) most electric utilities inform other utilities when they will have a generating unit offline during scheduled maintenance.

- Use of PHMSA's incident report database (though this commenter believes this database is not adequate to identify all the events. As Carnegie Mellon points out, the 2015-2016 (four month) Aliso Canyon leak was not always noted in the PHMSA incident database. By contrast, if an electric utility >400MW goes out of service, sheds power (derate) for 30 minutes or longer it must report to its NERC/FERC planning authority. There is no comparable requirement under PHMSA for natural gas infrastructure sector. Thus, simply using PHMSA's incident report for setting priorities is not adequate.
- As more cities¹² foolishly adopt anti-natural gas service ordinances, these "gas deserts" should also be considered by the sequencing for methane leak and repairs. Commenter thinks these city ordinances will actually create more problems with needed gas infrastructure. Policies that create stranded investments, reduce reliability of intermittent renewables and leave abandoned gas pipelines are a terrible idea with only short-term methane or CO₂E reduction benefits.

Figure 4



NERC, Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System, Page 20

https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf

NERC further refines the issue in Table 1.3 with regional breakdown of number of generators with only one connection or where there is only one major supply trunk line from gas industry serving power sector.

¹² Berkeley, CA, San Jose, Oakland, Seattle, San Francisco, boroughs of New York, and Brookline, MA.

Figure 5

Table 1.3: Natural Gas Supply Characteristics by Area			
Region	Number of Generators with One Connection	Generation Capacity with One Connection (MW)	Number of Major Supply "Trunk" Lines Serving Area
Northwest	16	4,963	24
Southern California and Arizona	20	11,430	13
East Texas, Louisiana, and Oklahoma	40	17,965	60
Southeast	68	46,124	35
Florida	38	31,049	7
Middle Atlantic	22	12,244	9
New England	35	13,103	6
Northeast	49	21,903	20

Source: NERC, Single Point of Disruption Study

https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf

Section III Why Should EPA Include Natural Gas Storage, Gathering Pipelines and Storage in a Re-proposed Rule?

- **Natural Gas Storage Facilities**

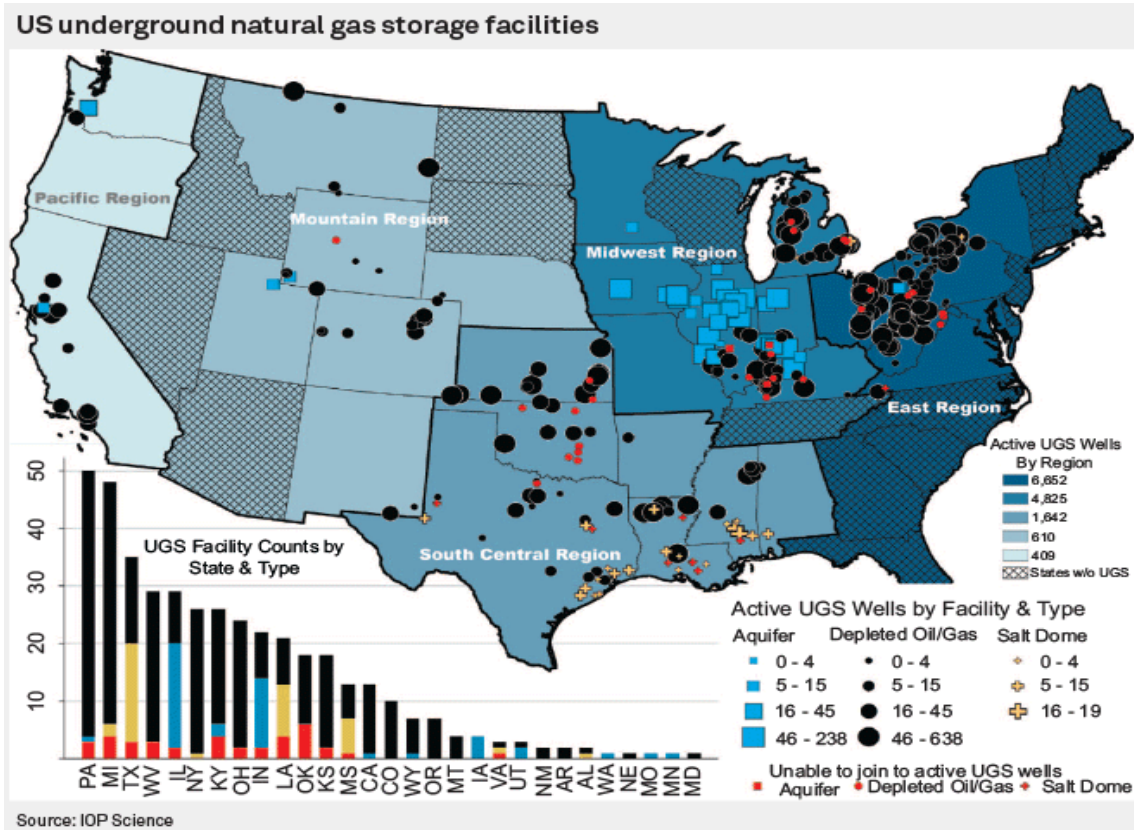
The Harvard Chan School of Public Health published an article in *Environmental Research Letters*, and identified 14,138 active underground gas storage wells, about 12,400 of which were in depleted oil and gas fields. Based on each well's completion date and the storage facilities' histories, the study estimated that 2,715 wells, or 19%, had been repurposed from production to storage. The probable repurposed wells geographically concentrated, with **88% of them in Ohio, Michigan, Pennsylvania, New York and West Virginia**. These states' repurposed wells operated at 160 facilities, which connected to 79% of all active storage wells and 51% of the working gas capacity in the U.S. It does not appear that all storage locations that were once operational as production wells were thoroughly upgraded and have sufficient pressure change detection or leak detection. It would be wise for EPA and Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) to seek more information from this segment of the oil and gas sector in order to determine if a leak detection and repair requirement should be established in a future existing source rulemaking after reviewing (a) the assertions made by Harvard's Chan School of Public Health (b) the status of gas storage updates after the implementation and completion of new regulatory requirements from Interim Final Rule, 2016 and Department of Energy's (DOE) "Ensuring Safe and Reliable Underground Natural Gas Storage; Final Report of the Interagency Task Force on Natural Gas Storage"¹³ If the

¹³ DOE's 2016 Report on Natural Gas Storage with

<https://www.energy.gov/sites/prod/files/2016/10/f33/Ensuring%20Safe%20and%20Reliable%20Underground%20Natural%20Gas%20Storage%20-%20Final%20Report.pdf>

Chan School study is incorrect then PHMSA and DOE should say so and indicate to EPA that perhaps this segment should not be included. From a practical point of view, it is not likely many new gas storage locations will be built due to natural gas market issue and covered by the “new and modified” rule. However, it is still useful for EPA, DOE and PHMSA to consult on the questions about whether natural gas storage locations are critical when identification of fugitive methane leaks. Gas storage is one of the least visible and known segments of the oil and gas sector when looking at safety and fugitive emissions.

Figure 6



Source: SNL Energy,

<https://www.snl.com/web/client?auth=inherit#news/article?id=40801861&KeyProductLinkType=4&cdid=A-40801861-11319>

➤ **Gathering Lines**

Gathering lines from production do not suffer from the same “whither on the line” as low production oil and gas wells. Gathering lines exist because the owner/operators have determined that the economics of production merit the building of gathering lines. Commenter believes that separate source category determinations should be made for gathering lines should be detected for leaks because so many 11 inch to 24 inch gathering lines function as high pressure transmission lines. Commenter defers to the gathering line industry and EPA to determine what Best System of Emission Reduction (BSER) should be and the frequency of leak detection. However, commenter does not believe that EPA should limit BSER to Forward Infrared Detection Cameras (FLIR). FLIR cameras are expensive to operate, require training,

and manpower to be deployed. Since the 2014-2016 time when U. S. EPA worked on the proposed OOOOa rulemaking we have learned that there are far more economical ways to use sensors, drones, satellite technology on a more continuous basis than once or twice yearly FLIR use. Repairs should may be made during shoulder season or when other repairs and maintenance are conducted. This commenter is not recommending a specific number of months or years for gathering lines, transmission lines, LDCs but believes that this is what would be appropriate to separate in a re-proposed rule.

➤ **Local Distribution Companies or Local Distribution Gas Utilities (LDCs)**

Commenter respectfully believes that it was not wise to exclude LDCs from EPA’s methane NSPS. However including LDCs in methane leak detection will require a much longer time to address older infrastructure and correct the detected leaks due to wintertime heating demands in communities and the repair impacts to local transportation (tearing up local streets), it is clear that older compressor station and pipeline equipment has been associated with some pipeline failures within the last 18 months. EPA and PHMSA would be wise to look at “lessons learned” from the 2018-2019 pipeline over pressurization rupture (Merrimack) and older infrastructure replacement (National Grid) in Massachusetts before arbitrarily selecting a three-month or six-month correction of the methane. The companies had to coordinate actions to avoid larger safety problems and electric reliability problems. Perhaps there are some lessons to be learned from Aliso Canyon’s five-month leak in 2015-2016 (and several short subsequent leaks as recent as 2019 following the fire).

In 2014, EPA acknowledged that it should conduct corrective actions with PHMSA following the EPA Office of Inspector General (OIG) report to address methane leaks at LDCs¹⁴. While EPA issued many white papers (one of the recommendations) on methane for the EPA EnergySTAR program, no meaningful coordination with PHMSA was undertaken to address smaller leaks and enhanced (but affordable) leak detection and repair techniques. While LDCs are mostly regulated by state pipeline safety regulatory agencies many of the regulatory mandates and technical information ultimately comes from PHMSA.

The commenter has no illusions that mandating non-PHMSA methane leak detection and repair actions at LDCs will be inexpensive. But failing to address methane from LDCs eliminates a significant percentage of the fugitive methane in the atmosphere. EPA can work with private LDCs and publicly-owned gas utilities regarding how actions can be undertaken to address parts of the industry (whether by location, coordination and timing of other PHMSA or state regulations or age of infrastructure) to help reduce regulatory burden which will obviously increase the cost of natural gas to the ultimate customer—whether power plants, industrial users or residential users. Further, when the gas LDCs are owned by municipal government, EPA should consider the impacts of financing infrastructure changes from other EPA regulations such as lead and copper (“Lead Service Line Replacement”) rule (expected in 2020) or perhaps other regulatory mandates on city/county governments for capital expenditures and bonds to be raised for infrastructure costs due to PFAS/PFOS regulations where there is a significant cost to the local government water agency. As stated several times, this requires addressing LDCs’ sequencing concerns that must be considered for “new and modified” re-proposed rule. More importantly, the sequencing issues need to be worked out in the “new and modified” OOOOa preproposal before addressing LDCs in a future existing source regulation.

¹⁴ https://www.epa.gov/sites/production/files/2015-09/documents/20140725-14-p-0324_0.pdf

Section IV. Rethinking Costs and Benefits

EPA and other agencies have a long history of identification of costs and benefits as required in rulemaking process. EPA's RIA's costs and benefits were identified. However, EPA failed to address the benefits to society to avert significant fugitive methane leaks. EPA also failed to identify benefits from a prevented leak that might pose a reliability risk for natural gas to electric utility or industrial users.

DOE's Lawrence Berkeley National Lab and Argonne have conducted economic analysis for loss of electricity due to storms and infrastructure failure. However, these models have not been used (excluding storms) by EPA or PHMSA to address the indirect benefits to methane leak and repairs to society that relies upon the natural gas (or electricity). If these DOE funded models are used it would be much clearer that OOOOa's application to midstream gas transmission and LDC segments would be cost justifiable.

All too often policy makers assume that PHMSA is capturing all the force majeure events or disruptions and that PHMSA's data is reflective of the entire energy sector- between and connecting the segments from gas transport, storage and to gas-fired power plants and to industrial gas users. It was not done by EPA nor at PHMSA. PHMSA does not capture all compressor station and pipeline outages in its website—only those which are in its jurisdiction based upon injuries and economic costs. Research by Carnegie Mellon¹⁵ demonstrates that many gas pipeline failures and outages are not recorded and are not public information. In some states the information is available under Freedom of Information Act (FOIA) actions.

Their models provide detailed options for both EPA and PHMSA to identify potential societal costs due to the loss of electricity due to natural gas disruptions from 1 minute to days, weeks or months. Commenter encourages EPA and PHMSA to think more expansively about loss of power generation due to natural gas leaks and explosions and when after the repair is completed the safety agency (PHMSA, NTSB, state agencies or Canada's National Energy Board) require a reduction in natural gas capacity in the compressor station or pipeline. Commenter believes that looking only at NERC's scope is too small. Electric and gas reliability have serious consequences at sub-Bulk Electric levels as seen with recent gas curtailments (and forest fires in California) affecting smaller electric utilities and industrial users.

..."A 2012 U.S. congressional report summarized results from other studies and, based upon this literature review, estimated that **storm-related interruptions in the U.S. cost between \$20 billion and \$55 billion annually**". (LBNL)

"A 2013 White House report prepared by the President's Council of Economic Advisors and the United States Dept. of Energy also focuses on severe weather. **The White House report states that power interruptions due to severe weather between 2003-2012 cost the U.S. economy an average of \$18 billion to \$33 billion annually.**" (LBNL)

Source: Cost of Power Interruptions 2018-2019, page 8; Lawrence Berkeley National Lab.
<https://emp.lbl.gov/projects/economic-value-reliability-consumers>

¹⁵Not limited to but including these two articles from Jay Apt and his graduate students
<https://www.cmu.edu/ceic/assets/docs/publications/working-papers/ceic-19-03-what-causes-natural-gas-fuel-shortages-at-u.s.-power-plants.pdf> and
<https://www.cmu.edu/ceic/assets/docs/publications/working-papers/ceic-18-01-natural-gas-pipeline-reporting.pdf>

Section V. Why Making Source Category Differentiation in Oil/Gas Segments Makes Sense with Cost-Benefit Analysis and Targeting the Fugitive Emissions of Most Consequence

When EPA (and PHMSA) place the sequencing for methane leak detection and repair actions, the regulating agency and regulated parties' actions should be influenced by both NERC and the data provided in the 2018-2019 series of Carnegie Mellon studies that identified compressor station or pipeline failures that did not trigger the reporting threshold at PHMSA. Carnegie Mellon's team of researchers used the Generating Availability Data System (GADS) for events. **There is no equivalent database to what NERC and FERC operate on the natural gas transmission system.** As more power plants move to gas (or gas backing up >50% intermittent renewables), it is critical that there is a central pipeline outage database crossing governmental agencies (even if parts are considered confidential for national safety reasons). The commenter realizes that this is not relevant to the EPA proposal to rescind the OOOOa rule but points this out as an informational need to help EPA address the methane leaks that matter the most.

The commenter hopes that one will be available for EPA to establish priorities for regulatory actions similar to the way the Clean Air Act establishes NAAQS classification for Standard Metropolitan Statistical Areas (SMSAs) when placing regulatory requirements. While Section 110 is different from Section 111 and OOOOa, the example is offered to remind reader that the EPA has made differentiations in pollution controls in other parts of the CAA by classification of the problem. In the case of fugitive methane emissions, EPA can work with PHMSA, review EIA's Form 588 (for emergency actions), and review GADS data to help identify which methane leaks have a greater safety consequence and impact on the electric power sector as a way to enhance benefits in the revised regulation. Similarly, if PHMSA and EPA can determine that some leak sizes can be considered de minimis—EPA's revised regulation should ignore those fugitive emissions in this NSPS cycle and seek to review in 8 years.

This commenter is not an economist and cannot tease apart all the non-storm related power losses due to losses in natural gas infrastructure. But certainly EPA economists can review PHMSA data, state service disruptions, DOE Form 861 data, and use appropriate analyses from LBNL and Argonne to determine non-weather or **non-weather** outages caused by natural gas infrastructure that may well have been mitigated or perhaps prevented with additional methane leak detection and maintenance actions required under a re-proposed NSPS for the midstream transmission and distribution utilities.

EPA is not the only agency that has failed to recognize the broader societal impacts from loss of natural gas to power plants or direct industrial natural gas customers. PHMSA's own Preliminary RIA for regulations in Parts 191 and 192 calculate safety benefits for safety incidents averted and not for the costs to manufacturers or electric generators who lose natural gas. "There is...a loss to shippers in the form of deferred shipment, storage, or lost or deferred gas production, and potentially a loss to end users in the form of having to make unplanned alternative supply arrangements for some period of time. These costs...are difficult to estimate." P. 121, Preliminary RIA.

Commenter points to the directions given to both EPA and PHMSA in **OMB Circular A-4** (issued 9/17/2003). See Section E Identifying and Measuring Benefits and Costs and 6. Ancillary Benefits and Countervailing Risks. The relevant assignment to agencies in conducting cost benefit analysis is: "Your analysis should look beyond the direct benefits and direct costs of your rulemaking and consider any important ancillary benefits and countervailing risks. An ancillary benefit is a favorable impact of the rule that is typically unrelated or secondary to the stated purpose of the rulemaking..." Page 26

PHMSA and EPA have not looked at information provided by this commenter at least three times¹⁶ about North American Electric Reliability Corporation (NERC)'s 2017 Single Point of Disruption Study (SPOD) where NERC identified locations where power plants are reliant upon one single compressor station and one single natural gas pipeline. Thus, the reliability of that segment of the energy system is more compromised and the consequences of a leak or undetected corrosion are more significant.

Section VI. Learn from Experience under OOOOa and Voluntary Methods to Address Methane

The commenter has no affiliation with the organization ONE Future¹⁷, a private organization representing approximately 21 companies in various energy sector segments. Nor has the commenter reviewed ONE Future's claims of how the reductions in methane intensity in the last three years. Their methane intensity assertion is taken at face value. The website does not show an indication of how each segment reduced methane and the numbers appear to reflect all industry segments in the ONE Future membership. However, the commenter points to the assertions that the industry has reduced methane intensity by 41% in less than two years. This is a dramatic reduction and one worthy of commendation. Perhaps EPA should consult with these companies, PHMSA and state pipeline safety (NSPSR) agency heads to determine what is the best and most economical way to reduce methane in a revised rulemaking. By recommending this, the commenter is not suggesting that low-volume producers should be automatically covered in this cycle of NSPS (OOOOa). This commenter does agree with EPA that many of the costs to the independent, low-volume producers do cause one to be concerned that stringent methane leak detection and leak repairs could strangle off new shale gas investments. Larger volume producers appear in trade press to support keeping the rule in place—perhaps with some technical corrections. ONE Future's website includes:

"The coalition registered a 2018 methane intensity number of 0.326%, **a decrease of 41% from its 2017 number of 0.552%**. Our members have a common goal to reduce emissions to improve the quality of life for the communities in which we operate; and we will continue to work to reduce emissions further and encourage others to join us so that we can do so collectively as an industry. ONE Future has identified sectoral performance targets for each of the four major industry sectors (Exploration & Production; Gathering & Processing; Transmission & Storage, and Distribution & Retail. Considering not all companies are created equal nor sectors created equal, these sectoral targets serve both to benchmark company progress toward their goals, as well as facilitate comparisons amongst diverse companies as each strives for optimal performance".

EPA can learn from technical and economic lessons from industry as to which segments have the least cost (and perhaps largest benefits) from recovery of methane for sale in market, which segments have largest economic risk from methane recovery, which segments have already adopted Best Management Practices or adopted state regulatory programs¹⁸ to address methane leak and repairs.

Section VII. Conclusion

The prior administration did not correctly design the OOOOa rulemaking to best identify methane, give time for the industry to take corrective action in an affordable manner. EPA also should set up separate source categories looking at practical operational, ownership, feasibility, and operations issues for each

¹⁶ EPA-HQ-OAR-2017-0483 comments and meetings at OAQPS in September 2017 and 2018.

¹⁷ <https://onefuture.us/who-is-one-future/reduced-emissions/>

¹⁸ Pennsylvania, Colorado, and New Mexico, etc...

segment. EPA did not really try to do this in 2016. There is precedent for this by the way the EPA established ACE where not all fossil fuel fired power plants were covered in the rule. And each power plant unit could identify its optimal heat rate improvement. EPA failed to look at NSPS and separate source categories in this rulemaking. It can and should.

At the same time, there is no need to rescind this rulemaking in totality. Regulating methane can serve two purposes: reduction of a pollutant that is more powerful than CO₂ and to address safety issues. The rule has been operational since late 2016 and the industry has already made their investments.

EPA does not have to conduct endangerment determinations for each industrial sector and segment to justify GHG regulations.

EPA can make technical corrections to the OOOOa rule for pipeline/compressor station or midstream segment of the oil/gas sector, the natural gas storage segment and add the LDCs (private and publicly-owned) and regulate with cooperative expertise from PHMSA and state pipeline safety agencies. PHMSA has been mandated to address pipeline safety by PIPES Act and other statutes and missed many of those deadlines for more than 10 years. EPA does not have to address all segments of the oil/gas sector in this first round of the OOOOa rulemaking but address the largest emitters and where the technologies are feasible and affordable. EPA can expand the segments covered in this rule in subsequent NSPS rulemakings. Since NSPS is an iterative process with a review every 8 years, EPA can come back and address upstream low-volume producers in the next 8-year cycle or design a “glide path” to implementation of the revised OOOO a rule. While the commenter is not convinced upstream low volume producers¹⁹ need to be included in this cycle of the NSPS rule, the commenter realizes that there may be less expensive systems to identify methane from upstream production locations in the next 8 - year cycle.

The upstream low-volume producers are already under massive investment cutbacks, mergers and bankruptcies. There is no question that the upstream low volume producers have fugitive methane leaks. But forcing them to invest in technologies and train staff or hire contractors to address fugitive leaks in the first few years of a new production play is economic disaster for many of the companies. Wall Street Journal’s Editorial Board²⁰ accurately pointed out in August 2019 that the methane regulation (along with other regulations) can squeeze our small producers. EPA needs to walk a delicate balance in a similar way that the Food and Drug Administration (FDA) is sometimes asked to treat new drugs or medical device manufacturing differently with changes in packaging or labeling in the first year or two of production if there is no life-threatening purpose to the regulation but when new businesses can easily “whither on the vine” or never emerge from the business “valley of death” so common in many different businesses.

Adding LDCs to the rule (in consultation with the local state pipeline safety agencies and PHMSA¹) will still focus EPA on fugitive methane emissions while not strangling off upstream **low-volume** producers.

Regulating fugitive methane leaks is not intrinsically wrong. But it would be better for all parties if the OOOOa rulemaking were “surgically” corrected rather than be rescinded. There is much to be learned from at least three years of compliance when, later, EPA will propose a NSPS for existing sources. Congress appears to be contemplating a legislative mandate to retain or maintain the NSPS for new

¹⁹ As defined by the U. S. Department of Treasury’s IRS for tax purposes.

²⁰ <https://www.wsj.com/articles/explaining-the-methane-rule-panic-11567205659>

source (OOOOa) rule under SAFER Pipelines Act. (This bill has not yet been passed by House and not likely to be passed by Senate before 2020). Commenter mentions this because Congress might take action requiring EPA to retain OOOOa rule. Even if so, there are legitimate technical corrections that should be made to the final OOOOa rule, whether not rescinded or required by a new law. And, a national NSPS for new sources would be better for midstream gas transmission than meeting multiple state or city ordinances on methane leak and repair. (Commenter offers no views as to whether upstream producers or gathering segments or LDCs would prefer a state by state or national NSPS/OOOOa for existing sources).

Commenter also believes these comments to technically improve upon the OOOOa rule will still be useful for U. S. EPA staff who will, one day, work on existing source regulations to address methane as GHG. Additionally, they will help natural gas industry projects such as pipelines and compressor station proposals point to the OOOOa rule meeting NEPA requirements for new and modified sources. Too many pipeline/compressor stations have been delayed or rejected by FERC or courts under NEPA concerns.

Commenter believes that there are many advantages to having an improved methane regulation, with differentiation of sources, for many purposes expressed in these comments. One of those benefits is reducing the litigation and delays under FERC and state agencies for NEPA compliance.

Thank you for considering these comments. Commenter is available to answer questions or clarify as needed. Please contact Theresa Pugh at pugh@theresapughconsulting.com or 703-507 6843.