BLUEGREEN ALLIANCE

CREATING GOOD JOBS, A CLEAN ENVIRONMENT, AND A FAIR AND THRIVING ECONOMY

BlueGreen Alliance
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Docket ID No. EPA-HQ-OAR-2021-0317: Response to the Environmental Protection Agency's Proposed Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources in the Oil and Natural Gas Sector

The BlueGreen Alliance unites America's labor unions and environmental organizations to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy. Our partnership is firm in its belief that Americans don't have to choose between a good job and a clean environment—we can and must have both. We appreciate the opportunity to inform and respond to the EPA's proposed rule on methane emissions in the oil and gas sector. Reducing methane emissions in the United States is an example of how America's environmental challenges can also be economic opportunities. Investing in methane mitigation will not just make workers and communities around the facilities safer and healthier, but will also generate and support quality, family-sustaining jobs. With this program, workers and communities will be protected, jobs will be created, and our nation will take another concrete step toward reducing air pollution and the emissions driving climate change.

Activities in the U.S. oil and gas industry are, together with agriculture, the largest source of methane emissions.[i] These emissions result from both accidental leaks as well as outmoded practices and obsolete technology utilized by the industry in the gathering, transmission, production and processing of natural gas. The anticipated investments discussed in this report could bring about emission reductions equivalent to the natural gas consumption of nearly 19.7 million households each year from 2023 to 2035.[ii]

The problem goes beyond impacts to our climate. Throughout this process, the nation's oil and gas sector leaks into the air other dangerous and wasteful emissions like smog- and soot-forming volatile organic compounds and benzene—a known carcinogen— which endanger workers and communities surrounding these facilities.[iii]

This standard would achieve cost-effective methane emissions reductions and provide greater certainty about Clean Air Act requirements for new, modified, and existing oil and natural gas activities, including the production, processing, transmission, and storage of natural gas and the production of oil. Low-cost solutions already exist to plug industrial

gas leaks, which are being deployed by many companies. Updating industry practices and equipment to meet the proposed standards will not just make workers and communities around the facilities safer and healthier, but will also generate and support quality, family-sustaining jobs.

Reducing methane leaks is a win-win for workers, communities, and climate

The threat of catastrophic climate change has reached a crisis point. According to the Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report, the window to prevent the worst effects of warming is rapidly closing.[iv] Keeping the world on its target of 1.5℃ of warming will require immediate action to reduce the emission of greenhouse gasses. Of the greenhouse gasses (GHGs) being emitted, methane is one of the most potent, with one ton of methane in the atmosphere having over 80 times the warming impact of a ton of carbon dioxide (CO_2) in the twenty years after it is emitted.[v] While methane emissions occur in many sectors, the oil and gas sector stands together with agriculture as the largest source of this pollution in the United States. Methane is emitted from oil and gas infrastructure like wells, compressor stations, and processing plants alongside other dangerous compound, such as volatile organic compounds (VOC), which form smog and soot, and carcinogens like benzene, formaldehyde, and acetaldehyde.[vi] The communities facing the greatest public health risk from these harmful air pollutants are in states with the greatest amount of oil and gas development, including New Mexico, Texas, Colorado, Pennsylvania, Oklahoma, Louisiana, West Virginia, and North Dakota.

Across the country, nearly 14 million people living in one of 236 counties in 21 states face a cancer risk greater than the EPA's one-in-a-million threshold for concern due to oil and gas alone.[vii] Oil and gas sector air pollution is particularly harmful to workers that serve in that industry, who face serious long term health challenges as a result of their labor. Emissions reduction for this sector can significantly improve air quality for workers and communities, preventing 255,000 premature deaths and more than half a million asthma-related emergency room visits globally each year.[viii]

Our nation's energy sector has made significant strides to increase the efficiency of gas and oil systems in recent years. However, emissions of methane and other pollutants continue to harm the economy and the environment by jeopardizing the health of workers and communities, wasting resources, and worsening climate change. Moreover, recent research suggests emissions from oil and gas activities are significantly underestimated in

the EPA's latest greenhouse gas inventory.[ix] In fact, the International Energy Agency's (IEA) 2022 Global Methane Tracker analysis found that national governments underestimated methane emissions from the energy industry globally by 70%.[x]

A standard will expedite technology deployment and emissions reduction

Low-cost, proven measures and technologies are already commercially available to cut methane emissions from the oil and gas sector by 65% in the next five years.[xi] While some companies have moved to adopt these improvements voluntarily,[xii] the prospects of keeping gas in the system with available and cost-effective mitigation technology could improve with a larger market and level regulatory playing field among energy companies. Some states, such as Colorado, already have strong methane pollution standards in place. These standards have resulted in climate, public health, and economic benefits while stabilizing industry by reducing energy waste.[xiii]

Despite these readily available mitigation options, voluntary efforts by oil and gas companies have been uneven[xiv] and limited regulations leave out most sources and sites, leading to emissions growth.[xv] The methane and VOC standards proposed by the EPA reflect the necessity to reduce waste and pollution at new, modified, and existing sources. Having the standard in place also provides an opportunity for companies to innovate in methane mitigation technology and strategies and provides greater regulatory certainty for the industry over the long run.

Fixing leaks and creating jobs through better technology

Low-cost technology to curb emissions already exists, is readily available, and is being deployed now by many companies. A report from ICF International, Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries, explores what sources are responsible for a large portion of the emissions at existing facilities and what existing technologies can be used to reduce them. One key finding was that energy sector methane emissions could be cut dramatically—40%—at an average annual cost of less than one cent per thousand cubic feet of produced natural gas by adopting available emissions-control technologies and operating practices. These costs could be further offset by recovering the full market value of recaptured natural gas.[xvi] Even in times when the market price of gas fluctuates downwards, methane emissions mitigation remains a cost-effective approach to combating climate change. ICF found that even at a low gas price of $2 per thousand cubic feet, the cost of methane emissions

mitigation is still just over one cent per thousand cubic feet of natural gas produced.[xvii] While we believe that higher emission reductions still—on the order of 65%—are achievable and necessary, this report demonstrates that methane emission reductions are a low-hanging fruit in terms of improving public health, protecting workers, and mitigating climate change. As the ICF International report notes, 80% of methane emissions are produced by 20% of the products and processes. The actions that we can take to reduce the largest emissions areas by volume include:

- Improving leak detection and repair of fugitive emissions ("leaks") at facilities and gas compressors;
- Limiting flaring of associated gas and permitting it only for safety and maintenance reasons; and
- Replacing high-emitting pneumatic devices, including pumps and bleeding equipment.[xviii]

ICF International found that more than half of methane reductions identified can be achieved at a negative net cost, accounting for the value of captured methane sold at $4 per thousand cubic feet (Mcf). In many cases, more than 95% of emissions could be reduced at zero net cost.

When it comes to the energy technology driving America's 21st century economy, many of the techniques and equipment date back several decades to the 20th century. Newer, less leak-prone machinery for oil and gas operations is increasingly available; a Datu report identifies 584 employment locations (referred to in the report as "employee locations") for manufacturing, assembling, and providing installation and other services for methane mitigation technologies that could help reduce leaks and achieve the emissions reduction goals of the EPA methane standard.[xix]

For example, compressors have long used a "wet" seal system, using high-pressure oil to keep seal moving parts. Newer "dry" seal technology, using high pressure gas, is increasingly available and substantially reduces emissions. In addition, dry seals significantly reduce operating costs and improve efficiency; some types of dry seal compressors are estimated to pay back their costs in less than a year.

Pneumatic controllers are devices that use energy from pressurized gas to create mechanical action. In oil and gas operations, devices often used natural gas as an operating element, as it is readily available and flowing under pressure. Newer technology

uses compressed instrument air to deliver the same mechanical effect. Other non-emitting options, like solar-powered controllers or those connected to the electric grid– are also available and cost-effective, removing the need to vent high– or, indeed, *any*—volumes of natural gas in order to operate this equipment safely and effectively.

In addition, regular leak detection and repair inspections are critical for reducing emissions from this sector. Large quantities of methane and other pollutants are released every year through inadvertent equipment leaks at well sites and compressor stations. Particularly concerning are "super-emitter" events, which can go for weeks or months without being detected and which are responsible for a huge percentage of total emissions from this sector. EPA's standards require regular inspections to find and fix leak equipment at *all* well sites at compressor stations, and will allow qualified third parties to provide data identifying super-emitter events. These standards will avert emissions, improve operations and require skilled, proficient workers to ensure strong guidelines are met.

Manufacturing opportunities

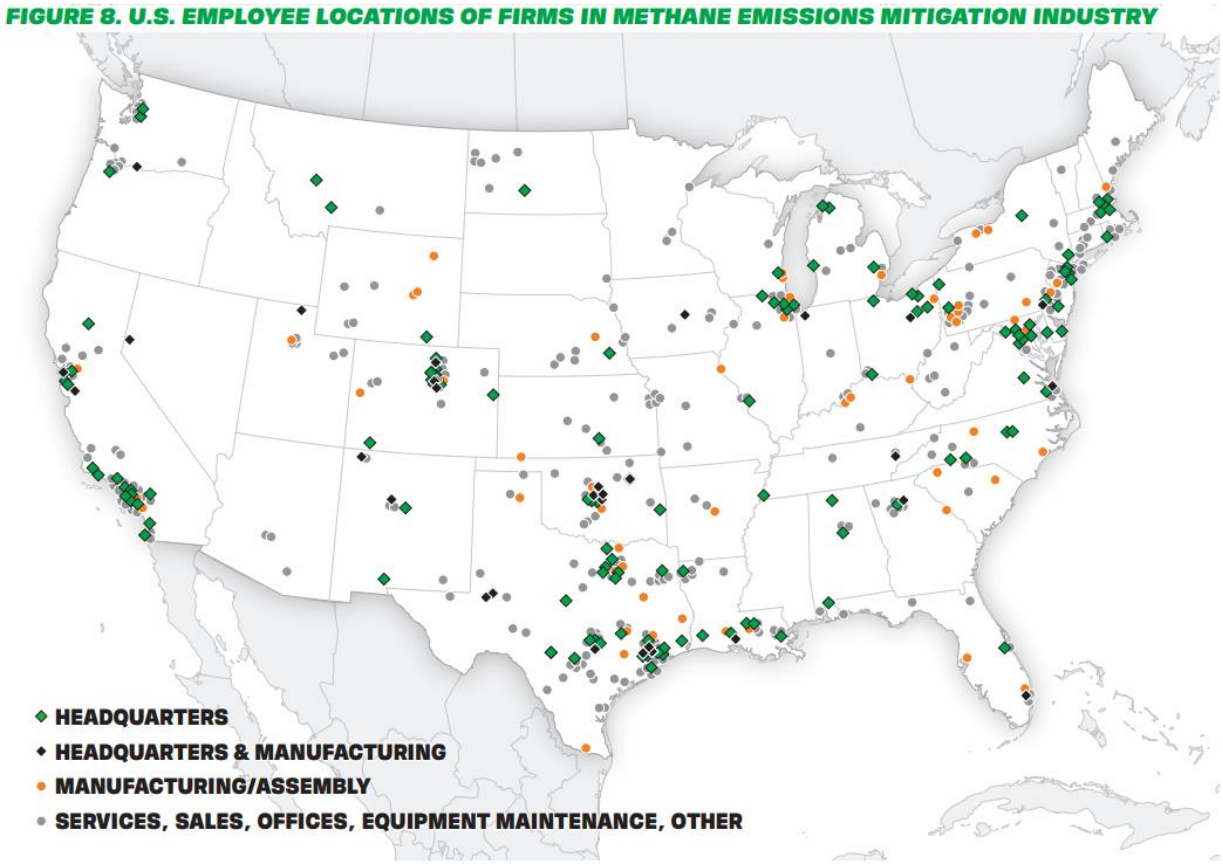
A 2021 report from Datu Research, *Find*, *Measure*, *Fix: Jobs in the U.S. Methane Emissions Mitigation Industry*, further explains existing technologies with a focus on identifying and exhibiting companies that produce the products and services. They found that this sector is growing rapidly. Today there are 33% more firms manufacturing methane mitigation technologies than in 2014, and 90% more firms providing installation and other services than in 2017:

- At least 215 firms manufacture methane mitigation equipment in the United States and/or offer services;
- 70% of methane mitigation firms qualify as small businesses;
- Methane mitigation companies provide U.S. jobs in at least 748 locations across 47 states; and
- The methane mitigation industry employs at least 35 key job types[xx]

Jobs in the mitigation industry have the potential to provide pathways into the middle class for millions of workers and families, and to support millions of high-skill, high-wage jobs—particularly in manufacturing. As this sector grows, we need to ensure that the jobs created are good-paying, safe, accessible union jobs. This means supporting and growing

pathways into good union jobs in these and other sectors for workers of color and other segments of the population historically underrepresented in these jobs.

Figure B: U.S. Employee Locations of Firms in Methane Emissions Mitigation Industry[xxi]



Job Creation Potential

With full and continuing adoption of leak reducing technologies and practices at new and modified oil and gas facilities, this would suggest net creation of over 85,000 job-years.[xxii] This estimate is based upon the 2021 Proposed Rule. While the BlueGreen Alliance is currently working on updating our economic modeling to provide a complete picture of the emissions reduction and job creation potential of the EPA's 2022 Supplemental

Proposed Rule, our preliminary analysis suggests that the 2022 supplemental would amplify the job creation potential of the 2021 proposal by improving emissions monitoring, reducing flaring, and expediting technological deployment. In many ways, job creation from the EPA's proposed standard is supported by the infrastructure investments needed to mitigate methane leaks. The Business Roundtable notes, for example, that over a 20-year period, every additional $1 invested in infrastructure drives roughly $3.70 in additional economic activity.[xxiii] Especially when done at scale, infrastructure investments will drive new employment opportunities. The proposed rule will drive infrastructure investment as a critical step to reduce fugitive methane emissions — in this case to reduce such emissions by an estimated 36 million cumulative short tons over the period 2023 through 2035, along with 9.7 million tons of volatile organic compounds and 390,000 tons of hazardous air pollutants.[xxiv]

Based on our modeling of the 2021 Proposed Rule, the impacts of this rule will be generally positive. We expect that both the construction and manufacturing sectors will show positive gains in employment as they both produce and install critical upgrades in a variety of oil and gas operations which deliver the estimated emission reductions. This is because the emissions reduction technologies modeled, specifically in leak detection and repair (LDAR), are more labor intensive than the oil and gas extraction industry on average, and can produce increased net revenues by reducing waste. As a result, job losses that result from reduction in traditional extraction operations are more than offset by a shift to jobs required to sustain emissions reduction efforts. Many of these new jobs could be filled by workers with skills and experience in the oil and gas industry.

Under the 2022 Supplemental Proposed Rule, the EPA has incorporated technological flexibility into the standards to promote innovation. This includes giving firms the ability to utilize a diverse array of technologies to observe leaks, such as continuous monitoring systems, apart from conventional optical gas imaging (OGI). In making these modifications, the EPA provides full access to the technologies in the burgeoning methane mitigation industry, providing a potential catalyst for further job growth. The 2022 Supplemental Proposed Rule has also devised a standard for periodic monitoring at all well sites, regardless of production levels, with requirements oriented around the number of wellheads and the type of equipment used. The 2022 Supplemental Proposed Rule creates LDAR requirements that include "AVO" inspections (audio, visual, olfactory) for sites with only one wellhead and no leak prone equipment, and more comprehensive OGI (or advanced technology) monitoring for sites with multiple wellheads or with leak prone

equipment. These requirements strengthen the standards around LDAR criteria and will achieve greater emission reductions.

EPA also included in the 2022 Supplemental Proposal a new Super-Emitter Response Program. The EPA currently estimates that roughly half of all fugitive emissions come from a relatively small number of oil and natural gas sources, suggesting that a few super-emitters (as discussed above) may be responsible for a disproportionate amount of pollution. Under the program, regulators or qualified third parties could monitor for super-emitter events and then notify a facility operator when one occurs, triggering a requirement by the operator to address the leak. This program not only provides targeted action at the worst emitters, but potentially opens a pathway for groups like labor unions to qualify as third-party monitors, expanding the number of high-quality jobs created by this action.

The need to implement and operate advanced equipment and apply more comprehensive leak detection and mitigation technologies over time suggests jobs directly created in the oil and gas sector would not require relocation—the skilled local workforce will already be in place. While some jobs would engage engineering and other technical professions requiring advanced degrees, they mostly also employ high-skilled labor and trades professions complementing the current workforce at oil and gas operations.

Creating and sustaining jobs is tied strongly to the investment and implementation of a well-defined set of cost-effective technologies and practices in the oil and gas sector. The skill level needed and consistent nature of leak detection and mitigation activities entailed by the methane standard—employed industry-wide—offer a new avenue for job sustainment compared to 'business as usual.' These activities will also rely on the existing oil and gas workforce, which is a good-paying, highly unionized sector.

Conclusion

The EPA's proposed rule has the potential to achieve cost-effective methane emissions reductions, spur quality job creation, protect workers and communities, and help to combat climate change. However, we still need to ensure that the jobs created are good-paying, safe, accessible union jobs. This means supporting and growing pathways into good union jobs. Updating industry practices and equipment to meet these proposed standards will not just make workers and communities around the facilities safer and healthier, but will also generate and support quality, family-sustaining jobs.

Implementing these standards is a win-win-win situation. With these standards, workers and communities will be protected, jobs will be created, and our nation will take another concrete step toward reducing harmful air pollution and the emissions driving climate change.

[i] U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks, April 2022. Available online: https://www.epa.gov/system/files/documents/2022-04/us-ghg-inventory-2022-main-text.pdf.
[ii] Calculated as 920 million metric tons of carbon dioxide equivalent (MT CO_2e) project methane emissions reduction with proposed standards 2023-2035 (from Regulatory Impact Analysis), converted to 920 billion kilograms (kg) of CO_2ee, divided by the carbon dioxide emissions coefficient for natural gas 54.87 kg CO_2ee/thousand cubic feet (cf) methane (CH4) (from https://www.eia.gov/environment/emissions/co2_vol_mass.php) to get 16,766,903,590.30 thousand cf CH4, then divided by 65.56 thousand cubic feet natural gas delivers per customer (https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm*1000/ https://www.eia.gov/dnav/ng/ng_cons_num_dcu_nus_a.htm).
[iii] Clean Air Task Force, *Fossil Fumes (2022 Update): A public health analysis of toxic air pollution from the oil and gas industry*, September 2022. Available online: https://cdn.catf.us/wp-content/uploads/2016/06/14175846/fossil-fumes-report-2022.pdf.
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[xii] McKinsey, *Curbing Methane Emissions*, Sep 2021. Available online: https://www.mckinsey.com/~/media/mckinsey/business%20functions/sustainability/our%20insights/curbing%20methane%20emissions%20how%20five%20industries%20can%20counter%20a%20major%20climate%20threat/curbing-methane-emissions-how-five-industries-can-counter-a-major-climate-threat-v4.pdf.
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[xxii] Based upon internal BGA research. Note that the jobs estimates reported here are more appropriately called "job-year equivalents." Each "job" represents an increase in demand for employment sufficient to employ one-person full time for one year.
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