

Testimony of Elgie Holstein
Senior Director for Strategic Planning, Environmental Defense Fund
Before the Subcommittee on Environment
House Committee on Science, Space and Technology
Regarding EPA's Methane Rules
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Mr. Chairman and members of the subcommittee, thank you for this opportunity to discuss the role of methane as a climate-changing greenhouse gas pollutant and the need for EPA rules to guide the industry in minimizing those emissions.

Environmental Defense Fund (EDF) is a national environmental advocacy organization with a million-and-a-half members nationwide. Placing a strong emphasis on our core strengths of science and economics, we are dedicated to finding innovative approaches to solving some of the most difficult national and international environmental challenges. Whenever possible, we collaborate with private-sector partners, state and federal leaders, academic institutions and other environmental organizations interested in maximizing incentives for market-based solutions to environmental problems.

We recognize that the oil and gas sector is a key contributor to our nation's energy mix, but with that role comes the responsibility to minimize harmful impacts to our communities and to the environment. With the recent increases in recoverable oil and gas reserves, it is more important than ever that both the industry and the government commit to a cleaner and more sustainable energy future. Recognizing and addressing the causes and effects of methane emissions with respect to global climate change is one important step in fulfilling that commitment.

Our scientific understanding of the extent of methane pollution and its effects has been growing steadily. EDF has contributed to that knowledge base by engaging with over 100 partners from industry and academia in numerous scientific studies that have helped to better identify the extent and sources of methane emissions in the oil and gas sector. That work has been driven by our dual concern for the environment and for public health.

There is no question that methane is a harmful climate pollutant. Over the first 20 years following its release, methane is some 84 times more potent than CO₂ in terms of the climate damage it does. While CO₂ represents a continuing, long-term threat in the form of accumulated, long-lived and rising atmospheric concentrations, methane drives

near-term climate effects. The result is that 25% of the global warming we are experiencing now is due to methane emissions.

In addition, the Intergovernmental Panel on Climate Change has concluded that more than half of the warming in the next couple of decades due to current emissions will be from short-lived climate pollutants (based on present-day emissions data from various sources and GWPs in IPCC AR5).

Decisions made now about methane emissions will have a major impact on the rate at which the climate changes over the lifetimes of many Americans living now and spanning the next several generations. (For more details about the science underlying concerns about methane and other short-lived climate “forcers,” please see the attached article from Science magazine.)

From both a science and a policy perspective, it makes sense – and we believe it is essential -- to address the threats from both climate-changing pollutants.

Across our economy, the oil and gas sector represents 33% of U.S. methane emissions, the largest of all industrial U.S. sources, according to EPA.

EPA’s latest inventory, published in April of this year, estimates that in 2014, oil and gas industry operations released 9.8 million metric tons of methane into the atmosphere – 34% higher than previous estimates.

That’s enough to meet the needs of over 7 million households. And, it packs the same climate punch over the first 20 years as the CO₂ emissions from more than 220 coal-fired power plants.

The good news is that doing something about methane pollution – including complying with EPA’s methane rules – can be accomplished at low cost, using existing technology. Moreover, as information about the specific sources of methane leakage continues to improve, prevention, detection and repair methods and technologies will also improve, bringing prices down even farther.

In any discussion about the costs of controlling methane, it is useful to start with ICF Inc.’s landmark 2014 study, in which they found that a relative handful of specific remedial actions could yield a 40% reduction in methane emissions from the oil and gas sector at a cost of about one cent per thousand cubic feet of gas produced.

While scientific evidence of the threats posed by methane emissions continues to mount, estimates of the extent of those emissions have risen dramatically. The U.S. oil

and gas industry emits on the order of 10 million metric tons of methane pollution per year, from thousands of sites across the country.

As I mentioned, EPA's recent update to its methane inventory reflected an increase of 34% over previous estimates. Yet, recent scientific evidence suggests, even that dramatic revision does not reflect the additional methane pollution represented by high, random emissions coming from a small percentage of sites. This kind of "fat tail" distribution, in which large volumes are emitted from a relatively small percentage of sites, is characteristic of methane leakage in the oil and gas sector. For that reason, leak detection and repair regimes, such as those required by EPA's rules and under some state programs, are an essential part of addressing the methane emissions problem.

One of the worst recent examples of methane leakage – indeed, one of the worst on record -- occurred during the multi-month disaster that began last fall when the Aliso Canyon facility in California leaked an astonishing 97,000 metric tons of methane. How much is that? – It is the equivalent climate impact of burning nearly a billion gallons of gasoline.

The significance of the Aliso Canyon disaster extend well beyond climate impacts, however. Nearby residents were sickened and thousands of people from the town of Porter Ranch were evacuated from their homes, as the disaster dragged on for more than three months. There are approximately 400 similar facilities nationwide, and Aliso Canyon powerfully demonstrates the need to develop state and federal rules that will prevent a similar disaster from happening again.

Among the many concerns raised by Aliso Canyon is the impact of leaks on public health and safety. According to the American Lung Association, emissions of greenhouse gases, such as methane, threaten the health of current and future generations. (December 2015 ALA letter to Administrator McCarthy.) In calling for EPA action to reduce methane emissions, they point out that "the nation has a short window to act to reduce those threats." They also emphasize that cutting methane emissions can provide immediate health benefits, including reductions in volatile organic compounds, which include gases recognized as hazardous air pollutants." Finally, ALA notes that limiting VOCs will reduce the amount of ozone, thereby reducing respiratory diseases and premature deaths.

EPA's recently finalized new source performance standards for methane pollution from the oil and gas sector represent a critical step towards minimizing these climate and public health impacts. These standards are based upon proven, highly cost-effective technologies and best practices that responsible companies are already deploying to reduce emissions. They also build on successful regulatory frameworks that have been

adopted over the last few years in leading energy-producing states such as Colorado and Wyoming. Among other things, these standards will require — for the first time — that oil and gas companies carry out semi-annual or quarterly leak inspections at new facilities in oil and gas production, gathering, transmission and storage; minimize emissions from newly completed hydraulically fractured oil wells; and deploy emission control technologies for devices like pneumatic pumps.

These common-sense protections will yield a safer climate for our children and cleaner air in communities across the country — avoiding over half a million tons of methane pollution each year by 2025, as well as over 200,000 tons of smog-forming VOCs and 3,900 tons of toxic air pollutants such as benzene. And they will do so with minimal impacts to the industry and to energy prices.

While EDF supports EPA's action to control oil and gas sources of methane emissions from new and modified sources, we strongly encourage the agency to keep making progress toward addressing methane emissions from existing oil and gas sources as well. According to ICF, Inc. nearly 90% of oil and gas methane emissions in 2018 will come from sources which were already in existence in 2012.

The Bureau of Land Management's recently proposed venting and flaring rule, which applies on federal and tribal lands, underscores the viability of applying many of these commonsense controls to both new and existing sources. We applaud that agency for taking action to minimize the waste of publicly owned resources, which will have important climate benefits as well.

These kinds of federal actions are built on a foundation of state initiatives that have already proven reducing methane from the oil and gas sector can be both effective and economical. In Colorado, we partnered with the state's three leading oil and gas producers to secure first-in-the-nation regulations to reduce methane and other harmful air pollutants from oil and gas operations. Some of the industry's largest operators supported the new rules because they understood both the availability of eminently cost-effective pollution controls as well as their responsibility to demonstrate environmental leadership and to reassure an increasingly concerned public.

The Colorado rules require leak-detection-and-repair programs for all wells — both new and existing, conventional and unconventional. The largest well sites will be inspected monthly. Unnecessary venting during well maintenance is no longer allowed. And so-called high-emitting valves will be replaced by low- or zero-emission valves. Existing storage tanks will have to meet new pollution limits as well as current federal limits applicable to new tanks. Altogether, the new rules will annually remove 100,000 tons of methane and 90,000 tons of smog-forming volatile organic compounds, equal to the

emissions of all of the cars and trucks in Colorado today. In a recent study by the Conservation Economics Institute on the Colorado methane rule, findings show that seven out of ten producers believe that the benefits of regularly checking equipment for leaks outweighs the costs.

Pennsylvania has released a blueprint for strong methane rules that would regulate both new and existing sources.

In Wyoming, where air quality has been severely compromised in a portion of the state by rapidly expanding oil and gas operations, finalized rules for the Upper Green River Basin, where production activities were contributing to ozone non-attainment as bad as in some cities. This program includes quarterly leak-detection-and-repair inspections for new and existing oil and gas emission sources.

Leaders in Wyoming recognize that you don't solve the problem if you don't tackle existing sources. Recently, rules were finalized in Wyoming improving requirements for new sources statewide. The state's Air Quality Advisory Board unanimously voted to incorporate by reference EPA's new source standards just last week.

In Ohio, Governor Kasich supported changes to the general permit for oil and gas operations. The changes require leak-detection-and-repair program for volatile organic compounds from new, unconventional wells --like Wyoming and Colorado, requiring quarterly inspections using an infrared camera or handheld hydrocarbon analyzer.

I know that this subcommittee is concerned about the potential costs to the industry of complying with state and federal methane rules.

The good news on that issue is not only that cutting methane emissions is generally very inexpensive, as I noted above, but that the cost of methane leak detection surveys is relatively low as well. Today, methane inspections can cost as little as \$250. And of course, one of the benefits of the EPA regulation is that it is already driving innovation in the private sector, which promises to bring those costs down even more.

So, demand for inspection services goes up, accompanied by technology innovation (and with it, jobs), followed by declining costs. Today, there are 75 companies in 500 different locations across 46 states providing methane-reduction services and support.

Conclusion

Natural gas is, and will remain for the foreseeable future, an important part of our nation's energy mix. The natural gas revolution in America can make a positive

contribution to a cleaner environment, but only if gas development is based on reasonable rules to ensure that its more damaging impacts are limited.

As we manage our nation's bounty of oil and gas, it is important to get the rules right. As mentioned above, doing so will not only help minimize adverse environmental impacts, it is an essential ingredient in building public trust and confidence in the ability and commitment of the industry to reducing negative impacts on public health.

Regulating methane emissions – from both new and existing sources – is an important and cost-effective step in stopping the worst effects of climate change. Other measures are needed as well, including legislation to put a price on carbon that will reflect the full costs of carbon pollution, while simultaneously inspiring new technologies to reduce those impacts and to stimulate further deployment of cleaner alternatives.

Thank you for the opportunity to testify today, and I welcome any questions you may have.