Comment on Proposed EPA Rule "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review"
(In reference to Docket ID No. EPA-HQ-OAR-2017-0757)

We are writing on behalf of Concerned Scientists @ IU (and its student affiliate organization, Advocates for Science @ IU), a grass-roots, non-partisan community and campus organization comprising over 1200 members—scientists, students, and supporters of science—from the south-central Indiana region. While many of our members are faculty, students or staff at Indiana University, our organization does not officially represent the University. Concerned Scientists @ IU are dedicated to strengthening the essential role of science in public policy and evidence-based decision making.

We strongly oppose the proposed elimination of methane emission standards from the oil and natural gas source category, because we are convinced by the abundant evidence that worldwide reductions in greenhouse gas emissions are essential and urgent, in order to avoid disastrous impacts of global climate change. We find that the EPA proposal is based on flawed argumentation and questionable numerical estimates, would generate minimal, if any, net compliance cost savings to the industry, and conveys entirely the wrong message about U.S. concern regarding climate change.

A significant fraction of the rationale for the primary EPA proposed rule revision centers on the appropriateness of the EPA's 2012 decision to broaden the Oil and Natural Gas source category to include natural gas transmission and storage sectors, in addition to the originally designated production and processing sectors. The EPA now argues that the broadening was "*erroneous*," since "*the transmission and storage operations are distinct from production and processing operations because the natural gas that enters the transmission and storage segment has different composition and characteristics than the natural gas that enters the production and processing segments.*" Indeed, at the transmission and storage stages the processed gas consists of almost pure (95-98%) methane. Thus, these stages are far more relevant to methane emissions than to the emissions of the more general categories of volatile organic compounds (VOC), despite the argument in the proposal that regulations on the two types of gases are completely redundant.

It does not appear that EPA is consistent in its decision on this "erroneous broadening", because it simultaneously offers an alternative proposal in which transmission and storage sectors will continue to be included in the definition of the Oil and Natural Gas source category. What is common to the primary and alternative proposals is a **complete elimination of explicit performance standards** for methane emissions, covering production, processing, transmission and storage sectors. This elimination thus appears to be the principal impact of the proposed rule changes, and it is this elimination on which we focus below. While the proposal aims specifically at "new, reconstructed and modified" sources, the proposal acknowledges that the methane rollback would also eliminate the Clean Air Act requirement for states to issue methane emission standards for *existing* oil and gas industry operations.

The EPA invites comment on whether the Agency is required to make a pollutant-specific Significant Contribution Finding (SCF) for methane emissions from oil and natural gas sources. Indeed, Section 111(b)(1)(A) of the Clean Air Act (CAA) requires that the EPA make an "endangerment finding" with respect to potential pollutants, comprising two elements: *"(1) A finding that certain air pollution may reasonably be anticipated to endanger public health or welfare, and (2) a finding that the source category's emissions of air pollutants cause or contribute significantly to that air pollution*." Item (1) has already been addressed by EPA in its 2009 Endangerment Finding that six greenhouse gases, including carbon dioxide and methane, pose a threat to public health and welfare through their contributions to

global warming. The identification of those greenhouse gases as "pollutants" was judged to be consistent with the CAA's definition of pollutant in the U.S. Supreme Court 2007 decision in *Massachusetts v. EPA*.

The CAA assigns considerable discretion to EPA to determine the criteria for judging "significance" in addressing item (2) of the endangerment finding, and we concur that the Agency should be required to provide a reasoned justification for their judgment. But, in contrast to the ambiguous, qualitative discussion in the proposal over what criteria should be used to make a significance judgment, we find the reasoning to be straightforward in the case of methane emissions from oil and natural gas operations:

- Greenhouse gases have been found to pose a serious risk to public health and welfare in the 2009 Endangerment Finding.
- Over the short term when reductions in greenhouse gases *must* be implemented to limit global warming, methane is the most potent of the six greenhouse gases considered. Over a 20-year period its global warming potential for absorbing infrared radiation from Earth is 84-87 times greater than that of carbon dioxide.[1] The factor of 25 used in the EPA proposal refers to averaging over 100 years, since methane persists in the atmosphere for much shorter times than CO_2, but the impacts of climate change will be disastrous if we consider greenhouse gas controls only over a 100-year timeline. That implies that methane emission reductions will make a more immediate impact on limiting the atmosphere's mid-century global warming potential than will comparable reductions in CO_2.
- Oil and natural gas operations are the single largest source of methane emissions within the U.S., accounting for about 30% of all (natural and anthropogenic) methane emissions.
- By any standard, the largest source contribution of the most potent greenhouse gas must be judged to be a "significant" contributor to greenhouse gas pollutants, and in turn should be subject to Clean Air Act regulations.

We do not believe it is necessary for EPA to produce a "one-size-fits-all" formula or threshold for determining significance of pollutant contributions, since different pollutants and different source categories are likely to require different kinds of consideration.

Even if methane from oil and gas operations is reasonably judged to be a significant contributor to public endangerment, "*the EPA is proposing to rescind the methane requirements applicable to the source category because they are wholly redundant with the existing VOC requirements*." The EPA's argument is that methane and VOC losses to the atmosphere occur at the same locations in the operation chains, and the Best System of Emission Reduction is identical for the two. Thus, they claim that their new alternative proposal, in which methane requirements are eliminated for all operational stages, will result in no increases in methane emissions and in no compliance cost savings for the industry. This claim appears in direct contradiction to the EPA's 2015 proposal preceding the 2016 revision of this rule, where it was stated that "*reducing methane emissions from this source category cannot be treated simply as an incidental benefit to VOC reduction*."

If the aim is, as EPA now claims, to eliminate unnecessary redundancy in regulations, EPA could just as well have proposed to eliminate the VOC performance standard. The EPA justifies its choice to rescind methane-specific standards "*because the requirements for VOC and correspondingly, sources' compliance with those requirements, are longer established than those for methane*." We do not find this compelling reasoning. While the sources of VOC and methane leaks may overlap, the two have

quite distinct pollutant effects. Therefore, the urgency and stringency of desired reductions may differ considerably for the two pollutant categories. It would make sense to apply the more stringent standard as the one to be demonstrated by systems of emissions reduction.

But judgments of relative stringency may change over time, for example, as climate change mitigation becomes more urgent, as new scientific data on endangerment to health are published, as new techniques for pollutant monitoring and removal are developed, or as international treaty obligations for greenhouse gas emissions are to be met. The most sensible approach to regulation of emissions from oil and natural gas operations is thus to keep performance standards for both VOC and methane on the books, and to update those standards periodically as the science and technology evolve.

It is unclear what tangible benefits would be achieved by rescinding the methane emissions standard. The EPA proposal admits that its alternative proposal would produce no additional methane emissions or compliance cost savings in comparison with the existing rule. Elimination of the methane standard would, however, likely lead to a perception that natural gas operations are more harmful to global climate, and thereby, to a loss of investment and revenue dollars for the natural gas industry. For this reason, a number of large companies involved in natural gas production have objected to this EPA proposal.[2,3]

The main proponent of the proposed elimination of the methane standard appears to be the American Petroleum Institute, whose claims are inconsistent with the findings within the proposal itself. For example, Erik Milito of the American Petroleum Institute has claimed[4] that the Obama-era methane limits imposed "*a disproportionate effect on small businesses*" in the oil industry: "*A lot of mom and pops would have their wells shut in, elderly people with wells on their properties that could be shut down*." The question of whether to include or exclude transmission and storage sectors applies only to natural gas, and not to petroleum, operations. And EPA claims that the methane limits are completely redundant with VOC limits that small oil well owners were already required to meet before methane limits were added. How, then, are small (or large) oil well operators unnecessarily burdened by the methane limits? Similarly, regulation on oil and gas transmission facilities is unlikely to have any significant disproportionate impact on small businesses, as these facilities are almost entirely constructed and operated by larger energy companies.

The EPA's primary proposal to eliminate standards for natural gas transmission and storage, in addition to rescinding methane emissions standards for oil and natural gas production and processing, would produce minimal compliance cost savings at the expense of increases in U.S. methane emissions. EPA's Regulatory Impact Analysis (RIA) estimates the growth in emissions to be 370,000 short tons of methane over the time period 2019-2025. It is not clear how seriously this estimate should be taken, since the EPA's estimate of the *total* methane emissions from oil and gas operations (about 8 million metric tons of methane in 2017) is much lower than the 13 million metric ton estimate from independent, peer-reviewed research.[5] Using the relevant 20-year global warming factor of 85, the EPA's emissions growth estimate is equivalent to 29 million metric tons of CO_2. If one uses instead the proposal's 100-year global warming potential factor of 25, this is equivalent to an increase of 8.4 million metric tons of CO_2, or about 4.4% of EPA's total anticipated U.S. methane emissions from natural gas transmission and storage over that time interval. Using EPA's estimates, this may represent only modest growth, but modest growth is unacceptable when climate change mitigation demands rapid *decreases* in greenhouse gas emissions. There would also be very minor increases in VOC emissions, because by the transmission and storage stages, the handled gas is nearly pure methane.

The RIA takes into account both estimated compliance cost savings and foregone revenues (from the reduced recovery of saleable natural gas) that would accompany the removal of regulations on natural gas transmission and storage. The net cost savings to the industry are then estimated at $14-16 million per year. This analysis does not consider possible investment and revenue losses from increased perceptions of natural gas as a contributor to global warming. The analysis does include an estimate of several million dollars per year of foregone *domestic* climate benefits accompanying the increased methane emissions, but it ignores foregone *global* climate benefits. Finally, the EPA's analysis ignores the possibly much larger impacts of removing the CAA responsibility for states to regulate methane emissions from existing oil and natural gas operations.

Taking all of these factors into account, we conclude that the EPA's primary proposal would provide minimal, if any, net cost savings to the natural gas industry, while damaging the industry's reputation by condoning increased methane emissions. The proposed rule change would also further damage the reputation of the United States at a time when it should be exercising global leadership in reducing greenhouse gas emissions and developing clean energy policies and technologies.

In summary, we strongly oppose EPA's proposed elimination of methane emissions standards for oil and natural gas operations because we find that the proposal (a) is poorly motivated, (b) provides no significant benefit to the affected industries, (c) uses questionable numerical factors in its Regulatory Impact Analysis, and (d) makes a symbolic statement condoning greenhouse gas emissions that ignores the government's responsibility to address the threats of climate change with seriousness and urgency.

1. https://earthobservatory.nasa.gov/features/MethaneMatters
2. https://www.washingtonpost.com/climate-environment/2019/08/29/trump-administration-reverse-limits-methane-powerful-greenhouse-gas/
3. http://blogs.edf.org/energyexchange/2019/05/29/industrys-shift-on-methane-must-continue/
4. https://oklahoman.com/article/feed/9949071/new-rollback-for-climate-changing-releases-from-oilfields
5. https://www.edf.org/climate/methane-studies