

BUREAU OF LAND MANAGEMENT

Waste Prevention, Production)	Docket ID No. BLM-2018-0001-0001
Subject to Royalties, and)	
Resource Conservation:)	<i>Via regulations.gov</i>
Rescission or Revision of Certain)	<i>April 23, 2018</i>
Requirements)	
)	

I. Introduction

On behalf of 34 national, state, and local groups representing public health, conservation, environmental, and tribal citizen interests (Citizen Group Commenters), we write to strongly oppose the Bureau of Land Management’s (BLM) proposal to rescind the Waste Prevention Rule.

The waste of natural gas on public and tribal lands is an urgent and widely documented problem. Between 2009 and 2015, oil and gas operations on these lands wasted 462 billion cubic feet (Bcf) of natural gas—enough to serve 6.2 million households for a year.¹ This waste resulted in lost revenue for taxpayers—funds that could be used by communities to construct roads and schools—and increased levels of harmful air pollution, including methane, volatile organic compounds, and toxic air pollution.

In 2016, BLM adopted the Waste Prevention Rule as a means of combatting this problem. The Rule leveraged commonsense technologies and best practices—long used effectively at the state level and by leading companies—to modernize BLM’s previously outdated and ineffective approach to waste prevention. BLM projected the Waste Prevention Rule would reduce flaring on public lands by “up to 49 percent relative to 2015 levels”,² reduce methane emissions by 175,000-180,000 tons per year (tpy), and save approximately \$3-14 million per year in additional royalties.³

¹ Waste Prevention, Production Subject to Royalties, and Resource Conservation, Final Rule, 81 Fed. Reg. 83,008, 83009 (Nov. 18, 2016).

² 81 Fed. Reg. at 83011.

³ 81 Fed. Reg. at 83014.

In adopting the Rule, BLM engaged in years of study and extensive outreach, holding listening sessions throughout the west and carefully considering stakeholder feedback received through these forums and during the comment period. As a result of these efforts, and because of the cross-cutting and important benefits the Rule will deliver, the final Waste Prevention Rule is broadly supported. Indeed, more than 80 percent of Western voters, who live and work near public lands, support the Rule.⁴ And diverse stakeholder groups, including states, local officials, taxpayers, health groups, moms, outdoor enthusiasts, conservation and environmental groups, and many others have voiced strong support for the standards.

Despite this history, Secretary Zinke now proposes to rescind the Waste Prevention Rule—a proposal which is, in almost every respect, contradictory to the approach and outcomes embodied in the Waste Prevention Rule. The Secretary ignores the well-documented and pervasive problem of waste and BLM’s legal mandate to prevent waste, and proposes to return to (and in some cases, further weaken) an approach which has been demonstrably ineffective in preventing the waste of natural gas on public and tribal lands. Moreover, by the Secretary’s own analysis—which is scant and hastily assembled—the proposal will harm taxpayers, communities, and the public at large: it will allow the waste of 299 billion cubic feet of natural gas over 10 years, resulting in millions in lost revenues for taxpayers and burdening Western communities with increased pollution.⁵ The Secretary proposes to take this harmful action based on the Trump Administration’s directive to revise or rescind the Waste Prevention Rule to the extent that it “burdens” the oil and gas industry. But, even if it were lawful to elevate the interests of private oil and gas companies over the public at large (it is not), the Secretary’s own analysis demonstrates that Waste Prevention Rule itself (and therefore its repeal) has negligible impacts on operators’ bottom line. Indeed, the Secretary’s proposal would trade away the Waste Prevention Rule’s substantial and urgently needed public benefits to increase industry profits by at most 0.19 percent.⁶ The Secretary proposes to effect this radical change without holding a single public hearing or tribal outreach session to understand the views of affected communities.

For these reasons, and many others, the Secretary’s Rescission Proposal is deeply flawed, unlawful, and must be withdrawn. Below, we provide a summary of our comments, which are set forth in more detail in the following sections.

⁴ Colorado College State of the Rockies Project, 2017 Western States Survey 18 (2017), <https://www.coloradocollege.edu/other/stateoftherockies/conservationinthewest/2017/2017WesternStatesInterviewSchedule.pdf>. This document, and all subsequently cited documents, have been submitted as exhibits to BLM, via hand-delivery to BLM’s Washington Office, 20 M Street SE., Room 2134 LM, Washington, DC 20003. Due to their voluminous size, it was not possible to submit the exhibits via Regulations.gov. However, Citizen Group Commenters fully intend for BLM to consider and include all of these documents in the Administrative Record for this rulemaking. A full list of exhibits is included as Appendix 1 to these comments.

⁵ 83 Fed. Reg. at 7939.

⁶ 83 Fed. Reg. at 7940.

- **Section II (pp. 4-7)** provides background on the extensive and well-documented history of preventable waste of natural gas on public and tribal lands, which led to the development and promulgation of the Waste Prevention Rule.
- **Section III (pp. 8-25)** describes the numerous ways in which the Secretary’s proposal to rescind the Waste Prevention Rule is inconsistent with BLM’s mandates under the Mineral Leasing Act and Federal Land Policy and Management Act. The discussion focuses on the Rescission Proposal’s unlawful definition of the waste, which is limited to natural gas losses that are otherwise profitable for operators to capture, and the proposal’s flawed approach to waste prevention, which unlawfully defers to widely divergent state standards.
- **Section IV (pp. 26-79)** sets forth the numerous ways in which the proposal is arbitrary and capricious. These include, among others, the Secretary’s failure to explain and ground in his statutory authority his proposal to reverse course and return to provisions similar to those that had long be ineffective in preventing waste. The discussion also addresses the lack of evidence supporting the Secretary’s purported concerns with the Waste Prevention Rule, including claims related to marginal wells, the flawed nature of the Secretary’s reliance on an “interim” social cost of methane, and other analytical flaws in the Secretary’s approach to assessing the impacts of his proposal. Finally, the Section provides a detailed analysis of the manifestly arbitrary and capricious nature of the Secretary’s proposal to defer to state waste prevention approaches on federal lands, which will produce widely divergent outcomes based solely on state boundaries and, in any event, is inherently uncertain and subject to future state revision.
- **Section V (pp. 79-85)** discusses provision-specific issues with the Rescission Proposal.
- **Section VI (pp. 86-89)** describes the inadequacies of the process utilized by the Secretary in rescinding the Waste Prevention Rule.
- **Section VII (pp. 89-124)** describes the ways in which the proposal violates the Secretary’s obligations pursuant to the National Environmental Policy Act (“NEPA”), including by (1) predetermining the outcome; (2) failing to consider a reasonable range of alternatives; (3) preparing an environmental assessment rather than an environmental impact statement; (4) not taking a hard look at the Rescission Proposal’s impacts to climate, tribal lands, and other resources; and (5) failing to analyze cumulative impacts.

II. Background

Nationwide, BLM manages, in trust for the American people, public lands and resources that “mak[e] up nearly a third of the nation’s mineral estate.”⁷ Oil and gas production from publicly owned lands and resources accounted for five and nine percent, respectively, of the total domestic production in fiscal year 2016.⁸ Royalties paid to the public, and shared with states and tribes, from these resources amounted to over \$1.9 billion.⁹ To ensure that the public receives a fair return on the resources that it owns, BLM must ensure that all companies developing publicly owned natural resources “use all reasonable precautions to prevent waste of oil or gas.” 30 U.S.C. § 225; *see id.* § 187 (requiring every lease on federally managed land to include a provision “for the prevention of undue waste” of the targeted resource). Recognizing that the available evidence overwhelmingly showed that waste in the form of venting, flaring and leaks of natural gas from oil and gas production was a pervasive problem, BLM promulgated the rule entitled *Waste Prevention, Production Subject to Royalties, and Resource Conservation*, 81 Fed. Reg. 83,008 (Nov. 18, 2016) (“Waste Prevention Rule”) – the majority of which BLM now seeks to rescind by proposing the *Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements*, 83 Fed. Reg. 7924 (Feb. 22, 2018) (“Rescission Proposal”).

Prior to adopting the Waste Prevention Rule, BLM had not amended its rules governing waste for more than 35 years. In promulgating the Waste Prevention Rule, BLM found that the data and studies showed that Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Lessees 4A (“NTL-4A”), the framework it had relied upon for decades to prevent waste, “neither reflects today’s best practices and advanced technologies, nor is particularly effective in minimizing waste of public materials.”¹⁰ This was demonstrated by the fact that between 2009 and 2015, 462 billion cubic feet (Bcf) of natural gas from federal leases was vented or flared – enough to serve 6.2 million households for a year.¹¹

In fact, NTL-4A’s inadequacy was evident as early as 2004, when the U.S. Government Accountability Office (“GAO”) began looking to identify opportunities for the federal government to reduce venting and flaring.¹² Subsequent investigations confirmed that waste was

⁷ BLM, Draft Environmental Assessment: Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements Proposed Rule 1 (2018) (“EA” or “2018 EA”).

⁸ 83 Fed. Reg. 7925.

⁹ 83 Fed. Reg. 7925

¹⁰ 81 Fed. Reg. 83017.

¹¹ 81 Fed. Reg. 83009.

¹² GAO, *Natural Gas Flaring and Venting: Opportunities to Improve Data and Reduce Emissions*, GAO-04-809 (July 2004).

a significant problem, as well as opportunities to control waste and the need for action by BLM to fulfill its responsibilities in managing the federal public oil and gas estate in the public interest. In 2008, GAO expressed concern about the royalty structure governing oil and gas production on Federally managed lands, and recognized that “because Interior ha[d] not comprehensively re-evaluated the federal oil and gas fiscal systems [since NTL-4A was promulgated], such a *comprehensive evaluation of the systems . . . [was] overdue*.”¹³ Finally, looking at the actual impact of BLM’s regulations on the waste of gas in 2010, GAO found that although BLM’s NTL-4A guidance limits some venting and flaring, “it does not address newer technologies or all sources of lost gas,” particularly because “[NTL-4A] is 30 years old and therefore does not address venting and flaring reduction technologies that have advanced since it was issued.”¹⁴ Moreover, GAO noted that NTL-4A, in effect, enabled “institutional inertia” by oil and gas lessees and operators, exacerbating venting and flaring waste.¹⁵ The relatively recent explosion in development, spurred by technological breakthroughs in hydraulic fracturing that were neither contemplated nor addressed by NTL-4A, only serve to further illuminate NTL-4A’s inadequacies in addressing waste from today’s oil and gas sector.¹⁶

NTL-4A’s failure to spur adoption of newer capture technologies was caused, in part, by BLM officials’ misplaced assumption that “industry would use venting and flaring reduction technologies if they made economic sense,” a failure that BLM staff later recognized.¹⁷ GAO, echoing this recognition of the institutional inertia of the oil and gas industry, found that:

because current guidance and regulations from BLM . . . do not require the minimization of all sources of vented and flared gas—although legislation exists authorizing them to require that waste on federal leases be minimized—operators may be venting and flaring more gas than should otherwise be allowed. In fact, we found that operators are not using available technologies in all cases to economically reduce vented and flared gas. BLM guidance has not kept pace with the development of economically viable capture technologies for a number of sources of lost gas. . . . BLM . . . [has] not used [its] authority in two situations where [it] could potentially further reduce venting and flaring. First, [it] has [not]

¹³ GAO, *Oil and Gas Royalties: The Federal System for Collecting Oil and Gas Revenues Needs Comprehensive Reassessment*, GAO-08-691 (September 2008), 8 (emphasis added).

¹⁴ GAO, *Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34, (Oct. 2010), 27.

¹⁵ *Id.* at 24.

¹⁶ See 81 Fed. Reg. 83009.

¹⁷ GAO, *Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34, (Oct. 2010), 27.

used its authority to minimize waste beyond relevant air quality standards by assessing the use of venting and flaring reduction technologies before production. Second, because BLM lacks data about the use of venting and flaring technologies for onshore leases . . . [it is] not fully aware of potential opportunities to use available technologies. Further, [BLM does not] take[] full advantage of newer infrared camera technology that can help to identify sources of lost gas.¹⁸

It is worth noting that in the seven years since these GAO findings, oil and gas production practices and technologies, and technologies to identify and help avoid waste, have continued to develop and advance. For example, the Methane Detectors Challenge, a partnership between the Environmental Defense Fund, oil and gas companies, U.S.-based technology developers, and other experts initiated in 2014, has led to a number of breakthrough technologies that allow for continuous monitoring for methane emissions and detection of leaks.¹⁹

In promulgating the Waste Prevention Rule to address the deficiencies of its preexisting oil and gas production requirements, BLM provided a broad and vitally important process to engage all stakeholders, offering forums in Colorado, New Mexico, North Dakota, and Washington, DC.²⁰ At each forum, BLM held a tribal outreach session in the morning and a public outreach session in the afternoon, and accepted informal comments generated as a result of the outreach sessions.²¹ BLM continued to consult with all stakeholders throughout the rule development process, including by having numerous meetings and calls with State representatives, individual companies, trade associations, and non-governmental organizations.²² After the proposed rule was published on February 8, 2016, the BLM conducted another round of outreach meetings in Farmington, New Mexico; Oklahoma City, Oklahoma; Denver, Colorado; and Dickinson, North Dakota, again with a tribal outreach session in the morning and a public outreach session in the afternoon, as well as a call-in number for the public to participate remotely.²³ The comment deadline for the Waste Prevention Rule was April 22, 2016, meaning stakeholders had 73 days to prepare comments, during which time BLM received approximately 330,000 comments from relevant stakeholders.²⁴

¹⁸ *Id.* at 32-33.

¹⁹ Environmental Defense Fund, *The Methane Detectors Challenge* (Dec. 2016), *available at* http://business.edf.org/files/2016/12/MDC-case-study_web.pdf?_ga=2.245656897.430597370.1524354297-1798095157.1512760866.

²⁰ 81 Fed. Reg. 83071.

²¹ 81 Fed. Reg. 83071.

²² 81 Fed. Reg. 83071.

²³ 81 Fed. Reg. 83071.

²⁴ 81 Fed. Reg. 83010.

The final rule was estimated to reduce flaring on public lands by “up to 49 percent relative to 2015 levels” once fully implemented,²⁵ while also reducing methane emissions by 175,000-180,000 tons per year (tpy)—a roughly 35 percent reduction from 2014 estimates—and was projected to generate roughly \$3-14 million per year in additional royalties.²⁶ Overall, using the peer-reviewed social cost of methane, BLM estimated the annual net benefits when the rule would be fully implemented in 2026 would be \$125-193 million (based on a 3 percent discount rate).²⁷

Yet despite the years of input from oversight agencies and numerous stakeholders that overwhelmingly showed that the NTL-4A framework was insufficient, BLM now proposes to revert back to the deficient NTL-4A framework, removing all of the Waste Prevention Rule’s waste-minimizing provisions from the books.²⁸ To justify this change, BLM proposes to redefine the meaning of “waste” in the MLA to a definition that considers only the value of the resource to the lessee and fails to account for federal and state governments’ interest in royalty revenues, the national interest in energy supplies, Congress’ interest (as expressed in the MLA) in ensuring public benefit from these publicly owned resources, and the public interest in these resources. Indeed, by proposing to rescind all of the waste-preventing measures of the Waste Prevention Rule, BLM ignores the huge cost of that waste to the public that owns those resources: BLM calculates that 299 Bcf of gas will be lost over ten years, and with it \$33 million in royalties that would otherwise be paid on that lost gas,²⁹ as well as the harms that accompany the release of up to 180,000 tons per year of methane, 267,000 tons per year of volatile organic compounds (“VOC”), and 2,030 tons per year of hazardous air pollutants (“HAPs”).³⁰ Despite this huge cost, and in strong contrast with the process it undertook in promulgating the Waste Prevention Rule, BLM has refused to hold any public hearings or tribal outreach sessions regarding the Rescission Proposal.³¹

As explained in more detail below, BLM’s proposed rescission of the waste preventing measures of the Waste Prevention Rule is contrary to its statutory duties, arbitrary and capricious, and otherwise unlawful.

²⁵ 81 Fed. Reg. 83011.

²⁶ 81 Fed. Reg. 83014.

²⁷ 81 Fed. Reg. 83014.

²⁸ 83 Fed. Reg. 7928.

²⁹ 83 Fed. Reg. 7939.

³⁰ EA at 17, 19.

³¹ *See, e.g.*, Comments of Center for Biological Diversity, et al. (Mar. 22, 2018), Docket No. BLM-2018-0001-3325.

III. BLM's Proposed Rescission Fails to Comply With BLM's Statutory Duties

A. **BLM Has Failed to Comply with Its Statutory Duty to Prevent Waste on All Federally-Managed Leases**

Under the MLA, Congress requires every lease of federal public lands and resources to include a provision “for the prevention of undue waste” of the targeted resource. 30 U.S.C. § 187. BLM must ensure that operators are subject to the additional condition that they will “use all reasonable precautions to prevent waste of oil or gas developed in the land” 30 U.S.C. § 225. Moreover, recognizing that lessees are developing *public* resources, the MLA specifies that leases must provide for “the protection of the interests of the United States . . . and for the safeguarding of the public welfare.” *Id.* § 187.

With this language, Congress sent a clear signal that it was concerned with the potential for waste of public resources and compelled BLM to proactively address this problem. Congress mandated that lessees use “all” reasonable precautions. Congress’ use of the word “all” suggests that it intended BLM to aggressively control waste of publicly owned resources—i.e., to require “all” of the precautions that are “reasonable.” *See Halliburton, Inc. v. Admin. Review Bd.*, 771 F.3d 254, 266 (5th Cir. 2014) (ruling that statutory term “all relief necessary” authorized broad remedies against defendant because “we think Congress meant what it said. All means all.” (quotation omitted)). Its use of the word “reasonable” also signals that it wanted BLM to look at the problem broadly, not the narrow interests of one of among numerous stakeholders. *Cf. Michigan v. EPA*, 135 S. Ct. 2699, 2709 (2015) (concluding that the term “appropriate” could not be read narrowly to exclude a relevant factor, and comparing the statute’s “broad reference to appropriateness” to the “expansive word ‘reasonable’”). And Congress’s command to use all reasonable “precautions”—and indeed the very presence of the mandate within the statute—suggests that Congress wanted BLM to be proactive in preventing waste—i.e., to address a problem that operators, based on their own private incentives, were not addressing.

The legislative history bears out this focus on the *public’s* interest, and a concern that regulation of private actors was necessary. Congress emphasized that:

Careful provisions relative to continued development to prevent waste and speculation are inserted in the bill that will not work too great a hardship on the developer and that will at the same time *practice conservation of this resource* that is so universally used and in which we all feel a keen *interest in the prevention of its waste in any form.*

H.R. Rep. No. 206, 65th Cong., at 6 (1917) (emphasis added). With respect to the incentives of lessees, Congress remarked that “[t]he legislation provided for herein . . . will [help] prevent waste

and other lax methods that have grown up in the administration of our public land laws.” H.R. Rep. No. 65-1138, at 19 (1919). Reflecting on the MLA’s legislative history, the Supreme Court echoed this notion, finding that “conservation through control was the dominant theme of the [MLA] debates.” *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (citing H.R. Rep. No. 398, 66th Cong., 1st Sess. 12-13; H.R. Rep. No. 1138, 65th Cong., 3d Sess. 19). See *Union Oil Co. of California v. Morton*, 512 F.2d 743, 747 (9th Cir. 1975) (“Oil and gas deposits . . . are precious resources belonging to the entire nation. Congress, although encouraging the extraction of these resources by private companies, provided safeguards to insure that their exploitation should inure to the benefit of all.”).

This purpose is further illuminated by taking into account the context of oil and gas development at the time the MLA was passed. In the early 20th century, Congress sought to stop monopolistic oil and gas companies from developing oil on federally-managed land at the expense of the public that owned it:

Everyone acquainted with oil production knows how almost totally inadequate the placer law is for oil development. Under the law as it now stands eight citizens can form themselves into an association and take up as such 160 acres. They may then, in succession, without limit and without restraint, take up as many more 160-acre tracts as they like. By this almost criminally lax method the valuable oil deposits of the country, now universally used by rich and poor alike, from cookstove to automobile and from automobile to battleship, have crept away and either have or will find their way into monopolistic control, which means exploitation, extortion, and abuse.

H.R. Rep. No. 206, 65th Cong., at 5 (1917). Congress’ intent was to reward developers who developed the resources in a manner that conserved, or prevented waste of, the resources by allowing them to develop the publicly owned oil or gas.³²

It is in the context in which the term “waste” finds itself in the statute and in light of this history that its meaning must be understood. The fundamental principle stands: the MLA’s requirement to prevent waste is meant to prevent oil and gas operators from profiting at the expense of the public who own the enriching resources. Consequently, the lens through which

³² See H.R. Rep. No. 206, 65th Cong., at 5-6 (1917) (“Objects of bill.—(1) To free both producer and consumer from monopoly; (2) to insure competition; (3) to prevent speculation and secure in its stead bona fide prospecting; (4) to protect the prospector; (5) to reward the prospector who does the drilling; (6) to insure an adequate supply of fuel oil for the Navy, which has abandoned the use of coal and will from necessity use large and larger quantities of oil as long as we have a navy”).

“waste” should be viewed is that of *conservation*, not operator economics. This is further consistent with the primary definition of waste in Howard R. Williams & Charles J. Meyers, *Manual of Oil and Gas Terms* 1046 (14th ed. 2009) as “the ultimate loss of oil or gas,” as well as that treatise’s definition of physical waste as “the loss of oil or gas that could have been recovered and put to use,” including “the flaring of gas.” *Id.*³³

In promulgating the Waste Prevention Rule, BLM recognized this principle. It concluded that:

A focus on oil development rather than gas capture may be a rational decision for an individual operator, but it does not account for the broader impacts of venting and flaring, including the costs to the public of losing gas that would otherwise be available for productive use, the loss of royalties that would otherwise be paid to States, tribes, and the Federal Government on the lost gas, and the air pollution and other impacts of gas wasted through venting and flaring. . . . Thus, *a decision to vent or flare that may make sense to the individual operator may constitute an avoidable loss of gas and unreasonable waste* when considered from a broader perspective and across an entire field.

81 Fed. Reg. 6616, 6638 (Feb. 8, 2016) (emphasis added).

In adopting the Waste Prevention Rule, BLM determined that operators were not taking “all reasonable precautions to prevent waste” or preventing “undue waste.” Ultimately, based on an extensive record, BLM determined that additional protections were necessary. BLM defined “reasonable precautions” based on technologies that are technically achievable and in use by the industry. Indeed, the measures established by the Waste Prevention Rule are based on technologies and practices that are in use nationwide.

³³ Notably, statutes in oil- and gas-producing states incorporate definitions of waste that focus on prevention of avoidable natural gas losses and not on an operator’s economic profitability. Like the MLA’s “reasonable precautions” standard, state statutes prohibit, for example, “unnecessary or excessive” “loss or destruction” of gas or oil, but none incorporate a specific economic definition. Mont. Code Ann. § 82-11-101(16)(a)(iii); *see also* Colo. Rev. Stat. § 34-60- 103(11)-(13); N.D. Cent. Code § 38-08-02(19); N.M. Code R. § 19.15.2.7(W)(1); Utah Code Ann. § 40-6-2(27); Wyo. Stat. Ann. § 30-5-101. Indeed, the Wyoming Supreme Court has found that Wyoming’s waste definition specifically *does not include* economic waste. *Larsen v. Oil & Gas Conservation Comm’n*, 569 P.2d 87, 92–93 & n.4 (Wyo. 1977) (finding Wyoming Oil and Gas Conservation Commission erred in applying a definition of waste that evaluated the “economic position of oil and gas producers and their internal financial ability or inability to drill all of the well locations” when establishing drilling units).

Now, however, in order to support its decision to rescind the Waste Prevention Rule's waste-preventing provisions, BLM proposes for the first time to define "waste" solely from the perspective of an individual operator's profitability. Specifically, under BLM's new definition, whether lost gas is considered waste would be contingent upon an operator's compliance costs being less than the monetary value of the resource they are developing. 83 Fed. Reg. 7946 (proposed 43 C.F.R. § 3179.3). Whether or not the "precautions" actually result in the prevention of natural gas loss through venting, flaring, or leaking (and the Rescission Proposal would increase natural gas waste by 299 Bcf) is one of the many considerations that is apparently irrelevant under BLM's new definition. BLM's intent in defining "waste" in this manner is to "codify [its] policy determination that it is not appropriate for 'waste prevention regulations to impose compliance costs greater than the value of the resources they are expected to conserve.'" 83 Fed. Reg. 7,933. Thus, according to BLM, under the proposed rule, whether vented, flared, or leaked gas is "waste" depends on the highly volatile price of oil or natural gas on any given day and the self-interested decisions made by a particular lessee or operator. In other words, BLM proposes to define "waste" from the perspective of the lessee of the land upon which the resource is located, and not the lessor, or the public. This is precisely contrary to Congress's expressed intent in enacting section 225. BLM has failed to provide a reasoned basis – apart from maximizing the profits of operators – that justifies why technically achievable measures that prevent the loss of gas and are already widely used are no longer considered to be "reasonable precautions to prevent waste." BLM's definition of waste is wholly inconsistent with the MLA's focus on the public interest, and is arbitrary and capricious.

As explained above, the plain language and legislative history of the MLA communicate Congress's clear intent in promulgating MLA section 225 to protect the *public's* interest, and not individual lessees' or operators' profitability. Indeed, the zeal for profit at the expense of the public interest was the very motivation behind its enactment. By proposing a regime that defines waste as only what is profitable for an operator to capture, while also proposing to defer entirely to existing state regulations (where they exist), BLM has effectively ensured that section 225 has no independent force. BLM's interpretation is manifestly unlawful as it reads section 225 out of the MLA.

Moreover, BLM's new proposed definition is arbitrary and capricious and essentially unworkable because it would depend on what gas prices are on any given day. It also does not specify whether the value of captured gas must immediately exceed compliance costs or do so at some unspecified time in the future. In this way, BLM's proposed definition is an unreasonable construction of the statute, because it produces infinitely variable results over time and across different operators and is likewise disconnected from the statutory purposes of the MLA. Indeed, a "reasonable precaution" to prevent waste on a federal lease does not change depending on the day's gas prices, or on how the operator's finances are looking at any given moment in time. Perhaps in recognition of this, and as explained further below, the Rescission Proposal does

not actually match BLM's new definition of "waste"—for example, should the price of gas or waste prevention technologies change such that the compliance cost would be less than the cost savings from recovered gas, the Rescission Proposal does not appear to require the technology to be used.

Additionally, as also discussed in greater detail below, the Rescission Proposal largely delegates BLM's mandatory duty to prevent waste of public resources to a patchwork of state regulations. But BLM nowhere makes a finding that each State's individual regulatory regime constitutes "all reasonable precautions to prevent waste," even under BLM's new (and arbitrary) definition. It is arbitrary to conclude that what constitutes all reasonable precautions to prevent waste varies from state to state purely on the basis of artificial political boundaries that have little to no bearing on federal statutory duties or authorities, and moreover, BLM has not explained how such deference to state regulations aligns with its new definition.

Furthermore, BLM's new definition of "waste" is inconsistent with its own prior interpretations. Indeed, BLM's proposed definition of waste is entirely new, and is not a reversion to NTL-4A. First, NTL-4A does not define "waste." Second, BLM's understanding of "waste" under NTL-4A was broader than BLM's new proposed definition, as can be construed from the requirements of NTL-4A. For example, NTL-4A flatly prohibits flaring or venting of gas from a gas well, without applying any economic test at all. With respect to flaring or venting of gas from an oil well, NTL-4A applies an economic test, but not the one that BLM now includes in its proposed definition of waste. To approve an application for venting or flaring of oil well gas, NTL-4A provides that the Supervisor must find the application justified by either (1) an evaluation report making certain demonstrations; or (2) an action plan to eliminate venting or flaring within one year. The evaluation report must demonstrate several things: (1) "that the expenditures necessary to market or beneficially use such gas are not economically justified"; *and* (2) that conservation of the gas "would lead to the premature abandonment of recoverable oil reserves *and* ultimately to a greater loss of equivalent energy than would be recovered if the venting or flaring were permitted to continue" (emphasis added). While the first of these factors allowed the Supervisor to consider the value of the gas relative to the costs of conservation, the second two factors are clearly broader. In other words, even if the value of the gas to be conserved were less than the cost to the operator of conservation, conservation would still be required as long as those additional costs were not sufficient to cause the operator to prematurely abandon the lease. Conservation also would still be required if such abandonment would not result in a greater loss of equivalent energy than the failure to conserve. In contrast to BLM's proposed new definition, neither of these two latter elements requires the value of the resource to exceed the cost of conservation.

In addition, NTL-4A requires that in "evaluating the feasibility of requiring conservation of the gas, the total leasehold production, including both oil and gas, as well as the economics of

a field wide plan shall be considered by the Supervisor in determining whether the lease can be operated successfully if it is required that the gas be conserved.” This language means that even if the value of the gas resource were outweighed by the cost of its conservation, as long as the overall value of the oil and gas together still made the lease profitable, conservation would be required. Finally, the action plan prong of the NTL-4A test does not take the relative value of the gas versus the cost of the plan into account at all. As discussed in these comments, in practice in recent years, BLM field staff appear often to have failed to require any of the showings mandated by NTL-4A, but BLM also has neither enunciated, nor appeared to apply, a different specific definition of waste from that implied by NTL-4A. Thus, BLM’s new proposed definition of waste is not only an irrational reinterpretation of the MLA, it is also inconsistent with apparent past interpretations, as reflected in NTL-4A.

Finally, the Rescission Proposal itself does not even conform to BLM’s new definition. First, the Rescission Proposal proposes to rescind almost all of the Waste Prevention Rule’s flaring, venting, and leak requirements across the board, regardless of whether the cost of the requirement exceeds the value of the resource saved – i.e., regardless of whether those requirements will actually prevent waste as defined under BLM’s proposed definition. For example, the RIA finds that the requirement to use low bleed pneumatic controllers will, overall, save operators money by conserving gas that is worth more than the estimated cost of compliance.³⁴ Yet the Rescission Proposal proposes to rescind this requirement entirely.³⁵ Likewise, the Rescission Proposal prohibits flaring or venting of gas well gas, except when it is unavoidably lost under specified circumstances, regardless of whether the value of the gas outweighs the costs of conservation. The Rescission Proposal also ignores that under the NTL-4A, which the Proposal would largely revert to, lessees failed to take waste prevention precautions, even when the cost savings from such measures would exceed costs. *See infra* § 4.A.1.

BLM’s new definition of “waste” is contrary to the language, legislative history, and purpose of the statute and is entirely unworkable. The Rescission Proposal fails to fulfill BLM’s duty to require operators to “use all reasonable precautions to prevent waste” of natural gas from federal and Indian leases.

B. BLM Ignores its Statutory Duties under the Federal Land Policy and Management Act

The MLA is not the only statute that requires BLM to reduce wasteful venting, flaring, and leaking from oil and gas operations on public lands. The Federal Land Policy and

³⁴ 2018 RIA at 47, table 4.4 (showing that pneumatic controller provisions result in greater cost savings to operators than their costs).

³⁵ 83 Fed. Reg. at 7928.

Management Act (FLPMA) also requires the agency to consider, regulate, and mitigate the environmental impacts of oil and gas operations on public lands. The 2016 Waste Prevention Rule recognized the significant environmental impacts of waste and fulfilled BLM's FLPMA obligations to protect air quality and other environmental values on public lands. BLM has not provided a reasoned explanation for why the proposed Rescission Rule is consistent with those obligations. Indeed, BLM has ignored its FLPMA mandates altogether.

FLPMA requires BLM to base the management of our public lands and minerals on multiple use and sustained yield principles. 43 U.S.C. §§ 1701(a)(7), 1702(c) and (h), and 1732(a). The 2016 Waste Prevention Rule implements, in part, FLPMA's multiple-use mandate. *See Wyoming v. U.S. Dep't of Agric.*, 661 F.3d 1209, 1266–69 (10th Cir. 2011) (affirming Forest Service Roadless Rule as exercise of similar multiple-use management statute). “Under the multiple use requirement, BLM must strike a balance that avoids ‘permanent impairment of the productivity of the land and the quality of the environment,’ weighing the ‘relative values of the resources.’” *Utah v. U.S. Dep't of Interior*, 535 F.3d 1184, 1187 (10th Cir. 2008) (quoting 43 U.S.C. § 1702(c)). “It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses.” *N.M. ex rel. Richardson v. BLM*, 565 F.3d 683, 710 (10th Cir. 2009); *see also Utah Shared Access All. v. Carpenter*, 463 F.3d 1125, 1129 (10th Cir. 2006) (discussing “BLM's duty to protect the environment” under FLPMA).

There is no doubt that Congress intended environmental protection—and air quality specifically—to be a crucial component of applying the multiple use management framework. The BLM must manage the public lands in a manner that will protect scientific, scenic, historical, ecological, environmental, *air and atmospheric*, water resource, and archeological values, and it must “preserve and protect certain lands in their natural condition.” 43 U.S.C. § 1701(a)(8) (emphasis added). As the Tenth Circuit has explained, § 1701(a)(8) “requires that the public lands be managed for many purposes . . . and for many members of the public.” *Pub. Lands Council v. Babbitt*, 167 F.3d 1287, 1299–1300 (10th Cir. 1999). FLPMA also declares a Congressional policy that the federal government must “receive fair market value of the use of the public lands and their resources.” 43 U.S.C. § 1701(a)(9). This bolsters BLM's authority, and obligation, to prevent waste of publicly-owned resources.

FLPMA's legislative history makes clear that Congress intended it to be an environmental protection statute. A Joint Conference Report explained that FLPMA's purpose is to “provid[e] for the management, *protection*, development, and enhancement of the public lands; and for other purposes.” H.R. Rep. 94–1724, at 1 (1976) (Conf. Rep.) (emphasis added). Senator Jackson of Washington—the bill's principal sponsor—explained that the statute was necessary because of Congress's previous failure “to provide adequate statutory protection for the greatest public land resource—the national resource lands.” 122 Cong. Rec. 4,422–23 (1976). He further expressed his support for the bill's stated policy goal of “assur[ing] the environmental

quality of such lands for present and future generations.” *Id.* Another bill sponsor, Senator Haskell of Colorado, lamented “the vacuum created by the absence of this authority, the unnecessary waste and destruction of our country’s most valuable resource—its land—is almost awesome in its dimensions.” 121 Cong. Rec. S1232 (daily ed. Jan. 30, 1975). Similarly, in the House of Representatives, Representative Clausen of California praised the bill because it “recognize[d] the crucial need for a balance between environmental protection and management of lands on the basis of multiple use and sustained yield.” 122 Cong. Rec. 34,127–18 (1976).

BLM is also required to prevent “unnecessary or undue degradation” (“UUD”) of the public lands. 43 U.S.C. § 1732(b); *see also* *Ctr. for Biological Diversity v. U.S. Dep’t of the Interior*, 623 F.3d 633, 644 (9th Cir. 2010) (“FLPMA and its implementing regulations require the Secretary to ‘take any action necessary’ to prevent [unnecessary or undue degradation].”). By its plain language, the UUD provision authorizes BLM to promulgate protective regulations. *See Manning v. United States*, 146 F.3d 808, 814–15 (10th Cir. 1998) (referencing UUD mandate as one basis for Interior Department mining regulations). Written in the disjunctive, BLM must prevent both “unnecessary” and “undue” degradation. *Mineral Policy Ctr. v. Norton*, 292 F. Supp. 2d 30, 43 (D.D.C. 2003). UUD is “something more than the usual effects anticipated” from appropriately mitigated development.” *Theodore Roosevelt Conservation P’ship v. Salazar*, 661 F.3d 66, 76 (D.C. Cir. 2011) (quoting *Biodiversity Conservation Alliance*, 174 IBLA 1, 5-6 (2008)). In the context of mining, unnecessary is “that which is not necessary for mining” and undue is “that which is excessive, improper, immoderate or unwarranted.” *Utah v. Andrus*, 486 F. Supp. 995, 1005 n.13 (D. Utah 1979). FLPMA “vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.” *Mineral Policy Ctr.*, 292 F. Supp. 2d at 42.³⁶

³⁶ Pursuant to its FLPMA authorities, BLM often regulates oil and gas emissions through its land use planning or other orders. *See, e.g.*, Onshore Order No. 6, 55 Fed. Reg. 48,958, 48,968 (Nov. 23, 1990); BLM Pinedale & Rock Springs Field Offices, *Final Environmental Impact Statement: Jonah Infill Drilling Project Sublette County, Wyoming* at A-3, 4-3 to 4-4 (Jan. 2006), <http://www.blm.gov/style/medialib/blm/wy/information/NEPA/pfodocs/jonah.Par.6205.File.dat/10chap4.pdf>; Pinedale Anticline Oil and Gas Exploration and Development Project (PAPA) Record of Decision (ROD) (Sept. 12, 2008), https://eplanning.blm.gov/epl-front-office/projects/nepa/77515/103659/126955/SEIS_ROD.pdf; BLM Tres Rios Field Office, *Resource Management Plan and Record of Decision* at II-63, II-64 (Feb. 27, 2015), http://www.blm.gov/style/medialib/blm/co/field_offices/san_juan_public_lands/land_use_planning/approved_lrm.Par.66402.File.dat/Part%20II%20-%20RMP%20Chapter%202.pdf; BLM Vernal Field Office, *Greater Natural Buttes Final Environmental Impact Statement* at 4-15

Although BLM recognized in the Waste Prevention Rule that it was fulfilling its FLPMA duty to protect air and atmospheric values, as well as other environmental values, on public lands, the Rescission Proposal abandons, without reasoned explanation, the provisions of the Waste Prevention Rule that provide these protections. *See Fed. Commc'ns Comm'n v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). (“[A] reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy.”). In fact, the Rescission Proposal is silent on FLPMA’s environmental protection requirements. The Rescission Proposal mentions FLPMA only once, citing 43 U.S.C. § 1740 which relates to BLM’s rulemaking authority, not environmental protection. The Rescission Proposal does not mention FLPMA’s requirement to protect air and other environmental values, *id.* § 1701(a)(8), or the UUD mandate, *id.* § 1732(b). The Rescission Proposal mentions multiple use only in passing in discussing the proposed regulation’s purpose (and this statement is unchanged from the 2016 Rule), with no other consideration of this requirement of public land management. 83 Fed. Reg. at 7933, 7946. Fundamentally, nowhere does BLM reconcile its Rescission Proposal—which BLM concedes will lead to the release of up to 180,000 tons per year of methane, 267,000 tons per year of VOCs, and 2,030 tons per year of HAPs—with the statutory mandates provided by FLPMA.

This shortcoming is even more problematic because these factual findings underlying BLM’s new policy contradict the findings that underlay the Waste Prevention Rule. *See Perez*, 135 S. Ct. at 1208, 1209. The impacts BLM admits in the EA and the agency’s complete lack of discussion of environmental impacts in the preamble stand in stark contrast to BLM’s analysis of the Waste Prevention Rule’s environmental benefits. As the BLM pointed out in the Waste Prevention Rule:

. . . the wasted gas may harm local communities and surrounding areas through visual and noise impacts from flaring, and contribute to regional and global air pollution problems of smog, particulate matter, and toxics (such as benzene, a carcinogen). Finally, vented or leaked gas contributes to climate change, because the primary constituent of natural gas is methane, an especially powerful greenhouse gas (GHG), with climate impacts roughly 25 times those of carbon dioxide (CO₂), if measured over a 100-year period, or 86 times those of CO₂, if measured over a 20-year period. Thus, measures to conserve gas and avoid waste may significantly benefit local communities, public health, and the environment.

(March 2012),

http://www.blm.gov/style/medialib/blm/ut/vernal_fo/planning/greater_natural_butttes/gnb_feis_ii.Par.16945.File.dat/d_Chapter_4.pdf.

81 Fed. Reg. at 83,009.

Unlike the single mention of FLPMA in the current Federal Register notice, in the Waste Prevention Rule BLM mentioned FLPMA 17 times. *See* 81 Fed. Reg. 83008³⁷ In 2016, BLM recognized FLPMA's UUD and multiple use mandates and used them as a basis for adopting the 2016 Rule. *Id.* at 83,020. Another basis for adopting the Waste Prevention Rule was FLPMA's policy to "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archeological values." 43 U.S.C. § 1701(a)(8). In the Waste Prevention Rule and its EA, BLM also gave substantial consideration to the need to protect air and atmospheric values on public lands from climate changing gases and other air pollutants. 81 Fed. Reg. at 83009, 83040. The Rescission Proposal does not even attempt to provide a reasoned explanation for its departure from these 2016 factual and legal findings.

The Waste Prevention Rule also included full recognition of what the multiple use mandate means, unlike the failure to consider these questions in the Rescission Proposal. In the Waste Prevention Rule, BLM recognized that it was required to manage the public lands under the principles of multiple use and sustained yield, and that this concept included environmental resources. 81 Fed. Reg. at 83,020. It then explained in detail what FLPMA means by multiple use:

Multiple use is a "combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources . . ." Multiple use also requires resources to be managed in a "harmonious and coordinated" manner" without "permanent impairment to the productivity of the land and the quality of the environment." Significantly, FLPMA admonishes the Secretary to consider "the relative values of the resources and not necessarily . . . the combination of uses that will give the greatest economic return or the greatest unit output."

See id. (citing 43 U.S.C. § 1702(c) (defining multiple use)). BLM further explained that:

In its traditional role as manager of the public lands and steward of publicly owned resources, BLM must regulate the development of federally owned oil and gas deposits pursuant to principles of multiple use and sustained yield. Under those principles, BLM may consider air quality and GHG emissions when deciding how to regulate mineral development operations. FLPMA expressly

³⁷ Mentioning FLMPA on the following pages: 83009, 83019, 83020, 83037, 83050, 83055, 83056, 83060, and 83062.

declares that BLM should balance the need for domestic sources of minerals against the need to protect the quality of “air and atmospheric” resources.

Id. at 83,037. Again, the Rescission Proposal fails to provide a reasoned explanation for ignoring these considerations that were important in developing the Waste Prevention Rule.

Rather than explain why the proposed Rescission Proposal is consistent with its FLPMA obligations, BLM claims it has “inherent authority” to weaken the Waste Prevention Rule. 83 Fed. Reg. at 7927. But FLPMA does not provide BLM with inherent authority to reconsider its decisions without constraints—it provides specific standards and obligations for the agency to manage and protect public lands. Although BLM may change its regulations, consistent with these standards, it must at least explain why the change *is* consistent with FLPMA’s management and protection standards, which it has failed to do here.

C. BLM Cannot Rely on State and Tribal Regulations as a Substitute for Complying with its Statutory Obligations.

The Rescission Proposal unlawfully abdicates BLM’s MLA, FLPMA, and IMLA responsibilities to states and tribes.³⁸ BLM is explicit that “[i]t is the intent of proposed § 3179.201(a) to defer to State and tribal statutes and regulations.” 83 Fed. Reg. at 7937. Under the Rescission Proposal, only state or tribal regulations will govern whether venting or flaring is royalty free (and thus whether operators have taken all reasonable precaution to prevent waste), except in states or tribal jurisdictions with no regulations, in which case BLM will apply requirements similar to the NTL-4A framework. But agencies are not permitted to delegate their statutory duties to third parties that do not share those duties and responsibilities. Critically, here, BLM is charged with regulating minerals that are owned by the public at large and that it is charged to manage on behalf of the entire nation. BLM cannot lawfully rely on states and tribes, which are not subject to the MLA, FLMPA, or IMLA, to meet the agency’s obligations under those statutes.

In the Rescission Proposal, BLM expressly delegates its authority to regulate routine flaring of associated oil well gas in 43 C.F.R. § 3197.201. *See* 83 Fed. Reg. at 7937. Section 3179.201(a) “establishes State or tribal rules, regulations, and orders as the prevailing regulations for the venting and flaring of oil-well gas on BLM-administered leases, unit participating areas (PAs), or communitization agreements (CAs).” Thus, instead of the Waste Prevention Rule applying a uniform federal standard for what constitutes wasteful venting and flaring, BLM will determine whether flaring is royalty free—because under BLM’s definition it is a “reasonable”

³⁸ As discussed in Section IV.E, BLM’s decision to defer to state regulations is also arbitrary and capricious because “reasonable precautions” as used in the MLA cannot mean different things in different states, and such deference creates inconsistent results.

form of waste—by “defer[ring] to State and tribal statutes and regulations.” *Id.* There are only two exceptions to this total deferral to state regulations: when venting and flaring is inconsistent with BLM’s trust responsibility to tribes, and if a state or tribe has no regulations at all, in which case BLM proposes to codify NTL-4A as a “backstop.” *Id.*

Additionally, throughout the Rescission Proposal preamble, BLM is explicit that it has chosen to delegate its authority to states and tribes and will defer to their regulations. *See, e.g.*, 83 Fed. Reg. at 7930 (“In place of the 2016 final rule’s capture percentage requirements, the proposed rule would address the routine flaring of associated gas by deferring to State or tribal regulations where possible and codifying the familiar NTL-4A standard for royalty-free flaring as a backstop where no applicable State or tribal regulation exists.”); 7930 (choosing to rescind regulation on coordinating with state regulatory authority because “BLM is proposing to revise subpart 3179 in a manner that defers to State and tribal requirements with respect to the routine flaring of associated gas.”); 7933 (“BLM is proposing to rescind § 3179.401 [variance] because it believes that the variance process established by this section will no longer be necessary in light of the BLM’s proposal to codify NTL-4A standards and to defer to State and tribal regulations for the routine flaring of associated gas, as explained in the discussion of proposed § 3197.201.”); 7937 (“It is the intent of proposed § 3179.201(a) to defer to State and tribal statutes and regulations.”).

An agency delegates its authority when it shifts to another party the determination of statutory compliance, or where the agency abdicates its final reviewing authority. *Fund for Animals v. Kempthorne*, 538 F.3d 124, 133 (2d Cir. 2008). “[S]ubdelegations to outside parties are assumed to be improper absent an affirmative showing of Congressional authorization.” *G.H. Daniels III & Assocs., Inc. v. Perez*, 626 F. App’x 205, 212 (10th Cir. 2015) (quotation omitted). “[W]hen an agency delegates power to outside parties, lines of accountability may blur, undermining an important democratic check on government decision-making.” *U.S. Telecom Ass’n v. Fed. Comm’n’s Comm’n*, 359 F.3d 554, 565 (D.C. Cir. 2004). “The fact that the subdelegation . . . is to state [governments] rather than private organizations does not alter the analysis.” *Id.* at 566. Courts will not “read broad authority to subdelegate into [mineral leasing] statutes, absent clear proof of legislative intent to relieve the Secretary of a portion of his duties.” *Assiniboine & Sioux Tribes of Fort Peck Indian Reservation v. Bd. of Oil & Gas Conservation of Mont.*, 792 F.2d 782, 796 (9th Cir. 1986) (*Assiniboine*).

More than 30 years ago, a court struck down a similar BLM effort to unlawfully delegate its authority over mineral development. In *Assiniboine*, BLM signed a cooperative agreement with Montana providing that mineral developers seeking permits to develop tribal lands would apply for permits with the state, rather than BLM. 792 F.2d at 786. Even though BLM, not the state, had jurisdiction over mineral development on the tribal lands, under the applicable agreement, the state would handle the permit applications, subject to “sign-off” by the federal

government. *Id.* The Ninth Circuit held that this arrangement in which BLM “act[s] as a rubber stamp” constituted an unlawful delegation of BLM’s authority under the IMLA. *Id.* at 794–95. The court concluded that the subdelegation to the state was inappropriate because it had “no independent jurisdiction” over tribal lands. *Id.* There was no “express congressional authorization for a subdelegation” under the IMLA, and no evidence of clear Congressional intent to allow the Secretary to delegate his “comprehensive responsibilities” over mineral leasing, and the court therefore set aside the agreement. *Id.* at 796.

For the same reason, BLM’s current proposal to rely on state and tribal standards and regulations for venting and flaring, rather than making its own determinations about what “waste” is reasonable and what degradation is “unnecessary and undue,” violates the law. There is no question that BLM has delegated its authority to states, because “deferring” to state regulations indicates that it has shifted to “another party the determination of statutory compliance.” *Fund for Animals*, 538 F.3d at 133. BLM has not shown that Congress affirmatively authorized it to delegate its authority under the MLA, FLPMA, or the IMLA to states or tribes, *see G.H. Daniels III*, 626 F. App’x at 212, and indeed, there is ample evidence that Congress did not intend for BLM to do so, *see Assiniboine*, 792 F.2d at 796. Nor does the fact that BLM is delegating its authority to state and tribal governments, as opposed to a private entity or some other third party, excuse its violation. *U.S. Telecom Ass’n*, 359 F.3d at 566.

Moreover, when BLM finalized the Waste Prevention Rule in 2016, it repeatedly recognized that it could not delegate its responsibilities under the MLA, FLPMA, IMLA, and other statutes to states or tribes. BLM explained that it was “critical . . . that neither . . . State [nor] tribal requirements obviate the need for this rule [because] the BLM has an independent legal responsibility and a proprietary legal interest as a land and resource manager to oversee and minimize waste from oil and gas production activities conducted pursuant to Federal and Indian . . . leases, and to ensure that development activities on Federal and Indian leases are performed in a safe, responsible, and environmentally protective matter.” 81 Fed. Reg. at 83,010. BLM recognized that it “must carry out its responsibility, delegated by Congress, to ensure that the public’ resources are not wasted.” *Id.*

Describing the Waste Prevention Rule’s variance provisions, BLM recognized that its operating statutes did not authorize it to defer to state and tribal regulations. It explained that “in contrast to situations in which a Federal agency is *authorized* by law to formally delegate administration and enforcement of a regulatory program to a State agency[,] [h]ere, the BLM is not delegating its regulatory or enforcement authority to the State, locality, or tribe.” 81 Fed. Reg. at 83,036 (emphasis added). As a result, under the variance provision, “BLM remains responsible for ensuring that operators comply with Federal requirements, or in this case, State, local, or tribal requirements that the BLM deems to be an acceptable substitute for the Federal requirements.” *Id.*

BLM has failed to justify this 180-degree reversal on whether it may delegate its legal authority. *See Fed. Commc'ns Comm'n v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009) (*FCC v. Fox*). BLM emphasizes that “some States with significant Federal oil and gas production have similar regulations addressing the loss of gas from [regulated] sources.” 83 Fed. Reg. at 7926; *see also id.* at 7927 (explaining that “states with the most significant BLM-managed oil and gas production place restrictions or limitations on gas flaring from oil wells”). Throughout the preamble, BLM selectively identifies examples of states with regulatory requirements that BLM contends are “similar” to one or another of the Waste Prevention Rule’s provisions. *See, e.g.*, 83 Fed. Reg. at 7926 (discussing Colorado’s and California’s methane regulations and Utah’s general approval order for new and modified well sites and tank batteries), 7927 (discussing North Dakota’s flaring regulations), 7929 (discussing North Dakota’s and New Mexico’s gas capture plan requirements and Utah, Wyoming’s flaring information submission requirements).³⁹ Underscoring that BLM has selectively identified only some regulatory areas in which only some states have what BLM contends are similar regulations, BLM does not acknowledge, let alone address, clear and significant differences between the Waste Prevention Rule and state or tribal regulations.

BLM does not even attempt to analyze, on a provision-by-provision basis, how regulations in each state and tribal jurisdiction compare to the Waste Prevention Rule in terms of reductions in lost gas. Nor does BLM consider, on a state-by-state basis, whether each state’s regulations, to the degree they exist, constitute all reasonable precautions to prevent waste. Instead, BLM merely provides a vague, conclusory explanation that it analyzed state venting and flaring regulations in the top 10 federal oil and gas-producing states and found that each state has “statutory or regulatory restrictions on venting and flaring that are expected to constrain the waste of associated gas from oil wells.” *Id.* at 7937.

But the mere fact that state and possibly some tribal (BLM does not discuss or even identify any tribal regulations) regulations *exist* does not mean that they constitute “all reasonable precautions to prevent waste,” in particular as understood in the context of the MLA’s broad command that BLM manage publicly-owned oil and gas resources in the public interest. As BLM recognized in 2016, “no State or tribe has established a comprehensive set of requirements addressing all three avenues for waste—venting, flaring, and leaks—and only a few States have significant requirements in even one of these areas.” 81 Fed. Reg. at 83,010. Thus, in 2016, BLM concluded that the Waste Prevention Rule “is a necessary step in fulfilling its

³⁹ In the Waste Prevention Rule, BLM reasonably accommodated both its mandatory duty to prevent waste of all publicly-owned oil and gas and State efforts to prevent waste by allowing States with regulations that would result in equivalent waste reduction to seek variances. CITE. This ensured that BLM continued to fulfill its independent responsibility to prevent waste.

statutory mandate to minimize waste of the public’s and tribes’ natural gas resources.” *Id.* This is confirmed by independent analysis conducted by the Western Environmental Law Center and Western Organization of Resource Councils in 2016.⁴⁰

State and tribal regulations have not significantly changed between 2016 and 2018 (see Appendix 3 for a comparative analysis of existing state regulations and the 2016 methane rule’s provisions). Nor does BLM even attempt to argue that they have. Instead, BLM has *sub silentio* abandoned its prior position that states and tribes lack regulations that constitute all reasonable precautions to prevent waste—and that the Waste Prevention Rule’s protections were therefore necessary to meet BLM’s statutory mandate to prevent waste.

D. Oil & Gas Lessees and Operators Do Not Hold an Investment-Backed Expectation to Vent, Flare, or Leak Methane That Constrains BLM’s Duty and Authority to Promulgate Rules that Prevent Waste

BLM’s focus on industry costs suggests that it believes oil and gas lessees and operators hold an investment-backed expectation to vent, flare, or leak and that the agency may not therefore take measures that impact a lessee’s profitability. This notion, to the degree it animates the Rescission Proposal’s logic, takes an unlawful view of BLM’s duties and authorities. It also misunderstands the expansive retained responsibility and right the agency enjoys as a lessor to subject leases to newly-promulgated waste prevention requirements to fulfill the MLA’s command to prevent waste.

Fundamentally, an oil and gas lessee has no investment-backed expectation or development right to engage in the waste of oil and natural gas or to contend that past practice dictates the limits of BLM’s ongoing responsibility and authority to prevent waste, including through revisions to rules that apply to both existing and future leases. Lessee rights are limited because the oil and gas mineral estate belongs to the public. BLM may therefore not invoke past practice—or industry’s perceived entitlement to develop a lease based on past practice—to define “waste” solely from the perspective of an individual operator’s profitability—i.e., constraining action to limit venting, flaring, and leaks to situations where an operator’s compliance costs are less than the monetary value of the resource they are developing. 83 Fed. Reg. 7946 (proposed 43 C.F.R. § 3179.3). As the 9th Circuit explained in the context of offshore oil and gas: “Oil and gas deposits . . . are precious resources belonging to the entire nation. Congress, although encouraging the extraction of these resources by private companies, provided safeguards to insure that their exploitation should inure to the benefit of all.” *Union Oil Co. of California v. Morton*, 512 F.2d 743, 747 (9th Cir. 1975).

⁴⁰ WELC & WORC, *Falling Short: State Oil & Gas Rules Fail to Prevent Methane Waste* (2016) (available at: http://westernlaw.org/wp-content/uploads/2016StateMethaneWasteReport_0.pdf).

Pursuant to the MLA, BLM must not only ensure safe and fair development of the mineral resource, but also and more fundamentally “safeguard[] ... the public welfare.” 30 U.S.C. § 187. Specific to waste, the MLA mandates that “[a]ll leases of lands containing oil or gas ... shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land....” 30 U.S.C. § 225; *see also* 30 U.S.C. § 187 (“Each lease shall contain...a provision...for the prevention of undue waste....”). BLM, consistent with this and many other sources of authority and responsibility, must determine where, when, and under what terms and conditions oil and gas development should occur. Specifically, once an oil and gas lease is executed, BLM may control the timing, pace, and scale of development via 43 C.F.R. § 3101.1-2 and consistent with provisions in BLM’s standard lease form. BLM may therefore take action to prevent waste both through the promulgation of new rules that apply to oil and gas leases, both existing and future, and holds the authority if not responsibility to further prevent waste through controls imposed on lease development prior to drilling approvals.

Federal oil and gas leases thus do not convey absolute rights akin to a private fee simple interest. As the Supreme Court has explained, “Congress under the [MLA] has . . . subjected the lease to exacting restrictions and continuing supervision by the Secretary ... In short, a mineral lease does not give the lessee anything approaching the full ownership of a fee patentee, nor does it convey an unencumbered estate in the minerals.” *Boesche v. Udall*, 373 U.S. 472, 477-78 (1963); *see also Indep. Petroleum Assoc. v. DeWitt*, 279 F.3d 1036, 1039 (D.C. Cir. 2002) (finding that the MLA affords BLM “rather sweeping authority ‘to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of [the leasing statutes].’”) (quoting 30 U.S.C. § 189). As the Supreme Court further explained, reflecting on the MLA’s legislative history, “conservation through control was the dominant theme of the debates.” *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (citing H.R.Rep. No. 398, 66th Cong., 1st Sess. 12-13; H.R.Rep. No. 1138, 65th Cong., 3d Sess. 19 (“The legislation provided for herein...will [help] prevent waste and other lax methods....”))

Indeed, while the specific rights granted to a lessee depend on the terms of the particular lease, those rights are often very limited, amounting to no more than an “opportunity” to ask for permission to develop the lease if the proposal meets the requirements of federal law. As the Supreme Court explained in the context of offshore oil and gas leases, leases qualified by the need to obtain future Government approvals, as is the case with federal onshore oil and gas leases, “amounted primarily to an *opportunity* to try to obtain exploration and development rights in accordance with the procedures and under the standards specified in the cross-referenced statutes and regulations.” *Mobil Oil Exploration and Producing Southeast, Inc. v. United States*, 530 U.S. 604, 621 (2000).

Accordingly, the holder of federal mineral lease has, at most, an exclusive, but limited, right to develop any oil and gas that may be found on the leasehold. That grant of rights is “subject to” BLM’s direct oversight of lease operations and BLM’s retained duties and authorities to fulfill FLPMA’s multiple use mandate through the protection of non-mineral multiple uses such as “air and atmospheric” values; to balance resource use and impacts with resource protection through resource management planning; and, “by regulation or otherwise,” to “take any action necessary prevent unnecessary or undue degradation of the lands.” 43 U.S.C. §§ 1701(a)(8), 1712, 1732(b). BLM may therefore compel—and indeed may be obliged, pursuant to the MLA, to compel, whether through a newly promulgated regulation or otherwise—a lessee to limit natural gas venting, flaring, or leaks even where the lessee’s compliance costs exceed the monetary value of the captured gas. These retained duties and authorities are reflected in explicit reservations articulated in BLM’s existing rule defining the scope of a lessee’s rights:

A lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to: Stipulations attached to the lease; restrictions deriving from specific, nondiscretionary statutes; and such *reasonable measures* as may be required by the authorized officer to *minimize adverse impacts to other resource values*, land uses or users not addressed in the lease stipulations at the time operations are proposed. To the extent consistent with lease rights granted, such reasonable measures may include, *but are not limited to*, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures.

43 C.F.R. § 3101.1-2 (emphasis added).

Similarly, the modern (1984 and following) standard lease form enumerates the reserved rights that leases are “subject to”: “Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of the lease, the Secretary of Interior’s regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of the lease.” Moreover, lessees must prevent unnecessary waste, and the lessor reserves the right to specify rates of development and production (section 4). Operations on a lease must be conducted so as to minimize adverse impacts to land, air, and water and other resources and again the siting, design, and timing of operations can be specified (section 6).

Taken together, 43 C.F.R. § 3101.1-2 and Form 3100-11’s standard language subject a lessee’s rights to: (1) stipulations in the specific lease; (2) specific, nondiscretionary statutes; (3) regulations and formal orders in effect at the date of lease issuance; and (4) subsequently issued regulations and orders that are not inconsistent with lease rights granted or specific provisions of

the lease, and that deal with issues “not addressed in the lease stipulations at the time the operations are proposed.”⁴¹

BLM is thus duty-bound to promulgate rules that fulfill its statutory duties even where such rules impose costs on existing lessees in excess of the value of the captured natural gas. This is consistent with Supreme Court precedent providing that “[e]ven with respect to vested property rights, a legislature generally has the power to impose new regulatory constraints on the way in which those rights are used, or to condition their continued retention on performance.” *U.S. v. Locke*, 471 U.S. 84, 104 (1985). Again, BLM may therefore compel—and indeed may be obliged to compel—a lessee to limit natural gas venting, flaring, or leaks even where the lessee’s compliance costs exceed the monetary value of the captured methane in order to satisfy the agency’s statutory responsibilities and, as illuminated here, even where that agency action reflects a change from past agency practice.

There is, moreover, a long-recognized police power retained by government to control waste of natural gas and well operators have never held a reasonable expectation to vent or flare. In a 1900 case, the Supreme Court upheld a state law prohibiting venting of natural gas for more than two days. *Ohio Oil Co. v. Indiana*, 177 U.S. 190 (1900). The Court was unmoved by the fact that the strict state law would cause the well operator to shut in a productive oil well and rejected the operator’s contention that “as the oil could not be taken at a profit by one who made no use of the gas, therefore he must be allowed to waste the gas into the atmosphere.” *Id.* at 199, 211. Natural gas waste, the court found, was a proper subject for regulation. Notably, BLM standard lease form, form 3100-11, provides that onshore oil and gas lease makes rights are subject to “regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.” This retained agency authority is even more expansive than in the offshore context, where the Supreme Court has held that offshore lease rights are subject to regulations promulgated under the authority of existing applicable statutory frameworks, as contemplated by the leases. *Mobil Oil Exploration*, 530 U.S. 604, 621 (2000).

⁴¹ In addition to the provisions at 43 C.F.R. § 3101.1-2 and in the standard lease contract there are other provisions indicating the extent to which BLM has retained rights allowing, and mandating, regulation of waste. BLM is authorized and directed to require that all operations be conducted “in a manner which protects other natural resources and the environmental quality”, among many other things. 43 C.F.R. § 3161.2. Lessees must conduct operations in a manner that “protects other natural resources and environmental quality”, among other things. *Id.* §§ 3162.1(a), 3162.5-1(a). Operators must assure operations do not result in “undue damage to surface or subsurface resources or surface improvements.” *Id.* § 3162.5-1(b).

IV. BLM's Proposed Rescission Is Arbitrary and Capricious.

In the Waste Prevention Rule, BLM determined that the outdated NTL-4A regulation did not constitute all reasonable precautions to prevent waste and that the Waste Prevention Rule was therefore necessary to conform to the agency's statutory duties. Now BLM proposes a complete reversal in position, rescinding the provisions of the Waste Prevention Rule and reinstating an even weaker version of the outdated NTL-4A. BLM cannot do so unless it shows that the revision is "permissible under the statute, [and] that there are good reasons for it" that the agency includes in the administrative record. *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). Moreover, when the revised rule "rests upon factual finding that contradicts those which underlay its prior policy," the agency's reasoning must include "a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy." *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 516 (2009); *see also id.* at 537 ("agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate") (Kennedy, J., concurring); *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 42 (An agency's reversal of policy course "obligate[s] [it] to supply a reasoned analysis for the change."). In its Rescission Proposal, BLM has failed to provide an adequate reasoned explanation for its 180-degree reversal and the Rescission Proposal is arbitrary and capricious.

Notably, BLM's Rescission Proposal quite obviously does not even meet its stated goals. BLM explains that the rescission is necessary because "many provisions of the [Waste Prevention Rule] would add regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation." 82 Fed. Reg. at 7924. But BLM's own analysis shows that the Rescission Proposal would result in the waste of 299 billion cubic feet of natural gas that would otherwise have been captured and sold. *Id.* at 7939. Moreover, BLM admits that it "does not believe that the cost savings [of the Rescission Proposal] would be substantial enough to substantially alter the investment or employment decisions of firms." *Id.* at 7940; *see id.* ("The magnitude of the reductions [in compliance burdens] would be relatively small;" BLM's "analysis showed that the estimated per-entity reduction in compliance costs would result in an average increase in profit margin of 0.19 percentage points). And "BLM believes that the proposed rule would not have a significant economic impact on a substantial number of small businesses." *Id.* at 7941. Accordingly, even assuming for the sake of argument that BLM's stated objectives are "valid objective[s]," (a proposition we do not concede), the Rescission Proposal violates *Fox Television* because those objectives are "not accomplished" by the Proposal. *See City of Phila. v. Sessions*, No. CV 17-3894, 2017 WL 5489476, at *31 (E.D. Pa. Nov. 15, 2017).

a. BLM's Proposal to Revert to NTL-4A's Framework is Arbitrary and Capricious.

The BLM has a statutory duty to prevent the waste of publicly owned resources pursuant to the MLA and FLPMA, as discussed in Section III of these comments. BLM issued NTL-4A in 1979, in part to fulfil these mandatory duties, and NTL-4A was not updated or revised until BLM finalized the Waste Prevention Rule in 2016. In the more than 35 years since NTL-4A's issuance, numerous government oversight reports, including analyses conducted by the agency itself, highlighted the problems associated with NTL-4A and its framework. Under the NTL-4A framework, the waste associated with leaking, venting and flaring of natural gas on public lands alone has resulted in 65 billion cubic feet of natural gas waste every year, worth an estimated \$330 million.⁴² The BLM finalized the Waste Prevention Rule to update its standards in an effort to address the waste allowed by NTL-4A, which it found "neither reflects today's best practices and advanced technologies, nor is particularly effective in minimizing waste of public materials," and reduce natural gas waste on public lands.⁴³ Once fully implemented, the Waste Prevention Rule is estimated to reduce venting by roughly 35%, reduce flaring by 49% and reduce overall methane emissions by 180,000 tpy (roughly a 35% reduction from 2014 estimates).⁴⁴ Now, despite the clear and well-documented waste reduction benefits of the Waste Prevention Rule and failings of NTL-4A to prevent waste, the BLM has proposed to rescind the majority of its waste preventing measures and revert to a modified NTL-4A framework (that is in at least one key respect even less effective at waste prevention than NTL-4A) without providing any reasoned explanation for why the BLM can now disregard its earlier findings that NTL-4A was inadequate to address natural gas waste. This decision cannot be supported by any of the analysis provided by the agency and is thus arbitrary and capricious.

1. The record demonstrates that the NTL-4A framework failed to meet the BLM's waste prevention mandate.

Issued in 1979, NTL-4A regulated venting, flaring, and royalty-free uses of oil and natural gas on BLM-administered leases, as a means for BLM to comply with its statutory duties to prevent waste. To do so, NTL-4A:

- prohibited venting or flaring of gas well gas and oil well gas unless otherwise approved;

⁴² Environmental Defense Fund and ICF International, Onshore Petroleum and Natural Gas Operations on Federal and Tribal Lands in the United States (Sept. 2015), available at <https://www.edf.org/energy/substantial-loss-natural-gas-public-lands>

⁴³ 81 Fed. Reg. 83017.

⁴⁴ 81 Fed. Reg. 83014.

- specified the circumstances under which an operator owes royalties on oil and gas lost from a lease; and
- authorized royalty-free venting or flaring of gas on a short-term basis without the need for approval.⁴⁵

In actuality, however, most venting and flaring was approved—either in fact or because BLM lacked the capacity to enforce NTL-4A’s terms—and for roughly a decade, BLM recognized that relying on this framework was insufficient to meet its statutory duties to prevent waste and worked to update or replace it—until BLM’s sudden reversal under the current administration.

The NTL-4A framework’s failure to address flaring, venting and leaks is well documented. In 2004, GAO began looking to identify opportunities for the federal government to reduce venting and flaring.⁴⁶ Then in December 2007, a Royalty Policy Committee (“RPC”) report, *Mineral Revenue Collection from Federal and Indian Lands and the Outer Continental Shelf*, recommended that the BLM update its rules and identified specific actions to improve production accountability. This was followed by two more reports in 2010: a March 2010 report by the OIG, *BLM and MMS Beneficial Use Deductions*, which recommended that the BLM clarify its requirements for royalty-free use of natural gas; and an October 2010 GAO report, *Federal Oil and Gas Leases – Opportunities Exist to Capture Vented and Flared Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, which recommended that the BLM update its regulations to take advantage of opportunities to capture economically recoverable natural gas using available technologies. Finally, a July 2016 GAO report entitled, *OIL AND GAS—Interior Could Do More to Account for and Manage Natural Gas Emissions*, reviewed the DOI’s provisions to account for and manage natural gas emissions and found BLM’s guidance to operators on determining and reporting non-royalty bearing production was unclear and led to inconsistent tracking and reporting which may impact the accuracy of DOI’s data on natural gas emissions.

In promulgating the Waste Prevention Rule, the agency recognized NTL-4A’s shortcomings, citing each report in its proposal and highlighting a number of additional issues. The BLM stated that NTL-4A required the agency to address venting and flaring on a case-by-case basis resulting in a tremendous administrative burden. It also noted that since NTL-4A was issued, technologies and practices for oil and gas production as well as technologies for controlling emissions have advanced considerably and that “NTL-4A neither reflects today’s best practices and advanced technologies, nor is particularly effective in requiring their use to

⁴⁵ NTL-4A.

⁴⁶ GAO, *Natural Gas Flaring and Venting: Opportunities to Improve Data and Reduce Emissions*, GAO-04-809 (July 2004).

avoid waste.”⁴⁷ Finally, the BLM acknowledged that the broad, general directives of NTL-4A left key terms and provisions (like “beneficial use”, “beneficial purpose”, “avoidably lost” and “economically justified”) open to interpretation resulting in the inconsistent application of the policy across field offices.⁴⁸ More specifically, questions often arose in regards to when venting or flaring required prior approval, when gas was royalty bearing and what constituted royalty-free onsite use.

In fact, as GAO and BLM (in the Waste Prevention Rule) recognized, there has been a dramatic change in oil and gas production since 1979, with the widespread application of hydraulic fracturing and directional drilling. While these practices have enabled the explosion of oil and gas production from shale and other tight oil deposits, they have been accompanied by a dramatic uptick in gas losses, due to several factors. One is that tight oil production is commonly accompanied by relatively large quantities of associated gas, released through the fracking process. Another is that the very rapid development of newly accessible and relatively more profitable oil plays has outstripped the build-out of natural gas infrastructure, leading to a substantial gap between gas production and pipeline capacity. It became increasingly apparent that the NTL-4A framework was simply not adequate to drive operators to prioritize waste minimization in their development planning or to take advantage of even very low cost gas capture and waste minimization opportunities.

The other significant change in oil and gas production since 1979 are the technologies available to reduce waste. As BLM discussed in the Waste Prevention Rule, there have been very significant technological and even work practices advances that now allow operators to capture gas much more readily, rather than flaring, venting or leaking it, at relatively low cost, compared to the types of technologies and practices that were in use in the industry in 1979. The advent of hand held infrared cameras that can rapidly scan large pieces of equipment and identify smaller and less obvious leaks is one advance highlighted by GAO and BLM. Another is technological advances for reducing gas losses from well maintenance and liquids unloading, such as “smart” automated systems that optimize liquids unloading and thereby dramatically cut venting.⁴⁹ Similarly, BLM discussed a variety of newer technological options for capturing and transporting gas, or using it to generate electricity, rather than flaring it, when pipeline capacity is not available. With respect to on-site use, low-bleed pneumatic controllers are now fairly standard in the industry, in contrast to the high-bleed controllers in wide-spread use in the 1970s. Advances have also occurred with respect to preventing losses from pneumatic pumps and tanks. NTL-4A, however, predates these advances and does not contain effective mechanisms to drive operators to deploy these technologies and practices even where they would result in significant waste reductions.

⁴⁷ 81 Fed. Reg. 6628.

⁴⁸ Ibid.

⁴⁹ 81 Fed. Reg. 6654.

It is also important to recognize that technological advances in waste minimization are continuing and are expected to make waste reduction even more cost-effective over time. It would be highly illogical, and contrary to the MLA's waste reduction mandate, for BLM to adopt waste regulations that do not account for and take advantage of these continuing advances. For example, multiple industry commenters on the Waste Prevention Rule urged BLM to structure the leak detection and repair requirements to allow industry to substitute alternative new leak detection instruments in place of the approved leak detection instruments listed in the regulation. At that time, several companies were investing in new remote sensing systems for leak detection that they believed held great promise for detecting leaks at a lower cost than portable analyzers. BLM agreed that the regulations should accommodate these expected advances and structure them accordingly in the Waste Prevention Rule. Now that it is almost two years later, BLM should investigate the expected timing, availability, effectiveness and costs of such remote sensing systems, and reevaluate the costs and benefits of including leak detection requirements before concluding that any such requirements are too costly. Similarly, it is irrational for BLM to dismiss virtually all of the waste prevention requirements in the Waste Prevention Rule without performing an updated analysis of the effectiveness and costs of current technologies available to meet each of the requirements.

In the field, the inadequacy of the NTL-4A framework was clearly demonstrated as it allowed the waste of increasing quantities of publicly owned gas. In finalizing the Waste Prevention Rule, BLM recognized such waste, citing one of the 2010 GAO reports for the fact that "in 2008, about 128 billion cubic feet (Bcf) of natural gas was either vented or flared from Federal leases, about 50 Bcf of which was economically recoverable (about 40% of the total volume lost). This economically recoverable volume represents about \$23 million in lost Federal royalties and 16.5 million metric tons of carbon dioxide equivalent (CO₂e) emissions."⁵⁰

Between the release of the 2010 GAO reports and 2013 this waste continued. As BLM prepared the RIA for the Waste Prevention Rule the agency found that in 2013, 98 Bcf of natural gas was vented and flared from Federal and Indian leases. This volume had a sales value of \$392 million and a royalty value of \$49 million. Of the 98 Bcf, it is estimated that 22 Bcf was vented and 76 Bcf was flared.⁵¹ According to the Office of Natural Resources Revenue ("ONRR"),

⁵⁰ BLM, *Regulatory Impact Analysis for: Revisions to 43 CFR 3100 (Onshore Oil and Gas Leasing) and 43 CFR 3600 (Onshore Oil and Gas Operations) Additions of 43 CFR 3178 (Royalty-Free Use of Lease Production) and 43 CFR 3179 (Waste Prevention and Resource Conservation)* 2 (2016) ("2016 RIA").

⁵¹ *Id.* at 3

Federal and Indian onshore lessees and operators reported that they vented or flared 462 Bcf of natural gas between 2009 and 2015.⁵²

Moreover, the waste of federal resources continues to worsen. The total amount of annual reported flaring from Federal and Indian leases increased by over 1000 percent from 2009 through 2015. During this period, reported volumes of flared oil-well gas increased by 318 percent.⁵³ The trends in requests for flaring and venting submitted as Sundry Notices to BLM field offices support the trends seen in wasted volumes. In 2005, the BLM received just 50 applications to vent or flare gas.⁵⁴ In 2011, the BLM received 622 applications, and this doubled again within 3 years to 1,248 applications in 2014.⁵⁵ This waste has very real financial and environmental impacts. According to a recent study, taxpayers could lose out on almost \$800 million in royalties over the next decade due to natural gas being flared or vented from federal lands.⁵⁶

Note that BLM has not provided updated estimates for each of these indicators of the waste problem based on the 2016 and 2017 data held by the Department of Interior itself, which is manifestly arbitrary, and appears to violate the Data Quality Act. At minimum, BLM must not move forward with new regulations before analyzing, and providing for public comment on the accuracy and implications of the analysis, the quantities of venting and flaring reported by operators for 2016 and 2017, requests for flaring and venting approvals in 2016 and during any period of 2017 when the flaring provisions of the Waste Prevention Rule were not in effect, and updated estimates of the quantities of gas lost through equipment venting, leaks, and other sources that operators have not uniformly (or at all) reported to ONRR.

Part of the problem with NTL-4A identified by these many oversight reports was its passive approach combined with oil and gas lessee inertia—i.e., “the way industry has done business is the way industry will do business.” As the Government Accountability concluded in 2010, and is still relevant to this day:

A number of other factors can also contribute to operators not adopting venting and flaring reduction technologies. Officials that we spoke with said that overcoming “institutional inertia”—a company’s tendency to do business and carry out operations as it always has—is key

⁵² 81 Fed. Reg. at 83009.

⁵³ *Id.* at 83015

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

⁵⁶ Western Values Project, “Up in Flames: Taxpayers Left Out in the Cold as Publicly Owned Natural Gas is Carelessly Wasted” (2014), available at <http://westernvaluesproject.org/wp-content/uploads/2014/05/Up-In-Flames.pdf>.

to adopting these technologies. In a similar vein, industry and EPA officials told us that upper management support is critical for these types of efforts to go forward, and *many companies' management is focused on other efforts that are deemed more important than what are seen as incremental improvements in operations. For example, the operator may choose to invest its limited available capital in drilling a new well, which may have a larger return than investments in capturing vented or flared gas from an existing well, according to industry representatives.*⁵⁷

In addition, the GAO found that the NTL-4A was poorly implemented and its framework was such that it did not ensure adequate enforcement. In large part NTL-4A's failure to prevent waste was because the agency's waste prevention efforts were segregated from the agency's front-end planning and management framework and, therefore, too often forgotten by BLM's state and field office personnel as they went about their day-to-day management of the oil and gas resource. Thus, BLM, under the NTL-4A regime, failed to take advantage of critical points to plan for, manage, and prevent natural gas waste. This segregation not only resulted in BLM passively acquiescing or contributing to natural gas waste, but also undermined the transparency, accountability, and credibility of BLM's decisions.

2. The Waste Prevention Rule would significantly reduce the waste of federal resources.

In line with the Waste Prevention Rule's significant improvements over the NTL-4A, the benefits created by the Waste Prevention Rule that the public will no longer realize are significant. BLM projected the Waste Prevention Rule would prevent the loss of 9–41 Bcf per year natural gas.⁵⁸ The Waste Prevention Rule is also projected to reduce VOC emissions by 250,000–267,000 tons per year and methane emissions by 175,000 – 180,000 tpy (using the social cost of methane, estimated to be worth \$189 – 247 million per year).⁵⁹ In addition, the Waste Prevention Rule provides numerous ancillary benefits including reducing light and noise pollution from flaring operations, increasing safety, reducing exposure to hazardous air pollutants and known carcinogens like benzene, and reducing respiratory problems associated with exposure to high ozone levels.⁶⁰

⁵⁷ Government Accountability Office, *Federal Oil and Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34 at p. 24 (October 2010) (emphasis added).

⁵⁸ 81 Fed. Reg. 83069.

⁵⁹ 81 Fed. Reg. 83014.

⁶⁰ See, e.g., 2016 RIA at 126 (noting contribution of waste to visual and noise impacts from flaring, smog and particulate matter pollution, exposure to benzene and other toxic air pollutants, as well as climate change); 7 (describing non-monetized health and environmental benefits of the rule).

When finalizing the Waste Prevention Rule, BLM conducted a thorough analysis and estimated net benefits of up to \$204 million per year.⁶¹ That estimate took into consideration engineering compliance costs as well as the social cost of minor additions of carbon dioxide to the atmosphere. Total costs were estimated to be between \$110-279 million per year.⁶² The benefits calculated in 2016 included projected environmental benefits of reducing the amount of greenhouse gas (GHG) pollution as well as the cost savings that the industry will receive from the recovery and sale of natural gas. Monetized benefits are estimated to be between \$209 – 403 million per year.⁶³ Additionally, BLM determined that the Waste Prevention Rule is expected to increase royalties by up to \$14 million per year.⁶⁴ Altogether, the Rule would reduce venting by about 35% and reduce flaring by 49%.⁶⁵

The Waste Prevention Rule is able to provide these benefits while imposing minimal compliance costs on operators.⁶⁶ In finalizing the Waste Prevention Rule, BLM estimated that average costs for a representative small operator under the Rule would increase by about \$55,200, an average reduction in profit margin of 0.15 percentage points.⁶⁷ Independent economic analyses have come to similar conclusions. A recent study found that capture costs will account for less than 3 percent of annual costs for an average marginal well, resulting in a decrease in annual profit of less than one-tenth of one percent.⁶⁸

Yet despite the overwhelming evidence of the need for, and efficiency of, the Waste Prevention Rule to address the pervasive waste problem as compared to the prior NTL-4A framework, BLM proposes to go back to that deficient framework without providing the required reasoned explanation justifying a departure from the Bureau’s own finding that NTL-4A doesn’t meet the agency’s statutory mandate. *State Farm*, 463 U.S. at 42 (An agency’s reversal of policy course “obligate[s] [it] to supply a reasoned analysis for the change.”). In its Rescission Proposal, BLM does not grapple with the pervasive problem of natural gas waste nor the abundant evidence in the record demonstrating that the NTL-4A was insufficient to address this problem. Going back to an NTL-4A framework will ultimately lead to increased waste from venting and flaring, and an increase in VOC and methane emissions from the same. According to BLM’s

⁶¹ 81 Fed. Reg. 83014.

⁶² *Id.* at 83068.

⁶³ *Id.* at 83069.

⁶⁴ *Id.* at 83014.

⁶⁵ *Id.* at 83069.

⁶⁶ 2018 RIA at 30.

⁶⁷ 81 Fed. Reg. 83014.

⁶⁸ Morton, Pete and Hjerpe, Evan, Conservation Economics Institute, A Review of the Economic Factors Surrounding the Capture of Methane from Oil and Natural Gas Development on Federal Public Land (2016), available

at https://docs.wixstatic.com/ugd/5fc209_59c6d0e608554ac98fd5ac9b4655fad1.pdf.

own analysis of the proposed rule it will lead to 299 Bcf of gas being lost over a ten year period, and with it \$32.7 million of royalties that would otherwise be paid on that lost gas, all while increase methane emissions by 1.78 million tons and VOC pollution by 2.59 million tons.⁶⁹ Likewise, BLM estimates 1,860 to 2,030 additional tons per year of HAPs due to the Rescission Proposal.⁷⁰

Given the significant waste of natural gas over the last decade along with the well documented issues associated with the existing regulatory and management structure as reported by outside agencies and the BLM, it is clear that NTL-4A was inadequate and that under that framework, the agency was unable to ensure the prevention of natural gas waste. BLM's unexplained decision to revert back to this framework is arbitrary and capricious and would once again place the agency in the position of failing to carry out its waste prevention mandate.

3. The proposed rule eliminates the changes made by the 2016 rule to improve upon NTL-4A, weakens NTL-4A in one critical respect, and does nothing to ensure the issues stemming from the use of NTL-4A are addressed.

Despite the agency's prior contrary conclusion, its failure to meet its waste minimization obligations under the NTL-4A framework and robust analysis showing that full implementation of the Waste Prevention Rule would significantly reduce federal natural gas waste, the BLM now believes that a return to the NTL-4A framework "is appropriate and will ensure that operators take 'reasonable precautions' to prevent 'undue waste.'"⁷¹ Yet, BLM provides no evidence to support this conclusion, let alone the "reasoned explanation" required by *Fox Television* that explains why it can now ignore the voluminous record supporting 2016's conclusion that NTL-4A and its framework is inadequate to prevent waste. Moreover, while BLM purports to return to NTL-4A's framework, BLM's proposal actually largely abandons its review and approval role for flaring and venting under NTL-4A, making the new approach significantly weaker even than the proven ineffective NTL-4A framework.

The Rescission Proposal eliminates key provisions of the Waste Prevention Rule and instead relies on state regulations supplemented, where no such state or tribal regulations exist, by the previous NTL-4A framework to address waste of natural gas. The Rescission Proposal explicitly rescinds limits on venting and flaring (43 CFR § 3179.6(b), 43 CFR § 3179.7) well drilling requirements (43 CFR § 3179.101), well completion and related operations requirements (43 CFR § 3179.102), pneumatic controllers equipment requirements (43 CFR § 3179.201), pneumatic diaphragm pumps equipment requirements (43 CFR § 3179.202), storage vessels

⁶⁹ 2018 RIA at 39.

⁷⁰ 2018 EA at 22.

⁷¹ 83 Fed. Reg. 7,928.

equipment requirements (43 CFR § 3179.203), LDAR requirements (43 CFR § 3179.301 – 3179.305) and the requirement to submit Waste Minimization Plans (43 CFR § 3162.3-1). It modifies and/or replaces the Waste Prevention Rule’s requirements addressing the determination of avoidable and unavoidable loss (43 CFR § 3179.4), the determination of royalty bearing production (43 CFR § 3178.3 – 3178.10 and § 3179.5), initial production testing requirements (43 CFR § 3179.103), subsequent well testing requirements (43 CFR § 3179.104) and other venting or flaring prohibitions (43 CFR § 3179.6), and replaces them with requirements that are similar to those of NTL-4A.”⁷² The proposed requirements are likely to result in almost all of the same issues experienced by managing federal gas waste under the original NTL-4A framework, exacerbated by BLM’s almost complete relinquishment of oversight authority over flaring and venting, and BLM has not provided any reasoned explanation for why what happened in the past will not happen, or be made even worse, in the future.

In the first instance, BLM proposes that venting or flaring of oil-well gas (which constitutes the majority of wasted gas) does not require approval from BLM and is royalty free as long as such venting or flaring does not violate a regulation or order of the appropriate state regulatory agency or tribe. As discussed in Appendix 3, most, if not all states have some regulation related to venting and flaring of gas, and thus, apart from leases on tribal land, it appears that BLM would no longer have any prior notification of venting or flaring, or opportunity to disapprove it or find that it is subject to royalties (apart from where it would violate other provisions of the Proposed Rescission Rule). In the limited situations where BLM would retain its oversight of venting and flaring, however, BLM proposes to exercise it pursuant to an approach that largely tracks the NTL-4A framework, although even this is weaker in several ways.

NTL-4A attempted to prevent waste by prohibiting venting and flaring of oil well gas unless prior approval was granted, specifying the circumstances under which an operator owes royalties by defining “avoidably lost” gas, authorizing royalty-free flaring on a short-term basis, and permitting the waste of some gas royalty-free without approval.⁷³ Under this framework, operators must apply to the BLM on a case-by-case basis for approval to flare royalty-free based on economic criteria. The language of NTL-4A, however, actually *prohibited* venting and flaring, not just subjected it to royalties, if not “approved in writing by the Supervisor.” While BLM does not appear to have often applied this language to disapprove venting and flaring, it retained that authority and may have used it, in some instances at least, to push a company to limit the quantity or timing of its venting or flaring. In addition, NTL-4A required *prior* approval of venting and flaring applications. Again, while BLM appears not to have implemented this limitation, at least in recent years, it retained the authority to do so under NTL-

⁷² 83 Fed. Reg. at 7928.

⁷³ NTL-4A.

4A. In contrast, the proposed rule establishes no time limit for when the operator must submit or BLM approve an application for royalty-free flaring.

Under NTL-4A, to determine that gas which was “avoidably lost” is subject to royalties, BLM defined “avoidably lost” gas as produced gas that is vented or flared without the “prior authorization, approval, ratification, or acceptance of the Supervisor,” or lost due to negligence, a failure to comply with lease terms, the operating plan, orders or regulations; or the failure of the lessee to take all reasonable measures to prevent loss.⁷⁴ BLM proposes to adopt this exact definition again for “avoidably lost” gas. *See* 83 Fed. Reg. 7946 (Proposed 43 C.F.R. § 3179.4(a)). NTL-4A further provided that no royalty is due for gas that is used on the lease for “beneficial purposes”, vented or flared with the Supervisor’s prior authorization or approval; vented or flared pursuant to State rules or orders, or otherwise unavoidably lost, as determined by the Supervisor.

Furthermore, NTL-4A authorized royalty-free venting or flaring of gas “on a short-term basis” without the need for approval during emergencies; well purging and evaluation tests; and initial production tests.⁷⁵ In other instances it prohibited venting and flaring of oil well gas without prior authorization. An approval may be granted if an evaluation report is submitted showing that “the expenditures necessary to market or beneficially use such gas are not economically justified and that conservation of the gas, if required, would lead to the premature abandonment of recoverable oil reserves and ultimately to a greater loss of equivalent energy than would be recovered if the venting or flaring were permitted to continue.”⁷⁶ Alternatively, an approval may be granted if the venting and flaring will be eliminated within one year.

The Waste Prevention Rule revised NTL-4A’s approach to avoidably and unavoidably lost gas, and the Rescission Proposal’s departure from this goes unexplained in the current rulemaking. Specifically, the Rescission Proposal modifies the Waste Prevention Rule in the following ways that are neither reasonable nor justified:

- 1. BLM should not revive “beneficial use” and “beneficial purpose,” but if it does so, it must define the term or terms in a way that clearly delineates between uses of gas that are necessary or reasonable for production purposes, and those that are simply wasteful.** The Waste Prevention Rule does not use the terms “beneficial purpose” and “beneficial use,” which are used in NTL-4A. Over the years, those terms have been applied to a very broad set of on-lease activities, with little or no apparent limits, leading to excessive and wasteful on-site uses.⁷⁷ In addition, these broadly defined terms have

⁷⁴ NTL-4A.

⁷⁵ NTL-4A II.

⁷⁶ NTL-4A III(B).

⁷⁷ *See* 81 Fed. Reg. 6,628.

allowed inconsistent implementation amongst the field offices, creating confusion for some in the industry regarding when production may be used royalty-free. BLM's Rescission Proposal would bring back the beneficial use term in describing how the agency will determine royalty-free use of gas under the economic justification test without explaining how the term addresses waste.

- 2. BLM must clarify “avoidably” versus “unavoidably” lost.** Under the Waste Prevention Rule, BLM clearly delineated when a loss of gas would be “avoidable” versus “unavoidable” by listing specific operations and sources that are considered “unavoidable” sources of gas after the application of prudent and reasonable measures to avoid waste. *See* 81 Fed. Reg. 83013. Gas losses from all other operations and sources not listed as “unavoidable” were defined in the rule as “avoidable.” This clarity and specificity reduces the uncertainty faced by the operators and the inconsistent results created by different interpretations amongst field offices, as well as the waste that resulted from such uncertainty and inconsistency. BLM also recognized that this clear-cut establishment of categories would “dramatically reduce the large number of requests for approval to flare royalty-free that operators have had to file and the BLM has had to process each year.” 81 Fed. Reg. 83013. Finally, this approach enhances compliance and makes enforcement less burdensome by clarifying that the burden is on the operator to demonstrate that lost gas meets the definition of unavoidably lost, rather than forcing BLM to demonstrate that that the lost gas does not qualify as avoidably lost.

As described above, the Waste Prevention Rule's treatment of avoidably lost and unavoidably lost gas differed from the NTL-4A approach. Under NTL-4A, the BLM defined both “unavoidably lost” and “avoidably lost” in fairly complex definitions that were not mirror images, generating substantial ambiguity and confusion about how to categorize various different sources or situations. BLM noted in the Waste Prevention Rule that the agency “has not always been consistent in applying this distinction between “unavoidably” and “avoidably” lost gas, creating significant confusion for both operators and regulators.”⁷⁸ Despite these problems previously recognized by BLM and others, the Rescission Proposal redefines “avoidably lost” production to track the “avoidably lost” definition in NTL-4A Section II.A. It also modifies the definition of “unavoidably lost” from the Waste Prevention Rule to permit any “normal” loss of gas from storage tanks and low-pressure production vessels and to include produced gas that is flared or vented with BLM authorization or approval. Because the Rescission Rule eliminates the requirements to control gas losses from storage tanks and low-pressure production vessels, there is no criterion in the proposed regulation to distinguish between “normal” losses and otherwise. In addition, because the Rescission Rule reintroduces the nonexclusive and potentially overlapping definitions of avoidable and unavoidable loss, it

⁷⁸ 81 Fed. Reg. 6630.

shifts the burden of proof back to BLM to show that a given loss of gas is not only not unavoidable, but also avoidable, and it brings back many of the prior opportunities for confusion and inconsistency.

As discussed above, where venting or flaring is not already allowed, pursuant to an applicable state regulation, the Rescission Proposal allows operators to obtain BLM approval to vent or flare oil-well gas royalty free by submitting an application with sufficient justification, necessitating the case-by-case approval system the Waste Prevention Rule attempted to eliminate. In fact, it appears that even if a quantity of oil or gas were vented or flared contrary to applicable state regulation, the operator could still request BLM approval to vent or flare free of federal royalties. Applications for royalty-free venting or flaring of oil-well gas would include an evaluation report demonstrating that capturing or using the gas is not “economically justified” or an action plan showing how the operator will “minimize” the venting or flaring of the gas within 1 year of the application. The regulation does not define or illuminate what would constitute minimization of the venting or flaring. And while the regulation does specify what would need to be included in an evaluation report and provides some criteria for BLM to apply, these are essentially the same components and criteria that were almost uniformly disregarded by both operators and BLM prior to the adoption of the Waste Prevention Rule, as discussed in these comments. Moreover, BLM provides no explanation for how this approach will prevent waste despite years of evidence demonstrating the opposite. BLM also fails to recognize the potentially burdensome requests for BLM approvals that would occur under the proposed approach, or explain how it will have the resources to evaluate and process these requests.

3. **BLM must clarify the economic justification test.** In the past, even small net costs have been viewed as meeting the test under NTL-4A, as any net cost might theoretically cause an operator to abandon a well earlier than it otherwise would have done. In light of the BLM’s statutory obligation to reduce waste of natural gas from venting, flaring, and leaks, however, BLM must require that an operator demonstrate more than a negligible economic impact in order to qualify for an exemption from the flaring limit. The Rescission Proposal does not establish clear criteria for what constitutes a sufficient economic justification for approving royalty-free flaring or venting.
4. **BLM must eliminate or reduce discretionary authority to authorize venting and flaring.** The GAO Report found that BLM officials have approved many venting or flaring requests that do not comply with NTL-4A. Further, in the preamble to the proposed Waste Prevention Rule, BLM found that it generally approved venting or flaring requests, so the current process cost agency resources but did not actually reduce venting and flaring. 81 Fed. Reg. at 6,619. The broad discretionary authority contained

in NTL-4A was ineffective. The Waste Prevention Rule changed this approach in a sensible manner to provide limits on flaring and reduce the need for broad, case-by-case authorizations. Relying on the NTL-4A framework as the Rescission Proposal does will necessitate a reversion back to this case-by-case approach in those cases where the operator is not already in compliance with some applicable state standard related to venting and flaring.

5. **BLM must provide for leak detection and repair (LDAR) and monitoring, and require the use of readily-available technologies to prevent gas waste.** More than 37 years have passed since NTL-4A was issued and, in that time, the industry has developed vastly improved technologies and practices for capturing and using gas on-site, detecting leaks, controlling vapors from storage tanks, removing liquids from gas wells, and many other aspects of production. BLM acknowledged this as part of the rulemaking for the Waste Prevention Rule. *See* 81 Fed. Reg. at 83,017. NTL-4A does not incorporate or contemplate these readily-available and low cost technologies for minimizing waste. The Rescission Proposal rescinds the LDAR and technology requirements in their entirety and does not establish comparable alternatives.

The Waste Prevention Rule very explicitly addressed these issues. The Rescission Proposal eliminates those provisions and clarifying terms. It will likely result in a case-by-case approval process that will likely lead to inconsistent application across field offices and the unnecessary waste of valuable and publicly-owned resources.

4. Establishing a process for approving royalty-free venting and flaring modelled on NTL-4A and operator-submitted “evaluation reports” or “action plans” flies in the face of BLM’s complete failure to implement this requirement.

Under NTL-4A, in order to grant an operator approval to vent or flare oil well (associated) gas, BLM required operators to submit an evaluation report (to include engineering, geologic or economic data) to justify the request, or an action plan to eliminate venting or flaring within one year of the application. Specifically, NTL-4A required that:

Oil well gas may not be vented or flared unless approved in writing by the Supervisor. The Supervisor may approve an application for the venting or flaring of oil well gas if justified either by the submittal of (1) an evaluation report supported by engineering, geologic, and economic data which demonstrates to the satisfaction of the Supervisor that the expenditures necessary to market or beneficially use such gas are not economically justified and that conservation of the gas, if required, would lead to the premature abandonment of recoverable oil

reserves and ultimately to a greater loss of equivalent energy than would be recovered if the venting or flaring were permitted to continue or (2) an action plan that will eliminate venting or flaring of the gas within 1 year from the date of application.⁷⁹

The Rescission Proposal seeks a return to this process with a major modification that significantly weakens even NTL-4A's modest efforts at preventing waste. In Section IV.B, NTL-4A prohibits venting or flaring of oil well gas without BLM approval. In Section IV.A, it also prohibits entirely venting or flaring of well gas with limited exceptions. Importantly, the Rescission Proposal shifts the focus from banning or requiring approval for venting and flaring to only the royalty treatment of oil well gas that is vented or flared. The Rescission Proposal simply provides that "oil-well gas may not be vented or flared royalty free unless BLM approves it in writing" or unless gas is vented or flared in accordance with state or tribal rules.⁸⁰ Further, approval of royalty-free venting or flaring must be justified by an evaluation report or an action plan.⁸¹

In BLM's preamble to the proposed Waste Prevention Rule, BLM indicated that applications to vent or flare grew significantly between 2011 and 2014. It stated:

Another indicator of the increase of flaring on Federal and Indian lands is the increase of applications to vent or flare received by the BLM. In 2005, the BLM received just 50 applications to vent or flare gas. In 2011, the BLM received 622 applications, and this doubled again within 3 years to 1,248 applications in 2014. BLM field offices indicate that most of the additional applications were for flaring in New Mexico, Montana, the Dakotas, and, to a lesser extent, Wyoming.⁸²

To assess the adequacy of evaluation reports and action plans BLM received from operators to justify these applications to vent or flare oil well gas, the Western Environmental Law Center submitted a FOIA request on September 9, 2014 on behalf of San Juan Citizens Alliance seeking records of "applications to vent or flare under NTL-4A and approvals or authorizations granted by 'Supervisors'" created between January 1, 2011 and the present, including records of "evaluation reports" and "action plans" required by NTL-4a Section IV.B

⁷⁹ NTL-4A, Section IV.B. Oil Well Gas.

⁸⁰ 83 Fed. Reg. 7947.

⁸¹ *Id.*

⁸² 81 Fed. Reg. 6631.

and IV.C.”⁸³ Records were requested for BLM Field Offices in WY, CO, NM, UT and MT that manage the majority of federal lands producing oil and gas.

On February 19, 2016, BLM provided almost 5,000 records of applications to vent or flare by operators. Records were received for the WY Buffalo and Casper Field Offices (970 and 244 records respectively), the NM Farmington Field Office (1,476 records), the UT Vernal Field Office (1,126 records), the CO Durango (Uncompahgre) and Glenwood Springs Field Offices (42 and 284 records respectively), and the MT Miles City Field Office (181 records).⁸⁴ Remarkably, an analysis of these records yielded only one record containing the term “evaluation report” and three records containing the term “action plan”. BLM also provided fifteen records separately for several wells. Only three of these records included an in-depth economic analysis.⁸⁵

BLM confirmed the virtual absence of required justifications in additional written responses to the FOIA request. In a letter dated December 22, 2015, BLM replied that the Colorado State Office completed a search of their files and did not locate any records of evaluation reports or action plans accompanying applications to vent or flare.⁸⁶ In an email dated August 8, 2016, BLM stated that “After a search reasonably calculated to find responsive records by BLM offices they found no evaluations reports or action plans in the offices listed in your question. We can only stipulate that we’ve provided you with what we found after a search reasonably calculated to find responsive records. As to WY and MT, these were samples and do not constitute all action or evaluation reports.”⁸⁷

Our analysis of the results of this FOIA request determined that none of the field offices queried received an action plan to eliminate venting and flaring. While three records from the Buffalo Field Office claimed that oil and gas operators had an action plan to eliminate flaring, these documents were not produced. In New Mexico, Utah, and Colorado, BLM field offices received no evaluation reports from operators justifying an application to vent or flare. In

⁸³ Freedom of Information Act Request, From Kyle Tisdale, Western Environmental Law Center, to Ryan Witt, U.S. Bureau of Land Management (Sept. 9, 2014).

⁸⁴ See generally BLM Interim Response to FOIA Request No. BLM-2014-00827 (Feb. 19, 2016).

⁸⁵ See Samson Resources Co., Sundry Notices and Reports on Well, Lease Serial No. WYW142080, API Well No. 49-019-30023-00-S1, at 1 (April 1, 2015); Transworld Systems Petroleum., Sundry Notices and Reports on Well, Agreement No. WYW175258X, API Well No. 49-009-29610-00-S1, (Sept. 28, 2015).

⁸⁶ Interim Response to FOIA # BLM-2014-00827, from Cynthia Moses-Nedd, BLM, to Kyle Tisdale, Western Environmental Law Center (Dec. 22, 2015).

⁸⁷ Email, from Marina Braswell, U.S. Attorney’s Office, to Laura King, Western Environmental Law Center, and Ryan Witt, U.S. Bureau of Land Management, “RE: Case No. 1:15-cv-01684-KBJ, Powder River Basin Resource Council, et al. v. BLM” (Aug. 26, 2016).

Wyoming and Montana, operators submitted a handful of evaluation reports, but of the documents received, many merely stated in a conclusory manner that gas was uneconomical to connect to a sales line due to small volumes, volumes in excess of pipeline capacity, or lack of pipeline availability. Only two records were found that included actual documentation that denial of approval was not economically justified.

As a follow up to the 2014 FOIA request, on February 2, 2018, the Western Environmental Law Center submitted a FOIA request to BLM on behalf of WildEarth Guardians seeking all agency records between December 8, 2017 (when BLM issued a stay of compliance dates provided by the 2016 rule) and the date of the request “related to applications to vent or flare gas from federal oil and gas leases or wells managed by the [Pecos NM] District and [the Carlsbad and Roswell] Field Offices submitted pursuant to [NTL-4a], including records of “evaluation reports” and “action plans”.⁸⁸ In a preliminary response dated April 3, 2018, a BLM FOIA officer stated that “I checked with Carlsbad and Roswell and they do not have any responsive records related to economic justifications so in our final response there would be a no records found for this portion of your request.”⁸⁹ As of the date of submission of these comments, no final response has been received.

The results of these FOIA requests demonstrate BLM’s failure to implement NTL-4A’s requirements. Unless BLM has simply been willfully disregarding the NTL-4A requirements across-the-board through an (apparently unwritten) policy determination that could readily be reversed, this strongly suggests that the NTL-4A approach itself presents immense challenges for BLM implementation that are not easily overcome. Moreover, BLM neither acknowledges these challenges nor identifies any intention to address them or means of addressing them in the future. These facts underscore the arbitrary nature of the agency’s decision to revert back to the failed NTL-4A requirements to reduce waste.

b. BLM’s findings regarding the compliance burden placed on marginal wells by the Waste Prevention Rule and BLM’s concerns over shut-ins and loss of production are unsupported by record evidence.

BLM’s new findings in the Rescission Proposal regarding marginal wells are unsupported by factual evidence. While BLM expresses new concern over “compliance burdens” for marginal wells, BLM does not provide any new evidence that supports a departure from the agency’s previous findings in the Waste Prevention Rule that compliance costs were reasonable,

⁸⁸ Freedom of Information Act Request, From Kyle Tisdale, Western Environmental Law Center, to Ryan Witt, U.S. Bureau of Land Management (Feb. 2, 2018).

⁸⁹ Email, from Eileen Griego Chavez, BLM, to Laura King, Western Environmental Law Center, “RE: Initial Response to FOIA NM 2018-017 from WELC Re Waste Minimization Plans et al.” (March. 15, 2018).

and economic exemptions would prevent production losses. Independent economic analyses of marginal wells further underscore that BLM's new concerns are unfounded. Furthermore, BLM utterly fails to analyze the significant impact of marginal wells on waste and emissions. And ultimately, any alleged concerns over the Waste Prevention Rule's impacts on the subset of wells that are marginal cannot support a rescission of requirements for *all* wells—including those that are not marginal.

In the Rescission Proposal, BLM claims that “many of the 2016 final rule’s requirements would pose a particular compliance burden to operators of marginal or low-producing wells, and there is concern that those wells would not be economical to operate with the additional compliance costs.” 83 Fed. Reg. at 7,926. BLM further argues that “[d]ue to the prevalence of marginal and low-producing wells, we would expect that many exemptions would be warranted, making the burden imposed by the exemption process excessive. It is also possible that some proportion of marginal wells would be prematurely shut-in by their operators due to the costs and uncertainties involved in obtaining an exemption from the BLM or the costs associated with an alternate LDAR program.” *Id.*; see also 2018 RIA at 55-57.

This represents a dramatic, unsupported departure from BLM's findings regarding marginal wells when it promulgated the Waste Prevention Rule. At that time, industry concerns regarding impacts on marginal wells largely focused on the LDAR requirements. In response, BLM stated:

BLM does not anticipate a significant number of individual well shut-ins or any leasewide shut-ins as a result of the LDAR requirements, even with respect to low production wells. As discussed in the RIA, third-party providers offer LDAR services at a relatively modest cost, and operators may recoup some of the costs of the program through the saved gas. Also, operators have the option to design and request approval of an alternative LDAR program that is less costly for their particular circumstances, provided they can demonstrate that their alternative program is equally effective. Finally, an operator may request approval of an alternative leak detection program that is not as effective as the BLM's requirements, if the operator demonstrates that compliance with the BLM's LDAR requirements or an equally effective alternative would be so costly as to cause the operator to cease production and abandon significant recoverable oil or gas reserves under a lease.

81 Fed. Reg. at 83,030. BLM also noted in the 2016 RIA that other provisions of the Waste Prevention Rule were unlikely to apply to marginal wells, because “these wells are highly unlikely to have uncontrolled storage tanks that would require control and would not have large enough oil-well gas flaring volumes to garner compliance.” 2016 RIA at 123.

BLM has provided no factual basis for the change in its position regarding the burden imposed by the Waste Prevention Rule on marginal wells. Instead, it offers conclusory statements in both the Rescission Proposal and the 2018 RIA. BLM claims that the Waste Prevention Rule would impose an economic burden on marginal wells, and expresses “concern” that compliance costs would cause operators to shut down their production. 83 Fed. Reg. at 7,926. But BLM does not provide any data supporting its claim that the compliance cost of LDAR, pneumatic equipment, and liquids unloading requirements in the Waste Prevention Rule would impose a “particular burden” and cause marginal wells to be no longer economical. *Id.*

And while BLM claims in the 2018 RIA that BLM incorrectly assumed in the 2018 that all operators that required an economic exemption would be granted one and that all marginal well operators would be able to afford to implement LDAR programs or other programs under the economic exemptions, 2018 RIA at 56, BLM provides no new evidence that casts doubt on these assumptions. Indeed, in light of BLM’s apparent record to date (as discussed above) of largely rubberstamping approvals of requests to vent or flare royalty free, it appears far more likely than not that BLM would be, if anything, overly liberal in approving economic exemptions. Moreover, since BLM itself controls the degree to which it will approve requests as necessary to avoid shut-ins of marginal wells, it is simply irrational for BLM to now assume that it would not approve such requests. Furthermore, as BLM noted in the Waste Prevention Rule, the low cost of LDAR and additional revenues from the sale of captured gas make shut-in unlikely even for low-production wells. 81 Fed. Reg. at 83,030.

While BLM notes that the Waste Prevention Rule provides economic exemptions and allows operators to request permission to use alternate LDAR programs, but it then asserts, again without factual support, that the cost and uncertainties of obtaining exemptions is too high. 83 Fed. Reg. at 7,926. BLM does not provide any evidence that it cannot grant exemptions when needed or that the agency is having difficulties responding to requests for exemptions in support of its assertion that “the burden imposed by the exemption process” is “excessive.” *Id.* It is BLM’s obligation to provide any evidence of such difficulties processing exemptions in the record for this rulemaking, as the agency attempts to rely on these alleged difficulties to justify the Rescission Proposal.

Moreover, it does not seem likely that BLM would be able to point to any evidence to support such an assertion. For example, BLM suggests that it would be too costly for operators of marginal wells to submit and support a request for an alternative leak detection program that is less effective than the program required under the Waste Prevention Rule. But in reality, this should not be burdensome. The type of information required to support an economic showing is basic business information regarding production, costs and revenues, and projected production, costs and revenues. This is also the type of information and showing long required under NTL-

4A, and that BLM does not appear to think is too burdensome in other contexts. To describe and support an alternative leak detection program an operator could identify a program that is the same as that required by the rule but operated less frequently, thereby cutting the costs, and producing waste reduction results consistent with the alternative frequencies that BLM analyzed in the Waste Prevention Rulemaking. Further, if BLM is concerned about the capacity of small operators to produce such applications, BLM is fully capable of providing technical assistance, such as by designing a model lower cost program that could be approvable upon an operator's economic showing.

Contrary to BLM's unsupported allegations that the Waste Prevention Rule imposes significant burdens on marginal wells, available economic analyses indicate that the Rule's standards are reasonable and achievable even for the lowest production wells. As discussed *supra*, BLM found in the 2018 RIA that the "estimated per-entity reduction in compliance costs would result in an average increase in profit margin of 0.19 percentage" for the average *small* producer, a marginal amount. 2018 RIA at 53.

To evaluate the expressed concern over increased shut-in of marginal wells, MJ Bradley and Associates conducted an analysis of marginal well shut-in on BLM-managed lands, submitted to this docket in comments by the Environmental Defense Fund. Using information from the Drillinginfo database, all wells on BLM-managed land were identified. Production for each well from 2012-2016 was then analyzed to identify marginal wells (wells with less than 10 barrel of oil equivalent/day of production) and wells that shut-in (ceased production) during that time period. Revenue for each well was also estimated, based on production and average resource price. This analysis concludes that decision as to whether or not to shut-in a well appears to be based primarily on *production*, not revenue—most wells appear to get shut in when production drops below 5 BOE/day, regardless of natural gas and oil price. This analysis suggests that changes in revenue (including any changes in revenue that may occur due to compliance costs associated with the Waste Prevention Rule) have a limited effect on well shut-in decisions.

In a 2016 research paper, the Conservation Economics Institute likewise found that the Waste Prevention Rule would not impose a significant cost burden on marginal wells.⁹⁰ The paper describes four reasons why compliance costs associated with the Waste Prevention Rule are unlikely to change production decisions: 1) regulatory compliance costs are small relative to total business costs; 2) comparable regulations exist across state lines and from country to country; 3) other economic factors like drilling and labor costs play a more significant role in

⁹⁰ Conservation Economics Institute, *A Review of the Economic Factors Surrounding the Capture of Methane from Oil and Natural Gas Development on Federal Public Land* (April 22, 2016), available at https://docs.wixstatic.com/ugd/5fc209_59c6d0e608554ac98fd5ac9b4655fad1.pdf ("CEI Study").

location decisions; and 4) technological change stimulates innovation and increases productivity which offsets the costs of regulation. CEI Study at 2. The paper conducted a case study of oil and gas wells on federal land in the San Juan Basin in New Mexico, and found that the impacts of the Rule on small entities would be even more limited than projected by BLM in the 2016 RIA. The study found that overall compliance costs associated with the Rule represent less than 3% of annual costs for an average marginal well. CEI Study at 19. Moreover, the study found that conducting LDAR would have no effect on or actually *increase* profits for wells producing more than 15 Mcf/day, which accounted for 90% of the wells analyzed and more than 99% of the production in the San Juan Basin. CEI Study at 16-19.

BLM's "economic output" analysis, 2018 RIA at 56-57, does not provide factual support for the agency's claims that production from marginal wells will be negatively impacted by the Waste Prevention Rule. BLM uses a series of logical leaps to make conditional claims that "[t]o the extent that the 2016 final rule *would* adversely impact production from marginal wells, this estimated economic output *would* be harmed and any number of those wells *could* be shut-in." *Id.* at 56 (emphases added). BLM provides no factual evidence to justify the agency's speculation at any step of this chain of logic. If anything, the fact that BLM estimates \$2.9 billion in economic output associated with marginal wells on federal lands indicates that Waste Prevention Rule compliance costs are a small fraction of the economic activity associated with these wells,⁹¹ and thus are unlikely to influence production or shut-in decisions.

In addition to failing to support their alleged "concerns" over compliance costs associated with the standards for marginal wells, BLM fails to analyze the impacts of the Rescission Proposal on waste and additional emissions from marginal wells. There is only one statement included in the Rescission Proposal regarding the waste and emissions from marginal wells:

The BLM does not believe that the potential fugitive gas losses from marginal oil wells (with production rates fewer than 10 bbl per day or 15 bbl per day) would be substantial enough to warrant the costs of maintaining a LDAR program with semi-annual inspection frequencies.

83 Fed. Reg. at 7,932. BLM does not provide any data or references supporting their assertion that marginal oil wells have emissions that are too low to have cost-effective benefits from LDAR. BLM previously carefully considered, and rejected based on the record before it,

⁹¹ Using BLM's estimates of net compliance costs in 2019 (compliance costs after cost savings) associated with the Rule from the 2018 RIA, *total* Waste Prevention Rule compliance costs represent approximately 3% of this estimated annual economic output associated with marginal wells. Calculation based on 2018 RIA at Tables 4.1a, 4.1b, 4.2a, 4.5.6.

requests to exempt marginal or low production wells from the LDAR requirements in the Waste Prevention Rule, and BLM's proposal does not refute any of the facts or BLM statements related to that decision. As discussed in the comments on the Waste Prevention Rule by Joint Environmental Commenters⁹² and the Environmental Defense Fund,⁹³ numerous peer-reviewed studies indicate that marginal wells can have substantial methane emissions. For example, 75 marginal Barnett Shale well pads from the *Zavala-Araiza et al 2016* dataset had an average emission rate of 1.9 kg/h, higher than the 1.0 kg/h average of the full dataset. In the Marcellus shale, 18 conventional well pads had a median emission rate of 0.8 kg/h and a very high loss rate of 11% of gas production. Based on a conservative estimate of 0.8 kg/h/well, BLM's estimate of 68,972 marginal wells on Federal lands would emit 480,000 metric tons methane.

BLM itself in the Waste Prevention Rule rejected calls to exempt marginal wells, noting that 85 percent of wells on Federal and Indian leases are classified as low production wells, that "a decision to exclude these wells from the LDAR program would have a significant negative effect on the waste reduction benefits of this rule," and that commenters had failed to provide any data that would allow BLM to "conclude that low-production sites pose low leak risks and therefore merit exclusion from semi-annual LDAR."⁹⁴

The following recent studies (included in attachments to these comments) indicate that marginal wells can have significant losses of natural gas and emissions:

Zavala-Araiza, et al., (2015) "Toward a Functional Definition of Methane Super-Emitters: Application to Natural Gas Production Sites," *Environ. Sci. Technol.* 2015, 49, 13, at 8167–8174.

- The Barnett Shale study, which evaluated emissions from a sample made up mostly of natural gas wells, found that average emissions from low-producing wells were approximately 18.4 US ton/ year of methane – over 80% higher than the average emission rate for all wells included in the study.
- These are site-level emissions and include venting equipment like pneumatic devices and uncontrolled storage tanks that would not necessarily be addressed through an LDAR program. The data, however, suggest that improperly operating equipment are an important contributor to these high emissions. Indeed, many of the sites were functional

⁹² Clean Air Task Force, Earthjustice, Environmental Integrity Project, Environmental Law and Policy Center, Natural Resources Defense Council, and Sierra Club, Comments on Waste Prevention, Production Subject to Royalties, and Resource Conservation 66-71 (April 22, 2016) (included in attachments to these comments and incorporated by reference here).

⁹³ Environmental Defense Fund, Comments on Waste Prevention, Production Subject to Royalties, and Resource Conservation 32-33 (April 22, 2016) (included in attachments to these comments and incorporated by reference here).

⁹⁴ 81 Fed. Reg. at 83,030-31.

super-emitters (with loss rates greater than 1% of production) and several of these sites had very high production normalized loss rates (greater than 50% of production) that would not be expected from properly operating facilities, even those with uncontrolled storage tanks. Moreover, preliminary analysis attempting to recreate site-level emissions measurements in the Barnett using site-level component counts and emissions factors suggests that there is a gap, with measured emissions higher than calculated component-level emissions. This suggests that improperly operating equipment or other abnormal site-level conditions that could potentially be addressed through an LDAR program were important contributors to overall emissions.

David R. Lyon et al., Aerial Surveys of Elevated Hydrocarbon Emissions from Oil and Gas Production Sites, 50 Env'tl. Sci. & Tech. 4877 (Apr. 5, 2016).

- This study utilized helicopter surveys to document fugitive emissions from over 8,000 well sites in seven basins nationwide. The helicopter survey detection limit was 1 – 3 g/s total hydrocarbons, or approximately 30 to 100 tons per year, but it is likely that much of the observed tank emissions were VOCs. For instance, a study performed for TCEQ reported an average of 76% VOC in the flashing emissions of oil and condensate tanks.
- The study captured high-emitting sources and was not limited only to leaks. Similar to the Barnett, the authors concluded that not all emissions could be explained by tank flashing if all controls were operating properly. These sources could likely be addressed through a LDAR program to identify issues such as unlit flares and open hatches at controlled storage tanks.
- Based on an oil well definition of GOR $\leq 12,500$ scf/bbl, marginal oil wells had a greater occurrence of observed hydrocarbon emissions (4.9%) compared to all wells (4.0%) in the helicopter IR survey.
- 34% of the high-emitting wells detected in areas with ozone design values above the 2015 standard were marginal wells. These wells were located in the Uintah and Barnett.

M. Omara et al 2016, Methane Emissions from Conventional and Unconventional Natural Gas Production Sites in the Marcellus Shale Basin, 50 Env'tl. Sci. & Tech. 2099 (Feb. 16, 2016) (DOI: 10.1021/acs.est.5b05503).

- Site-level measurements of 35 well pads in the Marcellus found 85 times higher median production-normalized CH₄ emission rates from low production, conventional wells compared to high production, unconventional wells (11% vs 0.13%). Though these wells had lower absolute emissions rates, the average emissions of conventional wells was 0.82 kg/hr, which is equivalent to 7.9 TPY methane.
- Many of these sites were in the ozone nonattainment area or the ozone transport region.

c. BLM's Analysis of the Impacts of Its Rescission Proposal is Arbitrary and Incomplete.

In support of the Rescission Proposal, BLM has released the 2018 RIA, which suffers from numerous critical analytical flaws. Any attempt to justify or support the Rescission Proposal based on the deeply flawed 2018 RIA would be arbitrary and capricious. There are significant errors in the 2018 RIA related to BLM’s flawed, and artificially low, calculation of the dollar value of harm from climate change impacts driven by a given quantity of methane emissions. In addition, several flaws in the 2018 RIA’s methodology for estimating the costs and benefits of the Rescission Proposal further discredit the analysis and results.

1. BLM’s 2018 RIA Uses Fundamentally Flawed Estimates of the Harm from Methane-Driven Climate Change.

BLM includes in its proposal a calculation of the costs and benefits of the provisions of the Waste Prevention Rule that BLM proposes to rescind. The new calculation dramatically alters BLM’s previous benefits calculation, which was completed just over a year ago, and it slashes the Waste Prevention Rule’s projected benefits by 96% or 87%, depending upon the discount rate applied.⁹⁵

BLM produces these results primarily by assuming away almost all of the damages from climate change. Specifically, BLM makes two critical “interim” changes to the federal government’s prior standardized estimates of the cost of climate change – the “social cost of carbon” (“SCC”) or “social cost of methane” (“SCM”) estimates, which are expressed as dollars per ton of CO₂ or methane emitted to the atmosphere in a given year.⁹⁶ BLM’s revised estimates

⁹⁵ See 2018 RIA at Table 4.2c; 2016 RIA at 8-2a.

Table 1

Estimated Social Benefits of the 2016 Final Waste Prevention Rule (\$ in million)									
		2019	2020	2021	2022	2023	2024	2025	2026
2016 RIA	3% discount	\$207	\$208	\$209	\$227	\$227	\$246	\$246	\$247
2018 RIA	3% discount	\$27	\$28	\$29	\$30	\$31	\$32	\$33	\$34
	7% discount	\$8	\$9	\$9	\$10	\$10	\$11	\$11	\$11

⁹⁶ See Interagency Working Group on Social Cost of Greenhouse Gases, U.S. Government, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*, (Aug. 2016), https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf (“2016 SCC TSD”); Interagency Working Group on Social Cost of Greenhouse Gases, U.S. Government, *Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide* (Aug. 2016), https://www.epa.gov/sites/production/files/2016-12/documents/addendum_to_sc-ghg_tsd_august_2016.pdf.

represent a fundamental and unsupported change in how a federal agency evaluates and monetizes the harm caused by release of a given quantity of greenhouse gases.

When an agency’s “new policy rests upon factual findings that contradict those which underlay its prior policy” the agency must “provide a more detailed justification than what would suffice for a new policy created on a blank state.” *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009); *see also Action for Children's Television v. F.C.C.*, 821 F.2d 741, 745 (D.C. Cir. 1987) (“It is axiomatic that an agency choosing to alter its regulatory course must supply a *reasoned analysis* indicating its prior policies and standards are being deliberately changed, not casually ignored.”) (emphasis added). BLM’s use of the interim SCM is an inadequately explained change in position. Because the interim SCM contradicts the factual evidence underlying BLM’s prior SCM, BLM must provide a more detailed justification for its use. BLM’s failure to do so is arbitrary and capricious under the *Fox Television* standard, and BLM should continue to use its prior peer-reviewed SCM until it completes a similarly rigorous process to replace it.

The changes to the methodology for calculating the SCC and SCM erroneously make it appear that even the most cost-effective measures for reducing the impacts of climate change or preparing for it are not worth the cost. The changes also are contrary to BLM’s prior approach, widely accepted economic theory, the bulk of the peer-reviewed literature on climate science and cost-benefit assessment, recent recommendations on the SCC from the National Academies, and the approach taken in numerous other countries. These consequential, highly technical and exceedingly controversial changes were apparently adopted (in sharp contrast to the prior SCC and SCM) hastily with little analysis and no peer-review.

By contrast, the social cost of methane and underling social cost of carbon estimates used in the Waste Prevention Rule were developed through a multi-year inter-agency effort that has included extensive opportunities for public comment and peer review. This effort began in 2009 with the establishment of the Interagency Working Group on Social Cost of Carbon (“IWG”). Twelve federal agencies participated in the IWG, including the Council of Economic Advisors, the National Economic Council, the Office of Management and Budget (“OMB”), the Department of the Treasury, the Department of the Interior, the U.S. EPA, and the Office of Science and Technology Policy.⁹⁷ The IWG issued its first set of estimates of the social cost of carbon in 2010.⁹⁸ These estimates underwent public comment through their use in multiple

⁹⁷ Interagency Working Group on Social Cost of Carbon, United States Government, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (Feb. 2010), https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf.

⁹⁸ *Id.*

rulemakings, and the IWG formally updated the estimates in 2013, 2015 and 2016 (the last update included values specifically calculated for methane).⁹⁹ In 2015, the IWG asked the National Academies of Sciences, Engineering, and Medicine to review and make recommendations on the methodology for estimating the SCC. In 2016, in accordance with a first set of recommendations from the National Academies, the IWG retained the prior estimates while making some changes in the discussion of uncertainty around the estimates.¹⁰⁰ The IWG also issued an addendum to its documentation on the social cost of carbon that endorsed the social cost of methane estimates used in the Waste Prevention Rule, noting that those estimates had “undergone multiple stages of peer review and their use in regulatory analysis has been subject to public comment.”¹⁰¹ The National Academies issued its final report in 2017, which made recommendations for more comprehensive and longer-term updates to the methodology.¹⁰²

Notably, in its two extensive and detailed reports on updating the methodologies, the NAS did *not* recommend the changes BLM now seeks to make on an “interim” basis: a shift from global to domestic estimates and the use of a higher discount rate (let alone a 7% rate). In fact, the NAS final report critiques previous efforts to calculate a social cost of carbon based solely on U.S. damages, and concludes that an accurate assessment of domestic-only impacts is not possible using the existing integrated assessment model methodologies because they are not designed to produce global estimates and do not model all relevant interactions among regions.¹⁰³ The NAS further emphasized that effects that occur internationally may also have significant spill-over effects on the United States, which must be taken into account in any attempt to estimate domestic only impacts.¹⁰⁴ In short, the IWG’s 2016 estimates represent the U.S. government’s best estimate to date of the costs of climate change.

⁹⁹ Interagency Working Group on Social Cost of Carbon, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (May 2013, Revised July 2015), <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-tsd-final-july-2015.pdf>; 2016 SCC TSD.

¹⁰⁰ Committee on Assessing Approaches to Updating the Social Cost of Carbon, Board on Environmental Change and Society, National Academies of Sciences, Engineering, Medicine, *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update* (2016).

¹⁰¹ Interagency Working Group on Social Cost of Greenhouse Gases, *Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Analysis Under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide 3* (Aug. 2016).

¹⁰² Committee on Assessing Approaches to Updating the Social Cost of Carbon, Board on Environmental Change and Society, National Academies of Sciences, Engineering, Medicine, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017).

¹⁰³ *Id.* at 54.

¹⁰⁴ *Id.*

Nonetheless, in the Rescission Proposal, BLM uses a new “interim” estimate of the social costs of methane. Notably, instead of relying on the peer-reviewed Interagency Working Group social cost of methane, BLM relies on an admittedly “interim” one that was hastily cobbled together without *any* peer review. At the same time, BLM does not disclose the status of the federal government’s reconsideration of the social cost of methane, when any new social cost of methane will undergo peer review, or when it anticipates a new final social cost of methane. Rather, BLM continues to rely on an “interim” value, which uses the IWG’s methodology and relied on the same three integrated assessment models (IAMs), with two discrete changes that dramatically reduce the final values. BLM adjusted the cost estimates to attempt to exclude all economic damages from climate change that occur outside of the United States. But this ignores the impacts of these damages to the U.S. economy. The U.S. economy is highly integrated with the global economy. In 2016, U.S. exports accounted for 12% of GDP while imports accounted for 16% of GDP.¹⁰⁵ BLM also applied a much higher “discount rate,” which is used to estimate the present value of costs and benefits that occur in the future. BLM’s approach is fundamentally flawed and the results are invalid.

With these changes, BLM reduced the estimated social cost of methane in 2030 from \$1,729 per metric ton (using a 3% discount rate) under the final rule to \$81 or \$232 per metric ton (using a 7% or 3% discount rate, respectively).¹⁰⁶ Thus, the proposed rule erroneously eliminates 95% or 87% of the estimated cost of the harm from climate change associated with one ton of methane. It is worth noting that the IWG produced four sets of alternative estimates to account for alternative discount rates and the possibility of low-probability-high-cost damages, but BLM’s new estimates fall well below even the lowest value previously presented.¹⁰⁷ The effect is to reduce the estimate of the baseline benefits of the rule in 2019 from the \$207 million that BLM estimated in 2016 to either \$8 million or \$27 million, a reduction of 96% or 87%.¹⁰⁸

BLM utterly fails to provide any substantive explanation for these highly consequential and controversial methodological choices. Instead, BLM hides behind the bare assertion that Circular A-4 requires the use of a domestic social cost of methane and 7 percent discount rates.

¹⁰⁵ U.S. Dep’t of Commerce, Int’l Trade Admin., *U.S. Trade Overview 2016*, 5 (Apr. 2017) https://www.trade.gov/mas/ian/build/groups/public/@tg_ian/documents/webcontent/tg_ian_005537.pdf (last accessed Nov. 6, 2017).

¹⁰⁶ See 2016 RIA at 36; 2018 RIA at 35. Note that these numbers are not completely comparable, as the more recent estimate is expressed as 2016 dollars, while the earlier is expressed as 2012 dollars. The Waste Prevention Rule also presented alternative estimates for the social cost of methane using different discount rates and damage estimates – 5% average; 3% average; 2.5% average and 3% 95th percentile. The resulting values for 2030 range from \$822/metric ton to \$4,540/metric ton. 2016 RIA at 36.

¹⁰⁷ See *id.*

¹⁰⁸ See 2018 RIA at Table 4.2c; 2016 RIA at 8-2a.

See 2018 RIA at 34. As discussed in separate comments submitted by the Institute for Policy Integrity (“IPI comments”), this assertion is false: the IWG’s 2016 estimates were designed to be entirely consistent with Circular A-4. Indeed, BLM’s interim social cost of methane is inconsistent with Circular A-4 in many key respects, as discussed below and in Appendix 2. Moreover, Circular A-4 does not relieve BLM of the obligation to provide a well-reasoned, non-arbitrary explanation for its interim estimate of the social cost of methane. As discussed below and in Appendix 2, BLM has not and cannot do so because its approach is fundamentally flawed.

2. BLM’s 2018 RIA Includes Other Unwarranted Assumptions and Lacks Transparency.

In addition to the 2018 RIA’s problematic reliance on the “interim” social cost of methane, discussed above, the 2018 RIA suffers from incorrect fundamental assumptions about the regulatory baseline for the Rescission Proposal that render the 2018 RIA structurally flawed; selective revisions to the 2016 RIA, designed to artificially increase the cost estimates and lower the benefits estimates of the final Waste Prevention Rule, while ignoring additional information that suggests the costs of implementing the final Waste Prevention Rule are likely to be lower, and benefits are likely to be higher; and a lack of transparency concerning the methodology, data inputs, and assumptions in the 2018 RIA, resulting in significant, unexplained and unsupported changes from the analysis in the 2016 RIA.

i. BLM’s 2018 RIA makes several incorrect fundamental assumptions about the regulatory baseline for the Rescission Proposal.

In the 2018 RIA, BLM makes a fundamental assumption that renders the analysis supporting the Rescission Proposal in the RIA arbitrary. BLM assumes that no operators will make efforts to comply with the Waste Prevention Rule before 2019. This assumption conflicts with the fact that the Waste Prevention Rule took effect over a year ago on January 17, 2017, and operators have been legally required to comply with it for much of 2017 and 2018. Indeed, operators have announced that they are complying with the Rule. BLM’s assumption that operators will not comply until 2019 is therefore arbitrary.

In the 2018 RIA, BLM “considers the baseline where the 2016 final rule is effective with compliance starting in 2019,” and for each scenario analyzed, “assumed implementation begins in 2019 and not sooner.” 2018 RIA at 29. BLM attempts to justify this noncompliance assumption as follows: “While we would generally expect operators to start taking action towards compliance in advance of a deadline, because this proposed rule is a deregulatory action, we believe operators will be less likely to do so in this case, instead waiting for the outcome of the rulemaking process.” *Id.* Essentially, BLM appears to assume that the *proposed* Rescission will cause operators to abandon attempts to comply with the Waste Prevention Rule, including

provisions of the Waste Prevention Rule that went into effect in January 2017 and have been in effect, except for a six-week period ever since.¹⁰⁹ BLM provides no evidence to support this noncompliance assumption.

This noncompliance assumption is flatly inconsistent with the fact that the Waste Prevention Rule was fully in effect for much of 2017 and 2018. The Rule was published sixteen months ago, BLM's first attempt to delay provisions was held unlawful within four months, and BLM's second attempt to suspend standards was preliminarily enjoined within five weeks of its effective date. Furthermore, while BLM has, on two separate occasions, briefly and unlawfully suspended certain provisions of the Rule before their initial compliance dates, other provisions that BLM now proposes to rescind or revise have required compliance since January 17, 2017, and were not unlawfully suspended by BLM until almost a year later (a suspension that was only in effect for six weeks). It is unclear why BLM believes it is reasonable to assume that companies were not complying with these provisions, which include a requirement to submit waste minimization plans with an Application to Drill and requirements for well drilling and well completions. Despite the fact that BLM, as the agency responsible for implementing the Waste Prevention Rule, should know with certainty whether or not companies are complying with the Rule, particularly the provisions that required compliance *over a year ago*, BLM has supplied no evidence indicating companies are not complying with Rule to support its noncompliance assumption.¹¹⁰ Indeed, the Waste Prevention Rule was fully in effect on March 31, 2018 when operators' initial LDAR compliance reports were due to BLM, so BLM should know exactly which operators have and have not complied with the Waste Prevention Rule. *See* 43 C.F.R. § 3179.305.

¹⁰⁹ BLM's noncompliance assumption is evidence that the agency has prejudged the outcome of this rulemaking—the assumption does not make sense if BLM were to ultimately decide to retain, and not rescind or revise, the Rule. *See* Section V.

¹¹⁰ BLM's notation of the "uncertainty" associated with its noncompliance assumption is entirely inadequate to justify the agency's choice to make that assumption. *See* 2018 RIA at 36. While BLM correctly notes that if "the actual level of... compliance is higher than that assumed, then the estimated impacts of the delay of the requirements would be higher than reality," the agency does nothing to address the root cause of that uncertainty in its analysis—BLM's fundamentally questionable noncompliance assumption. *See id.* BLM further notes that the agency believes there is "[u]ncertainty about operator behavior, whether the initial estimated compliance activity that would be required by the 2016 final rule was accurate, and whether there was additional voluntary compliance activities undertaken by operators since the 2016 final rule was published in November 2016" and "[c]ontinued uncertainty over the amount of voluntary compliance currently occurring". *Id.* This is an incorrect characterization of the "uncertainty" associated with the noncompliance assumption—compliance with an effective regulation isn't "voluntary," and thus BLM should have compliance data that would redress the "uncertainty" over compliance levels.

Contrary to BLM’s lack of factual support underlying the noncompliance assumption, evidence indicates that companies are, in fact, complying with the Waste Prevention Rule. For example, XTO Energy, the production subsidiary of ExxonMobil, recently announced not just that “XTO is complying with recent ... Bureau of Land Management (Waste Prevention) regulations” but also that it will expend “considerable effort beyond regulatory requirements.”¹¹¹ Furthermore, a spokesperson for BLM recently indicated that BLM recognizes that “the full [Waste Prevention] rule is now in effect as promulgated” and “BLM expects operators to comply with all BLM regulations that are in effect.”¹¹²

If BLM’s assumption in the 2018 RIA that no companies are complying with the Waste Prevention Rule is incorrect, this fundamentally undercuts BLM’s articulated rationale for the Rescission Proposal of preventing compliance cost expenditures. Many of the compliance costs associated with the Waste Prevention Rule are capital investments in equipment upgrades, which BLM projected to be undertaken during the first few years that the Waste Prevention Rule was in effect. *See* 2016 RIA at 4-5. If companies have already made these capital investments to come into compliance with the Waste Prevention Rule, the compliance cost reductions associated with the Rescission Proposal would be dramatically less.

BLM must, at the least, provide evidence on why it believes no operators are in compliance in order to justify its noncompliance assumption, or must conduct an alternate analysis in which it assumes operators are in currently in compliance. BLM’s failure to do so in the 2018 RIA is arbitrary—the result is an estimate of industry cost savings that “lacks a reasonable basis.”

ii. BLM’s 2018 RIA lacks transparency, making unexplained and unsupported changes from the 2016 RIA.

Although BLM claims the 2018 RIA “generally uses the same underlying assumptions as in the RIA prepared for the 2016 final rule,” BLM acknowledges that it made “some notable changes” in the 2018 RIA. 2018 RIA at 29. BLM notes that it made changes to the estimation of the social cost of methane discussed above, as well as changes to estimates of administrative burdens and crude oil and natural gas price assumptions. *See* 2018 RIA at 28-29. BLM does not detail any other changes, “notable” or otherwise, that it has made from the 2016 RIA. For the changes that it does note, BLM does not disclose key data, assumptions or methodologies. This

¹¹¹ XTO Energy, *Methane Emissions Reduction Program* (last visited Mar. 29, 2018), <http://www.xtoenergy.com/en-us/responsibility/current-issues/air/xto-energy-methane-emissions-reduction-program>.

¹¹² Ellen Gilmer, “Interior not set to enforce revived methane rule — drillers,” E&E News (Mar. 29, 2018), available at <https://www.eenews.net/energywire/2018/03/29/stories/1060077681>.

lack of transparency renders BLM’s analysis arbitrary, and forecloses opportunities for meaningful public comment.

For “administrative burdens” associated with the Waste Prevention Rule, BLM states that it “concluded that the previously estimated administrative burdens were underestimated and adjusted those burden estimates upwards accordingly.” 2018 RIA at 32. In the 2018 RIA, BLM now estimates that the Rule imposes an administrative burden of \$10.7 million a year for industry and \$3.27 million a year for BLM. 2018 RIA at 32-33. This is a steep and unexplained increase from the administrative burden projected in the 2016 RIA, which estimate annual costs of \$5.5 million for industry and \$1.35 million for BLM. 2016 RIA at 96. While BLM notes the particular requirements for which it has revised estimates for number of responses and time required for each response, 2018 RIA at 64-70, it has entirely failed to explain how it arrived at those revised estimates beyond noting that “[d]evelopment of these values included consultation with States and BLM field offices to determine the level of expected response per provision.” *Id.* at 64. Without full disclosure of the basis and assumptions underlying these changes, there is no meaningful opportunity to comment on their appropriateness.

With respect to changes in price assumptions, BLM has not even listed the oil and gas price assumptions it uses in the 2018 RIA, nor has it described in detail the “downward” adjustment methodology used or that downward adjustment’s impact on price. 2018 RIA at 30. BLM instead cites generally to a January 2017 Energy Information Administration forecast, which shows similar price projections to those used in the 2016 RIA. 2018 RIA at n. 29. In contrast, in the 2016 RIA, BLM described specific price projections and a downward-adjustment methodology, and acknowledged that the methodology is very conservative. 2016 RIA Table 7-5.

It appears that this change in price assumptions has led to decreases in the estimates of cost savings and royalties attributable to the Rule in the 2018 RIA relative to the 2016 RIA. However, because BLM did not disclose its price assumptions in the 2018 RIA, it is impossible to evaluate the 2018 RIA analysis or understand why it differs from the 2016 RIA.

Table 1

Estimated Cost Savings from Natural Gas Recovery Under Waste Prevention Rule (\$ in million)								
	2019	2020	2021	2022	2023	2024	2025	2026
2016 RIA	\$54	\$76	\$79	\$92	\$110	\$140	\$157	\$152
2018 RIA	\$47	\$60	\$79	\$82	\$93	\$103	\$127	\$142

2018 RIA at Table 4.2a; 2016 RIA at Table 8-2a.

This lack of transparency is particularly problematic with the royalty estimates in the 2018 RIA. The 2018 RIA incremental royalty estimates attributable to the Waste Prevention Rule do not match the incremental royalties predicted in the 2016 RIA. BLM acknowledges in the 2018 RIA that the Rescission Proposal will result in lost royalties of “\$26.4 million (NPV using a 7% discount rate) or \$32.7 million (NPV using a 3% discount rate)” over a 10-year period, but this is a significant and unexplained change from the 2016 RIA, which projected the Waste Prevention Rule would increase royalties by \$65 million (NPV using a 7% discount rate) or \$82 million (NPV using a 3% discount rate) over ten years. 2018 RIA at 51; 2016 RIA Table 8-4b.

Because the estimated incremental production resulting from the Waste Prevention Rule is the same between the 2016 RIA and 2018 RIA, and the forecasted oil and natural gas prices from the Energy Information Administration are similar, it should follow that the incremental royalty as a result of the Waste Prevention Rule should be very similar. BLM’s analysis in the 2018 RIA is arbitrary and fails to explain the significant divergences from the agency’s previous analysis.

Table 2

Estimated Incremental Royalty Under Waste Prevention Rule (\$ in millions)								
	2019	2020	2021	2022	2023	2024	2025	2026
2016 RIA	\$6.8	\$6.9	\$3.7	\$3.8	\$6.9	\$10.3	\$10.2	\$9.0
2018 RIA	\$6.27	\$6.83	\$4.23	(\$1.08)	(\$0.38)	\$3.99	\$9.53	\$9.44

2018RIA Table 4.5b; 2016 RIA Table 8-4b.

3. BLM ignored information indicating that the costs of the Waste Prevention Rule would be lower or that benefits of the Rule would be higher when updating the underlying assumptions for the 2018 RIA, and improperly considered only monetized impacts.

BLM’s “notable changes” to the 2016 RIA analysis all had the effect of artificially lowering the estimates of benefits and royalties attributable to the final Waste Prevention Rule, while increasing estimates of compliance costs. Notably, however, BLM did not consider information indicating that the costs of the Waste Prevention Rule are actually *lower* than estimated in the 2016 RIA, or that the benefits of the Waste Prevention Rule are actually *higher* than estimated in the 2016 RIA, and BLM neglected to meaningfully analyze non-monetized impacts, such as those on public health, at all. BLM’s suggestions that the agency should not

consider climate benefits further underscore that this results-oriented analysis is arbitrary and that the Secretary has predetermined the outcome of this rulemaking based on his preferred course of action. BLM’s failure to consider “important aspect[s] of the problem” render its actions arbitrary and capricious. *State Farm*, 463 U.S. at 42-43.

For instance, evidence from producer Jonah Energy in Wyoming shows declining inspection costs as LDAR methods are improved—from less than \$99 per inspection in the first year of Jonah’s LDAR program to less than \$29 per inspection in the program’s fifth year—indicating that the compliance costs from the Waste Prevention Rule will likely decline over time, as well as cumulative gas savings that more than offset LDAR program costs.¹¹³ Major operators are now in compliance with the Waste Prevention Rule, and are even taking additional steps to reduce natural gas leakage, further indicating that the standards are cost-effective.¹¹⁴ In the 2016 RIA, BLM likewise noted that the LDAR cost and gas savings data that it used to calculate the cost and benefits estimates for the Waste Prevention Rule “likely understate the benefits of the BLM provisions, and may substantially understate them.” 2016 RIA at 87.

MJ Bradley and Associates conducted an analysis of LDAR costs and survey times, detailed in comments submitted to this docket by the Environmental Defense Fund, and found that annual LDAR compliance costs (as estimated by BLM) would represent less than 1% of total annual revenue for wells on BLM-managed lands for the years 2012-2016. MJ Bradley also analyzed LDAR compliance reports submitted to EPA pursuant to OOOOa, and found that LDAR survey time per wellhead averaged only 16.2 minutes. Likewise, analysis by the Environmental Defense Fund found that LDAR compliance costs would represent a small fraction of revenue for producers operating on BLM-managed land.¹¹⁵

Although BLM “revisited” the compliance costs associated with administration of the Rule and increased their estimates in the 2018 RIA, BLM appears to have failed to “revisit”

¹¹³ Jonah Energy, Presentation at Wyoming County Commissioners Association Spring Meeting (May 8, 2015); *see also* FLIR Systems, *Comments on BLM’s Proposed Waste Prevention Rule*, Docket ID BLM-2016-0001-9035 (April 22, 2016), available at <https://www.regulations.gov/document?D=BLM-2016-0001-9035>.

¹¹⁴ For example, as discussed *supra*, XTO Energy, the production subsidiary of ExxonMobil, recently announced that “XTO is complying with recent EPA (New Source Performance Standards) and Bureau of Land Management (Waste Prevention) regulations intended to reduce methane and volatile organic compound emissions... XTO has established a methane emissions reduction program that both ensures compliance with applicable regulations and expends considerable effort beyond regulatory requirements.” XTO Energy, *Methane Emissions Reduction Program* (last visited Nov. 6, 2017) <http://www.xtoenergy.com/responsibility/current-issues/air/xto-energy-methane-emissions-reduction-program#/section/1-regulatory-requirements>.

¹¹⁵ Environmental Defense Fund, Comments on Waste Prevention, Production Subject to Royalties, and Resource Conservation 32-33, 63-67 (April 22, 2016).

other cost estimates in the 2016 RIA where evidence suggests that compliance costs could be lower than previously projected, including for the LDAR requirements.

Instead, BLM “revisited” assumptions about the leak rates and the effectiveness of various inspection frequencies for LDAR and now “requests comment on whether the effectiveness of LDAR should be revised.” 2018 RIA at 30, 32. BLM’s discussion in this section, 2018 RIA at 31-32, of the benefits of semi-annual as compared to annual LDAR is misleading—BLM has not proposed to institute annual LDAR rather than semi-annual LDAR, but instead has proposed to rescind the LDAR requirements altogether. To the extent that “data suggest that the effectiveness of an annual LDAR program could be higher than [previously] assumed,” 2018 RIA at 32, that indicates that BLM should analyze the alternative of implementing an annual LDAR program rather than rescinding the LDAR requirements. BLM has failed to evaluate such an alternative in the Rescission Proposal, and, in any event, has failed to produce any data substantiating its claims about the relative effectiveness of different frequencies of LDAR.

BLM also neglected to meaningfully analyze the loss of public health and safety benefits generated by implementing the Waste Prevention Rule due to the Rescission Proposal. *See* 2016 RIA at 6-7; 81 Fed. Reg. at 83,014, 83,049. Public health benefits occur because the waste prevention requirements in the Rule also reduce air pollution from volatile organic chemicals, fine particulate matter and other hazardous air pollutants, resulting in significant benefits to public health. In addition, BLM neglects to analyze the impacts of the Rescission Proposal for worker safety, one of the purposes of the Waste Prevention Rule. *See* 81 Fed. Reg. at 83,049 (“[T]he requirement to flare rather than vent associated gas is justified as a safety measure under the MLA.”). BLM also fails to even mention in the RIA the impacts of noise pollution and light pollution from flaring on nearby communities and wildlife.

Instead, in the 2018 RIA, BLM improperly considered only the monetized costs and benefits of the rule, failing to analyze the lost public health and safety benefits. This analysis violates Executive Order 12,866, which states an “agency shall assess both the costs and the benefits of the intended regulation and, *recognizing that some costs and benefits are difficult to quantify*, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs,” and is arbitrary and capricious. E.O. 12,866 Sec. 1(b)(6) (emphasis added); *see also* 2016 RIA at 9 (purpose of economic analysis under E.O. 12,866 is to determine that the “potential benefits to society justify the potential costs, *recognizing that not all benefits and costs can be described in monetary or even in quantitative terms* (emphasis added)).

In addition, at least some of the lost public health benefits are routinely monetized in other agencies’ rulemakings and should be here as well. Given that one of BLM’s rationales for

the Rescission Proposal is that the newly calculated monetized costs outweigh the monetized benefits, BLM now has an obligation not to exclude benefits that could be monetized. The fact that these benefits were not monetized in the Waste Prevention Rule is not determinative here because in that rulemaking, BLM found that the monetized benefits outweighed the monetized costs even before taking the health benefits into account, so considering those benefits without monetizing them made no difference to the outcome of the rulemaking. That is not necessarily the case here.

The 2018 RIA entirely fails to discuss the lost benefits for public health that will result from the Rescission Proposal, despite acknowledging the Rescission Proposal will cause additional VOC emissions of 2.59 million tons over ten years. 2018 RIA at 39. Discussion of the public health impacts of the Rescission Proposal in the 2018 EA is likewise entirely inadequate—BLM notes the Rescission Proposal will cause additional hazardous air pollutant of up to 2,030 tons per year along with additional VOC emissions, but does not analyze what the impact of these additional emissions is on public health. 2018 EA at 19. The entirety of BLM’s discussion of health impacts due to these additional air pollutants is found in one sentence: “These air pollutants affect the health and welfare of humans, as well as the health of plant and wildlife species.” *Id.* This is entirely insufficient to support the Rescission Rule, and appears that BLM is “simply ‘casually ignoring’ all of its previous findings” of public health benefits when it issued the Waste Prevention Rule. *California*, 2018 WL 1014644 at *10 (quoting *Action for Children's Television v. FCC*, 821 F.2d 741, 745 (D.C. Cir. 1987)).

Although it monetized climate impacts in the 2018 RIA (using an artificially discounted interim SCM, as discussed above and in the IPI Comment), BLM also suggested that it believes it is improper to consider societal benefits from lower GHG emissions under the MLA. 2018 RIA at 35. As an initial matter, Circular A-4 requires agencies to “look beyond the direct benefits and direct costs of your rulemaking and consider any important ancillary benefits and countervailing risks.” Circular A-4 § E.6.

More fundamentally, BLM’s statement that “BLM does not consider the monetized benefits of avoiding GHG emissions as a statutory basis under the MLA for rulemaking in this area” because the MLA “does not include climate-related benefits from changes in GHG emissions as factors that BLM should consider in exercising” waste prevention authority is fundamentally incorrect and inconsistent with BLM’s statutory obligations. 2018 RIA at 34. One of the purposes of the MLA is “safeguarding of the public welfare,” which encompasses environmental harms. 30 U.S.C. § 187 (requiring lease terms for these purposes); *Natural Res. Def. Council v. Berkland*, 458 F. Supp. 925, 936 (D.D.C. 1978) (Section 187’s public welfare goal gives BLM “broad authority to set lease terms to prevent environmental harm.”). And under FLPMA, BLM must manage public lands for multiple use and “in a manner that will protect the quality of the scientific, scenic, historical, ecological, environmental, air and atmospheric, water

resource, and archeological values.” 43 U.S.C. § 1701(a)(8), 1702(c); *see also* 43 U.S.C. § 1732(b) (BLM “shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands”).

In analogous circumstances, courts have rejected arguments that federal agencies are unable to consider the benefits of greenhouse gas reductions when evaluating regulatory actions, and in many cases are *required* to do so. *See Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1203 (9th Cir. 2008) (holding that NHTSA was required to monetize the benefit of carbon emissions reduction in its analysis of the proper fuel economy standards); *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (rejecting industry argument that the Energy Policy and Conservation Act “does not allow DOE to consider environmental factors” and holding that in determining “whether an energy conservation measure is appropriate under a cost-benefit analysis, the expected reduction in environmental costs needs to be taken into account”); *see also Michigan v. EPA*, 135 S. Ct. 2699, 2709 (2014) (faulting EPA for not taking into account all relevant factors including both direct and indirect costs). BLM’s statutory authorities likewise require the agency to analyze the impacts of its actions on the public welfare and the environment.

4. BLM Improperly Disregards Impacts Associated with Lost Royalties and Impacts on Tribal Lands

While BLM acknowledges that the “proposed rule is expected to result in forgone royalty payments to the Federal Government, tribal governments, States, and private landowners,” it fails to address the impacts of reduced royalty revenues to state, local and tribal governments. 2018 RIA at 51. In its analysis of royalty impacts, BLM forecasts a reduction in royalties of up to \$32.7 million over ten years due to the Rescission Proposal, *id.*, and lost royalties of up to \$4.9 million on tribal leases over the same period, *id.* at 54.¹¹⁶ BLM states that these lost royalties are neither a cost nor a benefit of the rule, because “[r]oyalty payments are recurring income to Federal or tribal governments and costs to the operator or lessee. As such, they are transfer payments that do not affect the total resources available to society.” 2018 RIA at 50.

However, BLM’s treatment of royalties and tribal impacts ignores a fundamental purpose of BLM’s statutory mandates—BLM’s obligation to manage oil and gas development on public lands for the benefit of the public and tribal royalty owners. *See supra* Section III; *California Co.*, 296 F.2d at 388 (MLA is “intended to promote wise development of these natural resources and to obtain for the public a reasonable financial return on assets that 'belong' to the public.”).

¹¹⁶ As discussed in these comments BLM’s calculation of royalty impacts in the 2018 RIA is an arbitrarily unexplained change from the 2016 RIA, which suggests the Rescission Proposal would result in even greater lost royalties.

BLM attempts to dodge any analysis of the impact of the Proposal on its ability to “obtain for the public a reasonable financial return on assets that belong to the public,” 296 F.2d at 388, in the 2017 RIA, merely stating that “[w]hile transfers should not be included in the economic analysis estimates of the benefits and costs of a regulation, *they may be important for describing the distributional effects of a regulation.*” 2018 RIA at 50 (emphasis added). While BLM follows the OMB Circular A-4 instruction that “[y]ou should not include transfers in the estimates of the benefits and costs of a regulation,” it entirely ignores the second part of the guidance—to “[i]nstead, address them in a separate discussion of the regulation’s distributional effects.” OMB Circular A-4. Office of Mgmt. & Budget, *Circular A-4, Regulatory Analysis* at 38 (Sept. 2003) (“Circular A-4”). No such description is forthcoming. This omission is particularly glaring, since BLM is obligated to consider royalty and tribal impacts not just as “distributional effects” under OMB guidance, but as part of its fundamental statutory obligations.

Changes in royalties due to the Rescission Proposal will also have significant impacts on state, tribal, and local governments. Natural gas royalties are an important source of revenues for state governments with significant natural gas production on Federal lands (see Table 3).¹¹⁷ States have different policies for sharing federal mineral royalties with local governments. BLM must consider and discuss the effect of lost royalty revenues to state, tribal, and local governments from the Rescission Proposal.

Table 3

Natural Gas Royalties for Key Western States, FY 2015 (\$ millions)		
State	Royalty Payment	Percent of all federal royalties
Wyoming	\$199.9	22.4%
New Mexico	\$135.0	27.0%
Colorado	\$51.6	41.3%
Utah	\$40.8	34.8%

d. The initial concerns expressed by the District of Wyoming are not a good reason to rescind the Waste Prevention Rule.

In the proposal, BLM notes that it “is not confident that all of the provisions of the [Waste Prevention Rule] would survive judicial review,” citing pending litigation challenging the Waste Prevention Rule, *Wyoming v. U.S. Dep’t of Interior*, Case No. 2:16-cv-00285-SWS (D. Wyo.). 83 Fed. Reg. at 7,927. BLM does not explicitly rely on the district court’s concerns to

¹¹⁷ See Headwaters Economics, Economics Profile System, *A Profile of Federal Land Payments, State Region: Wyoming; New Mexico; Colorado; Utah* (Nov. 2, 2017), <https://headwaterseconomics.org/tools/economic-profile-system/>

justify the rescission. For several reasons, the “concerns” expressed by the Wyoming district court, *id.*, are not good reasons to rescind the Rule.

First, as BLM concedes, *id.*, the Wyoming district court *denied* the challengers’ motions for a preliminary injunction, explicitly concluding that they had *not* shown a likelihood of success on the merits. *Wyoming*, 2017 WL 161428 (D. Wyo. Jan. 16, 2017).

Second, since at least June, 2017, BLM (and many of the Rule’s challengers) have actively worked to prevent the district court from actually deciding the merits of the case. *E.g.*, Federal Respondents’ Motion to Extend Briefing Schedule, *Wyoming*, ECF No. 129 (June 20, 2017); Federal Respondents’ Motion to Dismiss, *Wyoming*, ECF No. 176 (Dec. 11, 2017). BLM thus seeks to have it both ways—to take advantage of the initial “concerns” of the district court without ever having those concerns resolved one way or the other.

Third, the courts have rejected similar attempts to rely on judicial findings to skirt the usual administrative obligations for promulgating, revising or rescinding rules. For example, in *California ex rel. Lockyer v. U.S. Dep’t of Agric.*, 575 F.3d 999, 1016 (9th Cir. 2009), the court rejected the agency’s attempt to avoid doing an environmental analysis of a major change to the nation’s roadless policy because a federal district judge had vacated the earlier policy. The court noted that this was simply “USDA’s preferred response to an untested district court injunction that was subject to possible reversal in a pending appeal,” and found “unreasonable, in the midst of this admitted uncertainty, the USDA’s position that the Wyoming injunction permanently removed all protections afforded,” and that the regulatory change was thus a “paper exercise.” *Id.* Here, there was not even a final injunction granted after a final decision on the merits (something BLM has worked hard to ensure), but only initial concerns raised by a district court judge in concluding that challengers were *not* likely to succeed on the merits of their challenge to the Rule. Regardless of the initial “concerns” of the district court, BLM must satisfy the substantive and procedural obligations of the APA to thoroughly justify the rescission.

Finally, BLM has never confessed error or claimed that it did not have authority to promulgate the Waste Prevention Rule. And for good reason. As BLM concedes, 83 Fed. Reg. at 2927, the Mineral Leasing Act requires lessees to “use all reasonable precautions to prevent the waste of oil or gas,” 30 U.S.C. § 225, and authorizes the Secretary of the Interior to prescribe rules “for the prevention of undue waste,” *id.* § 187. As we have explained many times, the Waste Prevention Rule—aimed at fulfilling these statutory obligations, as well as obligations under other statutes including the Federal Land Policy and Management Act—was well within BLM’s authority to promulgate. *See, e.g.*, Citizen Groups’ Response Brief, *Wyoming*, ECF No. 175 (Dec. 11, 2017) (Citizen Groups’ Resp.) (attached as an exhibit).

Importantly, contrary to BLM’s current suggestion, 83 Fed. Reg. at 2927, every provision of the Waste Prevention Rule is intended to, and has the effect of, reducing waste of natural gas. *See* Citizen Groups’ Resp. 14. The fact that the reducing waste *also* reduces dangerous air pollution is the necessary result of the fact that methane—a potent climate pollutant—is the primary component of natural gas, but this is a virtue of the Waste Prevention Rule, not a vice. Moreover, nowhere does the Mineral Leasing Act or BLM’s other authorizing statutes limit what BLM may regulate to what is economically beneficial to BLM’s lessees. Indeed, as explained in these comments, these statutes direct the Secretary of the Interior and BLM to safeguard the *public* welfare and interest in the development of publicly-owned minerals, *not* the interest of lessees. *See also* Citizen Groups’ Resp. 11-12, 19-20, 30-32. Thus, when assessing what constitutes “all” reasonable precautions to prevent waste, BLM must look beyond the financial interests of a very small subset of the public—the operators of oil and gas wells. The Waste Prevention Rule does so by requiring operators to implement precautions that all result in reducing the waste of publicly-owned gas and benefiting the American public. Finally, there is no principled distinction between “resource conservation benefits” and “environmental and societal benefits.” *Contra* 83 Fed. Reg. 2927. The environmental and societal benefits of the Waste Prevention Rule, just like the financial benefits to operators in the form of cost savings, are indirect benefits of resource conservation (i.e., reducing waste of natural gas). *See* Citizen Groups’ Resp. 32-37.

e. A detailed comparison of the Waste Prevention Rule and current state natural gas waste rules shows that state rules do not come close to providing the depth and breadth of the Waste Prevention Rule.

BLM’s proposal to rely on state standards to fill the gaps left by rescission of the Waste Prevention Rule suffers from three fundamental flaws that render it arbitrary. First, state rules vary widely between states and it is arbitrary and capricious to conclude that what constitutes all reasonable precautions to prevent the waste of gas on federal and Tribal lands varies wildly depending on the state in which the land is located. Second, most state requirements are far less stringent than the Waste Prevention Rule, which BLM previously found constituted “all reasonable precaution to prevent waste.” 81 Fed. Reg. 83,009 (citing 30 U.S.C. § 225). Third, even when states have requirements intended to prevent natural gas waste, those standards vary widely in effectiveness, as evidenced by an analysis of the 2018 RIA as well as the shortcomings of North Dakota’s gas capture targets—rendering BLM’s failure to conduct any detailed evaluation of the effectiveness of state regulations particularly arbitrary.

First, even if state-level requirements—that are by definition only applicable within each particular state—would be able to fill gaps left by rescission of the Waste Prevention Rule in the states where those rules are applicable, these requirements cannot satisfy BLM’s nationwide obligation to prevent waste, and the inconsistencies caused by the reliance on multiple state

regulations are arbitrary and capricious. *See Fox Television*, 556 U.S. at 515–16 (agency must show that the new policy is permissible under its governing statutes). BLM’s statutory duties to prevent waste require consistent federal level requirements that establish a threshold for waste prevention on federal public lands and resources, regardless of what state those public lands and resources may be found in. The MLA, which requires all lessees to be subject to the condition that they will “use all reasonable precautions to prevent waste of oil or gas” cannot mean different things for operators depending on which state their leases are in.

Indeed, the patchwork of state-level provisions—provisions that can and do change over time—was a reason why the Waste Prevention Rule strengthened and imposed national-level requirements in the first place. Recognizing that state-level requirements *may*, in certain instances, satisfy the BLM’s responsibilities to prevent waste (i.e., meet or exceed the threshold required by the MLA), BLM provided for exemptions as well as state and tribal variances. *See, e.g.*, 43 C.F.R. § 3179.401. BLM recognized this in the Waste Prevention Rule, noting that “because State laws and regulations are subject to change, BLM reliance on State standards risks additional waste of public resources and adverse environmental impacts to Federal and Indian lands should the State standards change to allow for additional waste and environmental impacts. There is therefore a need for uniform, modern waste reduction standards for oil and gas operations on public and Indian lands across the country.”¹¹⁸ Even if BLM had found that the regulations in each and every state met or exceeded the waste prevention requirements of the Waste Prevention Rule, there is nothing to prevent states from weakening their waste prevention rules, further compromising BLM’s reliance on them. Indeed, as discussed, North Dakota has done exactly that, weakening its gas capture regulations since the time of the Rescission Proposal.

Second, it is arbitrary to rely on state standards to fulfil BLM’s waste prevention obligations because state standards vary widely, with most falling far short of what BLM previously determined constituted “all reasonable precautions to prevent waste” in the Waste Prevention Rule. 81 Fed. Reg. 83,009 (citing 30 U.S.C. § 225). When an agency changes a policy position, it must “show that there are good reasons for the new policy,” which requires a more detailed explanation where the “new policy rests upon factual findings that contradict those which underlay its prior policy.” *Fox Television*, 556 U.S. at 515–16 (emphasis omitted). Here, BLM has failed to provide any good reasons for why it now believes state standards are adequate to fulfil its statutory obligation to require “all reasonable precautions to prevent waste;” let alone the detailed explanation for why it is changing its position from that in the Waste Prevention Rule required for effectuating a change in policy under *Fox Television*.

In Appendix 3, we compare the Waste Prevention Rule with the waste prevention regulations of seven Western states which BLM has identified as contributing the vast majority

¹¹⁸ 81 Fed. Reg. at 83,019.

of oil and gas production on Federal lands and as having waste regulations that apply to oil and gas operations on Federal lands. In order of federal oil and gas production, they are NM, WY, CO, ND, UT, CA, and MT.¹¹⁹ As discussed in Appendix 3, requirements vary widely by state, with most state requirements providing significantly less precautions against natural gas loss and emissions than the Waste Prevention Rule. This thorough comparison of state rules with the Waste Prevention Rule reveals major gaps in state coverage.

These gaps exist for bans on venting, requirements to flare rather than vent, and requirements to control waste from drilling and completions, pneumatic controllers and pumps, well maintenance and liquids unloading, leaks, authority to curtail production, and requirements for waste minimization plans. Each state has rules regarding the flaring of associated gas. However, some state rules have no volume or time limits, and others provide for exemptions without rigorous criteria. Each state also has rules to control VOC emissions from storage tanks; however, these rules vary in stringency. New Mexico, Wyoming, Colorado, and Utah do not place bans on venting comparable to the Waste Prevention Rule. The most significant source of venting, pneumatic controllers, is unregulated in New Mexico and North Dakota and only regulated in the Upper Green River Basin region in Wyoming. Leaks are unregulated in New Mexico, North Dakota, and Montana, and leak detection requirements vary widely in stringency in other states. And as shown in Appendix 3, while most states regulate flaring, storage tanks and well purging/liquids unloading in some manner, these rules are generally less stringent than, and do not provide the same rigor for exemptions (that costs would cause well production to cease and significant reserves to be abandoned) as the Waste Prevention Rule.

Third, even assuming, *arguendo*, that a consistent, national-level framework to prevent natural gas waste on public lands and resources, regardless of state boundaries, is not necessary, BLM has not evaluated the efficacy of each state's particular approach to demonstrate that it satisfies the agency's separate and independent duty to comply with the statutory duties provided by the MLA, FLPMA, and IMLA. Instead, BLM has simply provided a conclusory one-page memo that references short summaries of state-level requirements. BLM provides no quantitative data or assessment of the efficacy of each state's approach, let alone whether those approaches conform to BLM's separate and independent duty to prevent waste. The mere existence of "current regulations that restrict the venting and flaring of gas from oil and gas wells" is, standing alone, insufficient. This failure and gap in logic violates BLM's requirement under *Fox Television*, 556 U.S. at 515–16, to provide a reasoned explanation for departing from the Waste Prevention Rule, and is arbitrary and capricious.¹²⁰

¹¹⁹ Memorandum from Timothy Spisak, BLM, Review of State Venting and Flaring Regulations (Oct. 19, 2017) ("BLM State Memo").

¹²⁰ While BLM did provide a memo that explained the requirements, it did not look at their effectiveness at reducing flaring. By deferring to these state regulations, BLM is effectively

In its proposal, BLM states that “some States with significant Federal oil and gas production have similar regulations addressing the loss of gas” from the sources which BLM seeks to deregulate. 83 Fed. Reg. 7926. For example, in place of 43 C.F.R. 3179.7, which regulates flaring by establishing gas capture requirements, BLM proposes to “defer[] to State or tribal regulations where possible and codify[] the . . . NTL-4A standard . . . as a backstop where no applicable State or tribal regulation exists.” 83 Fed. Reg. 7930. But in so doing, BLM fails to analyze the effectiveness of *any* of the state regulations that it proposes to defer to, let alone the impacts of these state regulations on oil and gas sources on public and Tribal lands.

The data provided by the 2018 RIA indicates that the efficacy of state and tribal regulations is a critical factor essential to a reasoned and informed decision regarding the Rescission Proposal. Before the Waste Prevention Rule went into effect, BLM venting and flaring operations were governed by both NTL-4A and applicable state rules. Yet data provided by BLM in the 2018 RIA on venting and flaring on Federal and Indian lands in 2014 directly contradicts the assertion that state rules have been effective in preventing waste or that NTL-4A provides an adequate backstop. In Table 2.7b of the RIA, BLM identifies a total of 111 Bcf of gas wasted on federal lands in 2014, prior to the adoption of the Waste Prevention Rule.¹²¹ Of this amount, roughly 77 Bcf (70%) of waste on Federal and Indian leases was associated gas flared at oil wells.¹²² An additional 4 Bcf (4%) was flared at gas wells, despite the NTL-4a ban on the flaring of gas at gas wells.¹²³

Beyond this waste of gas through flaring, Table 2.7b also shows that significant quantities of gas were being wasted through venting prior to the Waste Prevention Rule, despite NTL-4A and applicable state rules, totaling roughly 26 Bcf (26%) of all wasted gas in 2014.¹²⁴ Roughly 19 Bcf, or over 70% of all venting, occurred at gas wells while roughly 7 Bcf (24%) was vented at oil wells.¹²⁵ As shown, venting occurred primarily at gas wells, again running counter to bans on venting at gas wells contained in NTL-4a, as well as venting bans in North Dakota, California and Montana as discussed below. Pneumatic controllers were the source of over half of all venting or almost 15 Bcf, with 7.64 Bcf vented at gas wells and 7.29 Bcf vented

adopting these standards as its own, and a mere statement of what they are without evaluating them in any way is inadequate.

¹²¹ 2018 RIA at 20 (Table 2.7b: Estimated Venting and Flaring from Federal and Indian Leases in 2014).

¹²² *Id.*

¹²³ *Id.*, NTL-4a Section IV.A.

¹²⁴ 2018 RIA at 20 (Table 2.7b). Percentage calculated as 23.05 Bcf total released from gas wells – 3.98 Bcf flared from gas wells + 7.29 vented from oil wells.

¹²⁵ *Id.*

at oil wells.¹²⁶ According to BLM, additional sources of venting which occurred almost exclusively at gas wells despite the NTL-4a ban include 4.01 Bcf from leaks, 3.26 from liquids unloading (NTL-4a excludes short-term venting from liquids unloading from its ban¹²⁷), 2.94 Bcf from storage tanks (split roughly evenly between gas and oil wells), 2.32 Bcf from pneumatic pumps (with 60% at gas wells), and 2.7 Bcf from well completions and workovers, gas engines, and compressors.¹²⁸

The chronic gaps, deficiencies, and limitations of state and tribal regulations is particularly acute relative, as explained below, to the gas capture requirements in North Dakota, which still allow for large volumes of gas to be flared—well above what the requirements say are allowed. By failing to evaluate the effectiveness of state programs, BLM has not “examine[d] the relevant data and articulate[d] a satisfactory explanation for its action.” *Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

Furthermore, most of these state regulations were in place and applicable to operators on federal lands when gas losses on public lands dramatically increased and triggered BLM and others' concerns about the large quantities of waste. As a matter of record, the state requirements have failed to prevent the ongoing waste of the public's gas resources, and BLM makes no attempt to show that they would produce any different result in the future.

A. An In-Depth Analysis of Flaring in North Dakota Shows that the North Dakota Industrial Commission's Gas Capture Requirements Fail to Prevent Waste

In addition to BLM's failure to analyze the impacts of state regulations to which it proposes to defer on oil and gas sources on public lands, an analysis of the effectiveness of the North Dakota Industrial Commission's (NDIC's) Order 24665 shows that Order 24665 fails to adequately prevent wasteful flaring.¹²⁹ As such, BLM's reliance on this state regulation is arbitrary and capricious.¹³⁰

¹²⁶ *Id.*

¹²⁷ NTL-4a, Section III.B.

¹²⁸ 2018 RIA at 20 (Table 2.7b).

¹²⁹ This analysis was performed prior to NDIC's announcement that it was weakening its gas capture requirements. See Environmental Defense Fund, *North Dakota Weakens Natural Gas Flaring Policy* (Apr. 17, 2018) <https://www.edf.org/media/north-dakota-weakens-natural-gas-flaring-policy>.]. The fact that NDIC is weakening the standards, however, only serves to further suggest that BLM's deference to state standards is arbitrary and capricious.

¹³⁰ BLM's proposal is to defer to any state regulation, regardless of its effectiveness, relying only on NTL-4A when a state has done nothing. See 83 Fed. Reg. 7930/2.

In 2014, when North Dakota flared over a quarter of the gas it produced, the North Dakota Industrial Commission (NDIC) issued Order 24665,¹³¹ setting gas capture goals for operators with wells in the Bakken and Three Forks Pools.¹³² These pools have been the source of lion’s share of North Dakota flaring. Under this Order, operators of Bakken and Three Forks wells are supposed to capture a set amount of gas for every month beginning in October 2014 or face possible curtailment.¹³³ For each month in 2017, operators were to capture 85% of the gas they produced from those pools during every month in 2017.¹³⁴

While the collective gas capture percentage for wells statewide and in the Bakken and Three Forks pools has increased over the ensuing years as development has slowed, the absolute level of flaring remains high. In 2017, operators statewide flared over 85 billion cubic feet of gas, almost eight times the amount of residential consumption of natural gas in North Dakota.¹³⁵

More importantly, a number of operators of Three Forks and Bakken wells consistently exceed the gas capture standard, without suffering any sanction from the NDIC.

Such wasteful exceedances were determined based on a review performed by David McCabe and Lesley Fleischman of Clean Air Task Force (CATF) of NDIC data on gas production and gas flared for each month in 2017. Mr. McCabe and Ms. Fleischman then calculated the gas capture percentage for each operator.¹³⁶ Gas capture percentages were calculated in the way that NDIC prescribes. in Order 24665 As mentioned above, the Order only applies to wells in the Bakken, Bakken/Three Forks, and Three Forks pools (referred to as “B3F wells” hereafter).¹³⁷ Furthermore, the operator is allowed to remove the initial 14 days of flowback gas from new

¹³¹ <https://www.dmr.nd.gov/oilgas/or24665.pdf>.

¹³² Order 24665, §4.

¹³³ *Id.*

¹³⁴ The gas capture goals were last updated in November 2015 in “North Dakota Industrial Commission Order 24665 Policy/Guidance Version 102215.”

<https://www.dmr.nd.gov/oilgas/GuidancePolicyNorthDakotaIndustrialCommissionorder24665.pdf>. The values discussed in this document are from that Policy Guidance.

¹³⁵ Based on CATF analysis of flaring data from NDIC (see note below). Data on residential natural gas consumption in North Dakota in 2017 from US Energy Information Administration. https://www.eia.gov/dnav/ng/ng_cons_sum_a_EPG0_vrs_mmcf_a.htm.

¹³⁶ Data obtained for October 2016 to December 2017 from NDIC’s Monthly Production Reports (available at: <https://www.dmr.nd.gov/oilgas/mprindex.asp>). This data includes oil production, gas production, gas sold, and gas flared for every well in the state. We combined this data with data from NDIC’s Well Index (available at: <https://www.dmr.nd.gov/oilgas/basicsservice.asp>). This data includes the initial production test date for every well in the state.

¹³⁷ Order 24665, §4.

wells when they calculate the percentage of gas they capture.¹³⁸ As such, we only considered data from B3F wells in that had been producing for at least 14 days in the analysis below.¹³⁹

For clarity, we present data on the flaring rate below.¹⁴⁰ Order 24665 requires operators to capture at least 85% of the gas that they produced, on a monthly basis, for each month in 2017.¹⁴¹ Therefore, companies are out of compliance with the rule if they are flaring more than 15% of the gas they produce.

As a first step we examine the monthly B3F flaring rates (excluding the initial 14 days of flowback gas from new wells) for the largest North Dakota operators. These flaring rates are shown in Table 4. In this table, we have highlighted monthly flaring rates that exceed 15.0%.

As can be seen in Table 4, of the top 30 gas producing companies in the B3F pools, 19 companies exceeded the flaring percentage requirement in at least 1 month of 2017, and 7 companies exceeded the percentage requirement, on average, for the entire year.

Table 4: 2017 Monthly Gas Flaring Percentages for Bakken/Three Forks Wells for 30 Largest Gas Producers.

Company	ANNUAL			Monthly Flaring Percentage (%)											
	Gas Prod MMC F	Gas Flared MMC F	Flare %	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WHITING	82,079	5,719	7	6	5	5	5	6	7	5	7	14	13	6	5
CONTINENTAL	63,298	5,419	9	12	7	7	9	7	8	10	9	10	10	8	6
HESS	56,370	7,999	14	19	15	15	14	13	13	12	14	14	15	14	14
XTO	55,044	5,755	10	10	10	9	8	8	10	14	10	12	13	8	12
OASIS	49,209	5,378	11	14	9	6	4	10	11	10	12	19	6	11	19
BURLINGTON	42,028	1,375	3	6	4	3	2	2	3	3	4	4	3	2	3
QEP	30,213	2,369	8	8	6	6	6	7	8	5	6	14	11	9	8
EOG	28,114	2,191	8	10	6	5	5	6	18	10	9	7	5	9	4
STATOIL	26,473	2,534	10	13	8	8	11	10	4	7	10	11	14	8	9
MARATHON	18,043	3,183	18	12	13	10	9	9	12	16	13	21	30	29	28
NEWFIELD	17,619	1,803	10	3	5	4	7	9	9	16	14	13	17	11	8
ZAVANA	14,434	586	4	6	6	5	4	3	4	3	4	3	3	4	3
WPX	13,711	4,206	31	20	34	28	28	30	23	28	37	44	33	37	20
HRC	12,505	2,220	18	16	10	8	13	18	19	18	19	40	20	19	0
PETRO-HUNT	12,278	883	7	5	1	4	5	9	3	12	9	13	16	6	3
SLAWSON	8,778	1,075	12	9	27	20	13	7	6	8	5	11	15	14	12
ENERPLUS	7,124	953	13	16	9	11	14	12	12	13	19	14	15	11	13

¹³⁸ *Id.*

¹³⁹ We had access to monthly gas production and flaring data, not daily data. Therefore, we conservatively removed all data from wells that could have possibly fallen into this 14 day window.

¹⁴⁰ The flaring percentage is 100% minus the gas capture percentage.

¹⁴¹ North Dakota Industrial Commission Order 24665 Policy/Guidance Version 102215, p. 2.

SM ENERGY	5,127	362	7	5	9	9	6	6	4	5	16	3	16	3	3
LIBERTY	4,837	829	17	19	23	20	27	20	15	13	11	11	17	19	19
ABRAXAS	4,785	128	3	2	0	1	1	1	1	4	2	8	6	0	8
LIME ROCK	3,892	504	13	12	23	12	12	11	11	13	15	13	12	11	13
NINE POINT	3,331	246	7	0	0	0	0	6	7	6	11	7	8	6	8
RESOURCE	2,683	228	8	16	9	8	3	6	5	5	15	5	18	5	6
KRAKEN	2,643	249	9	16	8	7	9	13	7	8	9	5	8	4	14
MUREX	2,222	117	6	14	13	6	3	2	2	2	3	4	7	3	6
HUNT OIL	2,094	197	9	12	8	9	6	11	13	8	10	7	8	8	14
CRESCENT POINT	2,053	323	16	22	17	13	6	6	4	6	16	18	26	17	35
KAISER-FRANCIS	1,839	93	5	4	18	3	3	5	2	5	4	2	9	5	4
PETRO-HUNT DAKOTA	1,610	300	19	16	18	16	61	17	14	14	11	9	11	60	13
SINCLAIR	1,602	947	59	30	39	39	39	37	45	78	82	68	57	37	15

Flaring and production data from the first 14 days of flowback from new wells is not included in these calculations. Data from NDIC, analyzed by CATF.

In this Table 4, we have highlighted monthly flaring rates that exceed 15.0%.

NDIC allows operators

“to accumulate credits for volumes of gas captured during the most recent three months in excess of the current gas capture goal.

“The commission may apply all or a portion of the credit to a month in which the operator cannot meet the current gas capture goal upon application by the operator.”¹⁴²

However, “Credits may be applied only if one or more of the extenuating circumstances exist.”¹⁴³ Extenuating circumstances include:

- 1) surface landowner, tribal, or federal government right-of-way delays
- 2) temporary midstream down-time for system upgrades and/or maintenance
- 3) federal regulatory restrictions or delays
- 4) safety issues
- 5) delayed access to electrical power
- 6) possible reservoir damage¹⁴⁴

To our knowledge, there is no public record of when the commission applies credits from previous months in determining whether an operator met the gas capture goal for a given month. Given the broad descriptions of extenuating circumstances, we assume that the commission has applied credits whenever an operator’s flaring in a given month exceeds 15%, and the operator

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.* p. 3.

has accumulated any credits for volumes captured beyond the 85% gas capture goal in previous months.

Even with this liberal definition of extenuating circumstances and application of credits whenever companies have them, there are many months where larger operators fail to meet the gas capture target of 85%. Table 5 presents the same monthly flaring rates for B3F wells for larger operators as in Table 4. However, in Table 5, when an operator can exceed the gas capture target if they are allowed to apply credits from one of the previous three months, the monthly figure is highlighted in green, rather than yellow. For months highlighted in yellow, there are not sufficient credits available to the operator to achieve the 85% capture target.

As Table 5 shows, nine of the thirty largest operators did not comply with the gas capture target in Order 24665 for at least one month in 2017 – even if we assume that whenever an operator has credits available to apply, NDIC found that extenuating circumstances existed and allowed the credits to be applied. Seven of these operators failed to comply with the target in at least four months in 2017. And finally, there are no months in 2017 when at least two operators failed to reach the gas capture target, even taking into account credits from previous months.

Table 5: 2017 Monthly Gas Flaring Percentages for Bakken/Three Forks Wells for 30 Largest Gas Producers (differentiating months with flaring above 15% depending on availability to operator of credits from previous months).

Company	ANNUAL			Monthly Flaring Percentage (%)											
	Gas Prod MMC F	Gas Flared MMC F	Flare %	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WHITING	82,079	5,719	7	6	5	5	5	6	7	5	7	14	13	6	5
CONTINENTAL	63,298	5,419	9	12	7	7	9	7	8	10	9	10	10	8	6
HESS	56,370	7,999	14	19	15	15	14	13	13	12	14	14	15	14	14
XTO	55,044	5,755	10	10	10	9	8	8	10	14	10	12	13	8	12
OASIS	49,209	5,378	11	14	9	6	4	10	11	10	12	19	6	11	19
BURLINGTON	42,028	1,375	3	6	4	3	2	2	3	3	4	4	3	2	3
QEP	30,213	2,369	8	8	6	6	6	7	8	5	6	14	11	9	8
EOG	28,114	2,191	8	10	6	5	5	6	18	10	9	7	5	9	4
STATOIL	26,473	2,534	10	13	8	8	11	10	4	7	10	11	14	8	9
MARATHON	18,043	3,183	18	12	13	10	9	9	12	16	13	21	30	29	28
NEWFIELD	17,619	1,803	10	3	5	4	7	9	9	16	14	13	17	11	8
ZAVANA	14,434	586	4	6	6	5	4	3	4	3	4	3	3	4	3
WPX	13,711	4,206	31	20	34	28	28	30	23	28	37	44	33	37	20
HRC	12,505	2,220	18	16	10	8	13	18	19	18	19	40	20	19	0
PETRO-HUNT	12,278	883	7	5	1	4	5	9	3	12	9	13	16	6	3
SLAWSON	8,778	1,075	12	9	27	20	13	7	6	8	5	11	15	14	12
ENERPLUS	7,124	953	13	16	9	11	14	12	12	13	19	14	15	11	13
SM ENERGY	5,127	362	7	5	9	9	6	6	4	5	16	3	16	3	3
LIBERTY	4,837	829	17	19	23	20	27	20	15	13	11	11	17	19	19
ABRAXAS	4,785	128	3	2	0	1	1	1	1	4	2	8	6	0	8
LIME ROCK	3,892	504	13	12	23	12	12	11	11	13	15	13	12	11	13

NINE POINT	3,331	246	7	0	0	0	0	6	7	6	11	7	8	6	8
RESOURCE	2,683	228	8	16	9	8	3	6	5	5	15	5	18	5	6
KRAKEN	2,643	249	9	16	8	7	9	13	7	8	9	5	8	4	14
MUREX	2,222	117	6	14	13	6	3	2	2	2	3	4	7	3	6
HUNT OIL	2,094	197	9	12	8	9	6	11	13	8	10	7	8	8	14
CRESCENT POINT	2,053	323	16	22	17	13	6	6	4	6	16	18	26	17	35
KAISER-FRANCIS	1,839	93	5	4	18	3	3	5	2	5	4	2	9	5	4
PETRO-HUNT DAKOTA	1,610	300	19	16	18	16	61	17	14	14	11	9	11	60	13
SINCLAIR	1,602	947	59	30	39	39	39	37	45	78	82	68	57	37	15

Flaring and production data from the first 14 days of flowback from new wells is not included in these calculations.

Data from NDIC, analyzed by CATF.

The sanction set out by NDIC in Order 24665 for operators that fail to capture gas at or above the target rate is curtailment of oil production.¹⁴⁵ Yet, even though numerous operators frequently fail to capture gas at the level directed by NDIC, curtailment is very uncommon. Only two operators were curtailed in any way for excessive flaring in 2017.¹⁴⁶ Slawson, which operated an average of 287 wells in the B3F during the month when it flared excessively,¹⁴⁷ had oil production curtailed for eleven wells, for one month (June 2017).¹⁴⁸ However, in early June, NDIC lifted the curtailment from the two highest-producing of the curtailed wells.¹⁴⁹

Sinclair, which had an average of 47 wells operating during the eleven months of 2017 when it flared excessively, had oil production curtailed from three wells in December 2017 and three wells in February 2018 (the latter was for excessive flaring in November 2017).¹⁵⁰

As detailed in Tables 6 and 7, these curtailments only affected a small fraction of the wells flaring excessively in the B3F, and in each case they were only for a single month.

Table 6: Companies with Excess Flaring in 2017

Operator	No. of months failing to meet target	Excess flaring during these months (MCF)	Avg. no. of B3F wells operated over those months	Number of wells curtailed (each for one month)	No. of new B3F wells that came on line during 2017
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¹⁴⁵ See Order 24665 §4. “If such gas capture percentage is not attained at maximum efficient rate, the well(s) shall be restricted to 200 barrels of oil per day if at least 60% of the monthly volume of associated gas produced from the well is captured, otherwise oil production from such wells shall not exceed 100 barrels of oil per day.”

¹⁴⁶ In response to queries from a partner group, NDIC provided a spreadsheet detailing all production restriction orders issued under Order 24665 since the first compliance dates under Order 24665. Referred to below as “Restriction Spreadsheet.”

¹⁴⁷ NDIC data for Slawson wells, March 2017.

¹⁴⁸ Restriction Spreadsheet.

¹⁴⁹ Id.

¹⁵⁰ Id.

MARATHON	4	775,477	532	0	22
WPX	12	2,149,830	244	0	34
HRC	4	391,244	285	0	10
SLAWSON	1	2,681	287	11	7
LIBERTY RESOURCES	6	110,102	59	0	16
LIME ROCK	1	8,704	282	0	3
CRESCENT POINT	5	41,963	64	0	15
PETRO-HUNT DAKOTA	6	68,172	89	0	0
SINCLAIR	11	503,835	47	6	10
Totals	50	4,052,008	1,889	17	117

Does not include months where operator may have been deemed to meet target by application of credits from previous months. Petro-Hunt was ordered to curtail one well (in July), but this curtailment order was lifted before the month began, apparently because the curtailment order was based on erroneous information. Data from NDIC database and Restriction Spreadsheet.

Table 7: Companies with Curtailed Wells based on Excess Flaring in 2017

Operator	Month Curtailed	Curtailment due to excess in prior month
SLAWSON	11 in June 2017	March 2017
SINCLAIR	3 in December 2017	3 in September 2017
	3 in February 2018	3 in November 2017

Data from Restriction Spreadsheet.

Combined, the nine large operators discussed here failed to achieve the gas capture target in 50 months, yet NDIC only sanctioned two of them, for a total of three months. Combined, these operators operated about 1,900 wells in the B3F during months when they were flaring excessively, but only 17 were curtailed for excessive flaring in 2017. Finally, just considering flaring above 15% for operators in months when the operator was not complying with the gas capture target, there was over 4 billion cubic feet of excessive flaring by these operators in 2017 – this gas would have supplied 36% of the residential gas used by North Dakota in 2017.¹⁵¹ Meanwhile, these operators were actively bringing dozens of new wells online in 2017, exacerbating the flaring problem by further straining the capacity of the pipeline network in the B3F region.

We note that NDIC allows operators to remove from their calculation of gas capture “volumes flared from wells already drilled and completed on the date a force majeure event occurs if the

¹⁵¹ ND residential gas consumption data from US Energy Information Administration.

event is properly documented in writing by the gas gathering company.”¹⁵² Almost no information is publicly available about the number or nature of force majeure (“FM events”) events, or about the process for documenting them and whether NDIC applies any objective standards before accepting this documentation. No such standard is discussed in the Policy Guidance, and we are aware of no discussion of FM events in the minutes of the NDIC¹⁵³ or in NDIC Oil and Gas Hearing Dockets.

Working with partner groups, CATF contacted DMR staff and we were informed that NDIC does not maintain a list of FM events.¹⁵⁴ In the November 2017 “Director’s Cut” document, DMR director Lynn Helms mentioned that there was particularly high flaring in September 2017 “primarily due to six force majeure events,”¹⁵⁵ but no other information about these FM events is provided in this or any other NDIC or DMR document. Without any information on FM events, it is hard to explain why so many companies have been allowed to exceed the flaring percentage requirement without being curtailed. Furthermore, there is no reason to expect that operators will not continue to flare excessively.

The benefits of the ND flaring rule appear to be even more limited on federally-managed land in the state, i.e. the Fort Berthold Indian Reservation (FBIR) and the Little Missouri National Grassland (LMNG). This can be seen by comparing the monthly flaring rate statewide to the flaring rate on the FBIR and the LMNG.¹⁵⁶ As can be seen in Table 8, the overall statewide flaring level for B3F wells (excluding volumes flared during the first 14 days of flowback for new wells, as best as we can approximate) was below the 15% threshold for every month in 2017, meaning that operators as a whole exceeded the 85% gas capture target. (As we have described above, of course, many individual operators have failed to meet the gas capture target.) However, in the FBIR and LMNG, the flaring level exceeded the threshold for ten months and three months, respectively. Thus, while on average the ND flaring rule may be having some effect on flaring in the state as a whole, it has not prevented widespread flaring from federally managed wells in North Dakota.

¹⁵² North Dakota Industrial Commission Order 24665 Policy/Guidance Version 102215, p. 2.

¹⁵³ As of April 12, 2018, NDIC has not posted minutes from any Commission meeting after July 2017.

¹⁵⁴ Email from Alison M. Ritter, North Dakota Dept. of Mineral Resources, to David McCabe and Nicole Donaghy, 27 March 2018.

¹⁵⁵ <https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2017-11-15.pdf>

¹⁵⁶ Wells in the NDIC database were geographically sorted into FBIR wells, LMNG wells, and other (“Private”) land based on GIS shapefiles. FBIR shapefile was obtained from the U.S. Census – American Indian Area Geography (available at: http://www2.census.gov/geo/tiger/TIGER2016/AIANNH/tl_2016_us_aiannh.zip) and the LMNG shapefile was obtained from the U.S. Department of Agriculture – National Grassland Units (available at: https://enterprisecontent-usfs.opendata.arcgis.com/datasets/b8db5d69787c408d9654a1f36438acbd_0).

Table 8: Flaring form B3F Wells Statewide Compared to FBIR and LMNG

	Annual		Monthly Flaring %											
	Flaring Bcf	Flaring %	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Statewide	58.9	10	11	9	8	8	9	9	10	11	14	12	10	10
Ft. Berthold Indian Reservation	12.9	18	16	19	15	15	18	19	17	19	28	20	21	14
Little Missouri Nat'l Grassland	1.2	12	8	5	10	11	14	8	8	13	22	20	17	10

Flaring and production data from the first 14 days of flowback from new wells is not included in these calculations. Data from NDIC database.

It is very important to note that companies are failing to meet the gas capture targets on both Federally managed and private land, as shown in Table 9.

Table 9: Two Companies with High Flaring on both Federal and Private Land

Company	Well Location	Annual	Monthly Flaring %											
		Flaring %	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
HRC OPERATING, LLC	FBIR	18%	17%	11%	8%	14%	20%	21%	19%	18%	41%	19%	19%	
	Private	13%	8%	6%	6%	8%	9%	7%	13%	22%	33%	23%	16%	
	TOTAL	18%	16%	10%	8%	13%	18%	19%	18%	19%	40%	20%	19%	
MARATHON OIL COMPANY	FBIR	13%	11%	16%	10%	9%	7%	7%	7%	4%	15%	20%	25%	24%
	Private	22%	13%	9%	9%	9%	11%	17%	24%	21%	27%	37%	31%	27%
	TOTAL	18%	12%	13%	10%	9%	9%	12%	16%	13%	21%	30%	29%	26%

Flaring and production data from the first 14 days of flowback from new wells is not included in these calculations. Data from NDIC database.

Finally, we note that because Order 24665 is limited to wells producing from the B3F pools, it leaves out a significant portion of flaring in the state. This is particularly the case in the FBIR, where operators flared 20.3 Bcf of gas in 2017, but only 14.7 Bcf of this flaring was from wells in the B3F pools. Thus, over a quarter of the flaring on the FBIR is not subject to the ND flaring rule in any way.

Because of the excessive and unnecessary amounts of flaring that is still occurring statewide, and particularly on public and Tribal lands, and the inconsistent enforcement of Order 24665 by the State of North Dakota, BLM's reliance on the state regulation and enforcement as a means to comply with the MLA's statutory duty to ensure that all lessees are subject to the

condition that they will “use all reasonable precautions to prevent waste of oil or gas” is arbitrary and capricious.

f. It is arbitrary for BLM to rescind Waste Prevention Rule requirements based on “overlap” with EPA standards for new and modified sources.

In the Rescission Proposal, BLM argues that requirements in the Waste Prevention Rule are “duplicative” of EPA standards. 83 Fed. Reg. at 7,928. BLM’s change in position from the Waste Prevention Rule, when it found that EPA standards did not “obviate the need” for the Waste Prevention Rule, is arbitrary and capricious. 81 Fed. Reg. at 83,010. BLM has both failed to explain why EPA air quality standards satisfy BLM’s statutory obligation under the MLA to prevent the waste of publically-owned natural gas, and provide “good reasons,” backed by evidence, for its assertion that EPA’s OOOOa standards will cover all wells on BLM-managed land, in a timeframe that does not allow substantial additional waste until all wells are “eventually,” 83 Fed. Reg. at 7,928, replaced or modified. *See Fox Television*, 556 U.S. at 515–16; *State Farm*, 463 U.S. at 43 (agency action is “arbitrary and capricious if the agency has... entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.”)

BLM recognizes that EPA standards, codified at 40 CFR part 60 subpart OOOOa, only apply to “new, reconstructed and modified sources,” while the Waste Prevention Rule covers *all sources* (both existing and modified) on federal and tribal lands. 83 Fed. Reg. at 7,928. However, BLM then goes on to claim, without analysis, “that over time, as existing well sites are decommissioned and new well sites come online, the EPA’s regulations at 40 CFR part 60 subpart OOOOa will displace the BLM’s regulations, *eventually* rendering the emissions-targeting provisions of the 2016 final rule entirely duplicative.” *Id.* (emphasis added).

As BLM recognized when it promulgated the Waste Prevention Rule:

It is critical to note, however, that neither EPA nor State and tribal requirements obviate the need for this rule. First, BLM has *an independent legal responsibility* and a proprietary interest as a land and resource manager to oversee and minimize waste from oil and gas production activities conducted pursuant to Federal and Indian (other than Osage Tribe) leases, as well as to ensure that development activities on Federal and Indian leases are performed in a safe, responsible, and environmentally protective matter.... *The BLM must carry out its responsibility, delegated by Congress, to ensure that the public’s resources are not wasted.*

81 Fed. Reg. at 83,010 (emphases added). In the Rescission Proposal, BLM utterly fails to explain why it is now appropriate to rely on EPA air quality standards to satisfy its “independent

legal responsibility” to prevent waste on federal and tribal lands. This failure to explain BLM’s reliance on EPA standards is particularly glaring, given that, as BLM notes, EPA has proposed to suspend OOOOa. 83 Fed. Reg. at 7,928 n.19, and EPA has announced a reconsideration of the standards. 82 Fed. Reg. 25,730 (June 5, 2017).

BLM also fails to fully explain why it now believes that the EPA standards, as a practical matter, prevent the same level of waste as the Waste Prevention Rule. In the Waste Prevention Rule, BLM explained:

[A]s a practical matter, neither EPA nor State and tribal regulations fully address the issue of waste of gas from BLM-administered leases. *The EPA regulations are directed at air pollution reduction, not waste prevention; they cover only new, modified and reconstructed sources; and they do not address wasteful routine flaring of associated gas from oil wells, among other things....* The BLM therefore believes this rule is *a necessary step in fulfilling its statutory mandate* to minimize waste of the public’s and tribes’ natural gas resources.

81 Fed. Reg. at 83,010 (emphases added). BLM’s findings in the Rescission Proposal that the Waste Prevention Rule will be “entirely duplicative” of EPA standards, 83 Fed. Reg. at 7,928, directly “contradict[s] those [findings] which underlay its prior policy” in the Waste Prevention Rule, and BLM has not provided the detailed explanation required to support its change in position. *See Fox Television*, 556 U.S. at 515–16.

Recent analysis by Dr. Renee McVay and Hillary Hull of the Environmental Defense Fund illustrates the key gaps in coverage between the Waste Prevention Rule and EPA and state standards for LDAR.¹⁵⁷ Using information from Drillinginfo, a proprietary database that compiles a wide range of drilling- and production-related information from state oil and gas commissions, and federal and tribal surface land ownership data from the United States Geological Survey, Dr. McVay identified 107,231 producing wells on BLM-managed land covered by the Waste Prevention Rule.¹⁵⁸ Dr. McVay then identified wells subject to EPA OOOOa or state LDAR standards, and found that 87,908 wells covered by the Waste Prevention Rule were not covered by EPA or state LDAR requirements.¹⁵⁹ In other words, over 80% of wells subject to the Waste Prevention Rule will *not* be covered by EPA OOOOa or state LDAR standards.

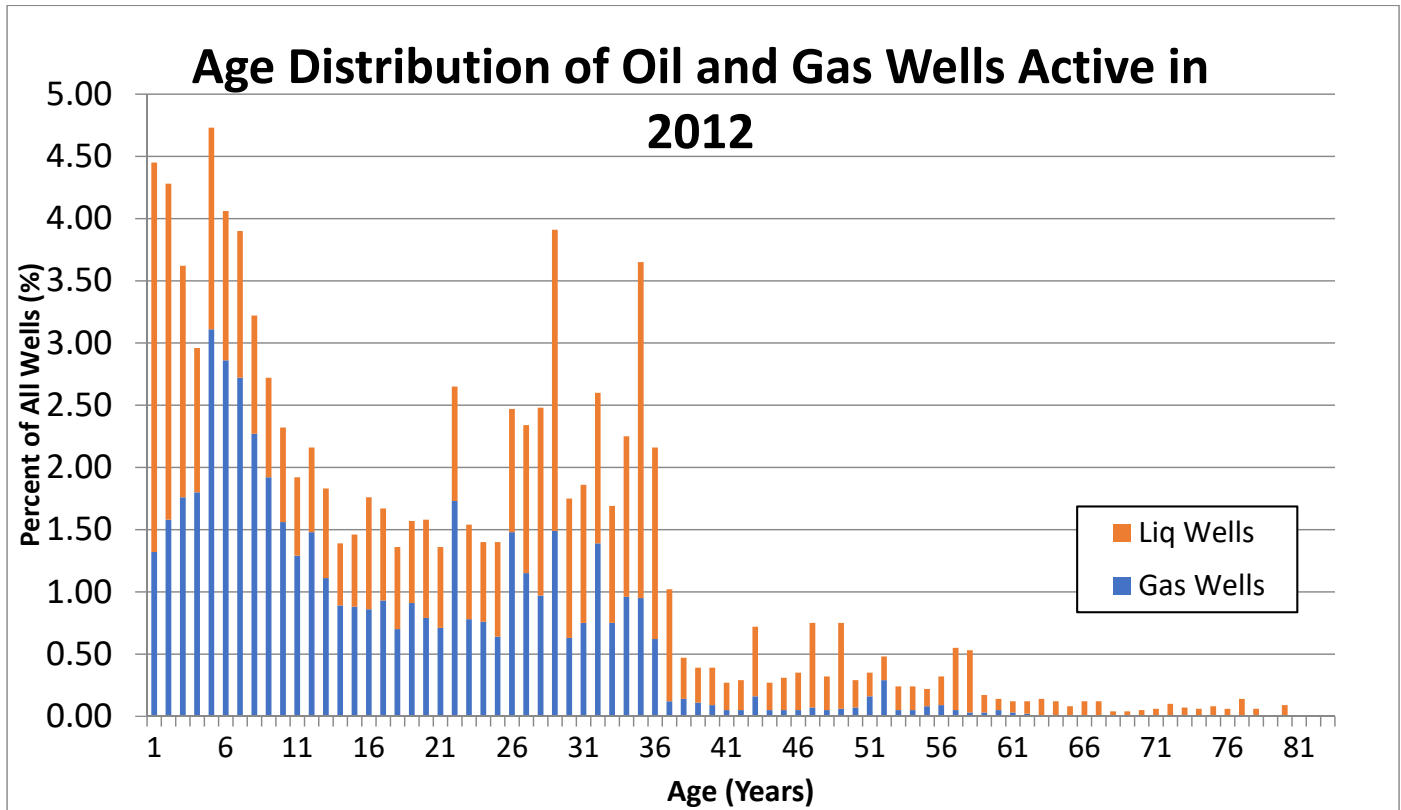
BLM’s assertion that EPA standards will “eventually” cover all wells on federal and tribal land is devoid of any evidence that would provide context for the timeframe for this eventual

¹⁵⁷ Declaration of Dr. Renee McVay and Hillary Hull, Case No. 3:17-cv-07187, ECF. No. 4-4, Attach. No. 57 (N.D. Cal. Dec. 19, 2017) (included in attachments to these comments).

¹⁵⁸ *Id.* at ¶ 5.

¹⁵⁹ *Id.* at ¶ 13.

coverage. Data indicates that wells can remain active for decades. Based on our nationwide analysis of Drillinginfo data on oil and gas wells active in 2012 (see image below), 60 percent of all wells active in that year were more than 10 years old.



Source: Drillinginfo.

BLM’s failure to explain how EPA regulations satisfy BLM’s statutory obligations to prevent waste and to conduct any analysis to support its assertion that EPA standards will “over time” cover all wells on federal and tribal lands, 81 Fed. Reg. 7,928, is arbitrary and capricious.

V. The Rescission Proposal Contains Numerous Provision-Specific Issues.

A. Leak Detection and Repair.

BLM proposes to rescind the Waste Prevention Rule’s requirements for leak detection and repair, currently codified at 43 C.F.R. 3179.301-305, in their entirety. 83 Fed. Reg. at 7,932. In support of rescission, BLM cites several “concern[s]” or “belie[fs]”: a “concern[.]” that LDAR compliance costs outweigh conservation benefits, a “belie[f]” that EPA OOOOa regulations will adequately address leaks for sources on federal and tribal lands, and a “concern[.]” that the requirements will be “unnecessarily burdensome” to certain well sites, particularly marginal well sites. *Id.*

Fundamentally, these unsupported “concerns” are an inadequate justification for disregarding the extensive evidence underlying the LDAR standards in the Waste Prevention Rule. *See Fox Television*, 556 U.S. at 515; *California*, 2018 WL 1014644 at *7 (“BLM provides no analysis or factual data to support [its] concern.”) As discussed in Sections above, LDAR compliance costs are low and reasonable even for marginal wells, and BLM has fundamentally underestimated the conservation benefits associated with the LDAR and other Waste Prevention Rule standards. EPA regulations for new and modified sources do not control waste from *existing* sources on federal and tribal lands, and will not address waste from those sources for years or even decades. *See* Section V.F.. BLM has made no showing that the exemptions it provided in the Waste Prevention Rule would not largely if not entirely mitigate cost concerns for marginal wells. Finally, BLM’s concern that LDAR standards might be burdensome for a subset of wells certainly does not justify rescinding the requirements for *all* wells.

B. Avoidable/Unavoidable Loss

The distinction between avoidable and unavoidable loss is the key determinant in whether production is royalty bearing. The Waste Prevention Rule updated these definitions to more clearly and specifically define when a loss of gas is considered “unavoidable” and royalty-free, and when it is considered “avoidable” and subject to royalties.

Under the Waste Prevention Rule, a loss of gas is deemed unavoidable when an operator has complied with all applicable requirements and taken prudent and reasonable steps to avoid waste, and the gas is lost from one of the operations or sources specified in this final regulation. Those specified operations include emergencies; well drilling, completions, and tests; normal operations of pneumatic devices and storage vessels; liquids unloading; leaks; facility or pipeline maintenance when equipment must be depressurized; and gas from which at least 50 percent of natural gas liquids have been removed and captured for market. A loss of gas is also deemed unavoidable when produced gas is flared or vented from a well that is not connected to a gas pipeline, provided the BLM has not determined loss of gas through such venting or flaring is otherwise avoidable. All losses of gas not identified as unavoidable, as well as any gas flared in violation of the capture requirement, are deemed avoidable and subject to royalties.

As discussed above, this approach removes the ambiguity caused by using two broad, non-mirror image definitions. It also places the burden to demonstrate unavoidable loss squarely on the operator, establishing the presumption that royalties apply unless a loss is demonstrated to be unavoidable. This is logical and consistent with the MLA’s emphasis on realizing the full benefits of the public resources and avoiding waste. Losses of gas that belong to the public but that are under the lessee’s control should be presumed to be royalty-bearing, unless they are shown to be unavoidable. It should not be up to BLM to have to prove that a given loss was, in

fact avoidable. Also, by establishing clearly delineated categories of unavoidable losses, the final rule was intended to reduce the number of requests for approval to flare royalty-free, eliminating the case-by-case approach and reducing the administrative burden for the agency and the inconsistent application of unavoidable loss determinations between field offices.

The proposed rule reverts back to the definition of avoidable loss as written in NTL-4A. It would define avoidably lost gas as gas that is vented or flared without BLM approval, and produced oil or gas that is lost due to operator negligence, the operator's failure to take all reasonable measures to prevent or control the loss, or the operator's failure to comply with applicable lease terms and regulations, the approved operating plan, or prior written BLM orders.

The proposed rule also alters the definition of unavoidable lost gas. While largely similar to the definition in the Waste Prevention Rule, the proposed rule deems as unavoidable all "normal" losses of gas from storage tanks and low-pressure production vessels (without providing any guidance to what constitutes normal or abnormal losses) and includes produced gas that is flared or vented with BLM authorization or approval.

The changes in the definitions of avoidable and unavoidable loss are inextricably tied to the way in which the proposed rule attempts to address natural gas waste. The proposed rule rescinds the gas capture percentages and targets established under the Waste Prevention Rule and instead relies on state requirements. However, as a backstop, the proposed rule codifies the NTL-4A approach which would apply in any state with no regulations related to flaring (which appears to be a null set) as well as on tribal lands without flaring regulations. Under this framework, operators would once again be required to obtain BLM approval to vent or flare oil-well gas royalty free by submitting an application with sufficient justification. That justification would either have to demonstrate that capturing the gas is not economically justified or that the operator will reduce venting and flaring within one year. Operator royalty obligations for vented or flared gas from oil wells would once again be dependent on an "avoidable loss" determination made by the BLM; the same concept from NTL-4A.

This approach relies too heavily on ill-defined economic circumstances, will increase the administrative burden on BLM and result in additional waste and a loss of royalty revenue as compared to the Waste Prevention Rule. See above for an in-depth discussion of the issues associated with relying on the NTL-4A framework.

C. Waste Minimization Plans

BLM proposes to rescind requirements providing that lessees and operators prepare waste minimization plans as a component of their APD submissions. We recommend that BLM retain the waste minimization plan requirement. We also urge BLM to consider options to strengthen

the WMP requirement, and adopt such strengthening measures in accord with our recommended timing, pace, and location measures detailed below to incentivize natural gas waste reduction action and by making waste minimization plans an enforceable aspect of APD approvals.

BLM's contends that the WMP requirement "imposes an unnecessary administrative burden on both operators and the BLM." 83 Fed. Reg. 7924, 7929. As an initial matter, now that the Waste Management Plan requirement has been in place for well over a year, BLM should have actual information about how much of an administrative burden the plans cause, and experience with how they help to minimize waste, though BLM has not provided any such actual information in the Rescission Proposal.

BLM then contends, on the basis of three reasons, that "there will be sufficient information-based safeguards against undue waste even in the absence of the waste minimization plan requirement." *Id.* As an initial matter, it is unclear what BLM means by "information-based" safeguards. If BLM is suggesting, however, that "information-based" safeguards are those that reduce waste simply by requiring information, rather than requiring specific equipment, operational changes etc., BLM's assertion still makes no sense. The relevant question for BLM to consider is not whether the regulation has sufficient information-based (and presumably non-information based) safeguards against undue waste; the question is whether the regulation has sufficient safeguards against undue waste period, of whatever type. The advantage of requirements that incentivize the desired action through the development and release of information is that those requirements are often less costly, and viewed as less burdensome by the regulated parties, compared to requirements that mandate the desired action. Of course, requirements that incentivize the desired action are often less effective than mandates, and they are more commonly used to supplement other measures, rather than as the sole means of obtaining the desired action from the regulated parties, but that does not mean that these measures cannot be useful and highly cost-effective regulatory tools.

In this case, BLM modelled the waste minimization plan requirement after North Dakota's similar requirement. As BLM noted, North Dakota had informed BLM that it viewed the requirement as one of the most effective measures it had adopted to reduce flaring.¹⁶⁰ A significant part of the flaring problem in North Dakota has been due to oil development outpacing gas pipeline development. The simple requirement for oil drillers and midstream pipeline companies to talk to each other about planned developments, projected quantities and timing apparently has helped reduce the time lag for connecting new or expanded pipeline infrastructure.

Thus, the question that BLM should consider is not whether other "information-based" measures also would serve to reduce waste, but whether the specific drivers of waste targeted by the waste

¹⁶⁰ 81 Fed. Reg. 6642.

minimization plan requirement (e.g., oil drillers failing to consider available gas pipeline capacity before starting new wells and pipeline companies' lack of information regarding future production volumes, among others) would be fully addressed by other proposed regulatory measures. If not, BLM should consider whether the waste minimization plan requirement would be a reasonable waste reduction measure for addressing those drivers of the waste problem.

By this measure, the waste minimization plan requirements are eminently sensible. While certainly insufficient to eliminate wasteful flaring, they are extremely low cost, correct a known market failure (information being held by different parties), and proven to be somewhat effective.

Further, BLM's reasons for suggesting that "there will be sufficient information-based safeguards" even without the waste minimization plan requirement do not stand up to scrutiny. First, BLM references comparable requirements in North Dakota and New Mexico to argue that the waste minimization plans would not add value in those states. Elsewhere we discuss the problems in relying on current state requirements as a substitute for the adoption of BLM requirements, and there is also evidence that New Mexico, at least, is generally not even implementing its requirements. But leaving those points aside, comparable requirements in two states are irrelevant for the purposes of waste that occurs in other states and on tribal lands.

Second, BLM references state regulations in three other states that require submission of production information when producers seek flaring approval. These requirements are clearly not comparable to the waste minimization plan requirements because they apply after the well has been drilled and production has begun. The whole point of the waste minimization plan requirements is to encourage better planning by both producers and pipeline companies well in advance, so that by the time the well is drilled and the gas is flowing, flaring can be avoided. It also does not appear from BLM's description that the regulations referenced require the producers to supply information to the pipeline companies – a key element of the waste minimization plan requirements – although given the timing, even if the regulations did require that it would be too late.

Third, BLM appears to point to the requirement that in states with absolutely no rules regulation flaring whatsoever – which appears to be a null set – producers would have to request BLM approval for flaring using some of the same types of information as would be used in a waste minimization plan. Again, this serves none of the purposes of a waste minimization plan, and in no way could be argued to substitute for it.

Finally, BLM adds that compliance would be "cumbersome" for operators, and could slow down the time for approval of applications to drill as BLM evaluates a waste minimization plan. We do not agree with either of these assertions, for the same reasons that BLM pointed to in

responding to comments on the final rule. In addition, it is entirely within BLM's control to allocate additional resources to reviewing waste minimization plans, to avoid any possible delay of APD processing. The relevant question, of course, is not whether there is any burden whatsoever on an operator in requiring a waste minimization plan. The relevant question is whether the burden is reasonable in light of the requirement's effectiveness in helping to minimize waste, as required by the statute. The answer to this question is that this is arguably the least burdensome requirement adopted in the Waste Prevention Rule, and BLM has no rational basis for eliminating it.

It is also arbitrary for BLM to disregard the record of experience with the comparable North Dakota requirement that BLM relied upon in the Waste Minimization Rule.

We therefore recommend that BLM retain and make enforceable waste minimization planning requirements.

D. Pneumatic Controllers

BLM proposes to rescind in its entirety 43 C.F.R. § 3179.201, which establishes requirements to—with certain exceptions—minimize wasted gas from new and existing pneumatic controllers. BLM justifies its rescission because it “believes” that EPA regulations—which do not address existing pneumatic controllers—“will adequately address the loss of gas from pneumatic controllers on Federal and Indian leases over time,” citing a typical lifespan of 10 to 15 years. 83 Fed. Reg. 7931. BLM also cites the fact that 89 percent of controllers in the production sector *nationwide* are low-bleed, and that BLM “expect[s] many operators to adopt low-bleed pneumatic controllers even in the absence of § 3179.201's requirements.” 83 Fed. Reg. 7931. BLM does not attempt to claim that this requirement is unduly costly or burdensome, simply that it is unnecessary. Nowhere does BLM provide a detailed explanation of why it can retreat from the 2016 finding that it was reasonable to require all high-bleed controllers to be replaced by a low-bleed equivalent. *See* 81 Fed. Reg. 83012.

BLM claims that 89 percent of nationwide controllers are low-bleed equivalent, but that does not speak to the number of controllers that would be covered by this rescission. Without any analysis over the proportion of high-bleed to low-bleed controllers on federally managed land, BLM has ignored a vital component of the impact of the rescission. BLM further says that it expects “many” operators to choose low-bleed controllers because of the financial incentives, but does not explain why it expects those operators to now retrofit controllers when they have failed to do so up to this point. Moreover, BLM's reliance on EPA's regulations means unnecessary loss from existing pneumatic controllers will continue to occur for over 10 years until all of the existing controllers are replaced. Yet, BLM did not provide any reasoned explanation allowing the continued loss of gas on federal lands by taking this approach.

Making BLM's proposed rescission of § 3179.201 even more arbitrary is the fact that even under BLM's narrow proposed definition of waste, high-bleed pneumatic controllers are wasteful. BLM estimated that the total cost savings associated with keeping § 3179.201 are \$24-30 million, and compliance costs only \$12-13 million. Thus, the pneumatic controller requirements of the Waste Rule will result in a net profit of \$12-17 million. As discussed in more detail in these comments, BLM's proposes to define waste as an action that results in avoidable surface of loss of oil or gas, or reduction in the quantity of recoverable gas, when the monetary value of the recovered gas exceeds the compliance costs. 83 Fed. Reg. 7946, Proposed § 3179.3. By this very definition, allowing the continued operation of high-bleed controllers on federal land is wasteful, and BLM's proposal to rescind is therefore arbitrary.

E. Measurement and Reporting

BLM proposes to largely retain the existing measurement and reporting requirements, which we support. Accurate and timely measurement and reporting are critical to controlling waste, as BLM cannot address a problem of which it is unaware. Moreover, GAO and others have repeatedly pointed out deficiencies in BLM's information on volumes and sources of lost gas, which the measurement and reporting requirements in the Waste Prevention Rule were designed to rectify.

BLM proposes two modifications, however, that weaken the requirements and undercut BLM's waste minimization efforts. First, in the Waste Prevention Rule, BLM required greater accuracy in measuring and reporting larger volumes of flaring. Specifically, where an operator estimates that the volume of gas flared from a high pressure stack is equal to or more than 50 Mcf per day, on average, for the life of the flare or the previous 12 months, whichever is shorter, then the operator is required to use more accurate methods. Either the operator must measure the volume of the flare, or the operator must use a calculation method prescribed by the rule. The proposed Rescission Rule drops the distinction between the measurement methods to be applied to larger and smaller volumes of flaring. While this would not undercut waste minimization if all volumes of flaring were held to the higher standard, this is not the case. The Rescission Rule would allow the operator to use either of the methods identified in the Waste Prevention Rule or an estimation method "in accordance with applicable" rules of the state or tribe. BLM has provided no information on the adequacy of state or tribal rules regarding flaring volume estimations. Further, even if BLM had determined that all applicable state and tribal rules were equally effective as the BLM standards for accurately estimating flaring volumes, it is inappropriate for BLM to defer across the board to state and tribal standards that could be changed or weakened.

VI. The Secretary Has Not Allowed Meaningful Comment on the Rescission Rule.

The purposes of APA notice and comment are two-fold: “to reintroduce public participation and fairness to affected parties after governmental authority has been delegated to unrepresentative agencies,” and to “assure that the agency will have before it the facts and information relevant to a particular administrative problem, as well as suggestions for alternative solutions.” *Am. Hosp. Ass’n v. Bowen*, 834 F.2d 1037, 1044 (D.C. Cir. 1987) (alterations and citations omitted). In other words, notice and comment ensures “maximum participation” from the public and “full information” for the agency. *Id.* The give-and-take between an agency and the affected public ensures that rules are fair to those they affect and have some “democratic legitimacy.” *Monahan v. Winn*, 276 F. Supp. 2d 196, 214 (D. Mass. 2003). It also allows the agency to educate itself and adopt the wisest rule. *Pennzoil Co. v. F.E.R.C.*, 645 F.2d 360, 371 (5th Cir. 1981); *Dismas Charities, Inc. v. U.S. Dep’t of Justice*, 401 F.3d 666, 680 (6th Cir. 2005).

BLM undermined meaningful comment when it predetermined that it would revise or rescind the Waste Prevention Rule regardless of public feedback. Indeed, since his nomination as Secretary of the Interior, Secretary Ryan Zinke has doggedly pursued any means to relieve operators of their obligation to comply with the Waste Prevention Rule, and has not been open to any other outcome. For example, when asked about the Waste Prevention Rule, Secretary Zinke characterized it as “duplicative and unnecessary.”¹⁶¹ Then, the Secretary publicly supported congressional efforts to invalidate the Waste Prevention Rule through the Congressional Review Act (“CRA”).¹⁶² After the Senate voted against invalidating the Rule, the Secretary then attempted to suspend the Rule on his own (and without giving public notice or accepting public comment), issuing a “Postponement Notice” under the authority of section 705 of the APA.¹⁶³ In litigation brought by the states of New Mexico and California, along with a coalition of citizen groups, the Postponement Notice was invalidated. *State v. BLM*, 277 F. Supp. 3d 1106 (N.D. Cal. 2017). But, in the meantime, Secretary Zinke had developed “a three step plan” to “propose to revise or rescind the Rule” and to “prevent any harm from compliance with the Rule in the

¹⁶¹ Charlie Passut, *Trump Picks Montana’s Rep. Zinke to Lead Interior Department*, Naturalgasintel.com, (Dec. 16, 2016) available at <http://www.naturalgasintel.com/articles/108737-trump-picks-montanas-rep-zinke-to-leadinterior-department>.

¹⁶² *Interior Pick Ryan Zinke Vows to Review Obama’s Safeguards Against Fossil Fuel Extraction*, The Intercept, (Jan. 18, 2017) available at <https://theintercept.com/2017/01/18/interior-pick-ryan-zinke-vows-to-review-obamassafeguards-against-fossil-fuel-extraction/> (reporting that Zinke answered “yes” when asked by a Senate committee whether he supported invalidation through the CRA).

¹⁶³ Waste Prevention, Production Subject to Royalties, and Resource Conservation; Postponement of Certain Compliance Dates, 82 Fed. Reg. 27,430 (June 15, 2017).

interim.”¹⁶⁴ This plan included conducting notice-and-comment rulemaking to suspend or extend the Waste Prevention Rule’s compliance deadlines for one year, as BLM did at 82 Fed. Reg. 58,050 (Dec. 8, 2017), and revising/replacing the Rule, as BLM proposes to do in the instant rulemaking.

Moreover, BLM has not conducted—and apparently is not planning to conduct—adequate stakeholder outreach. BLM should undertake a similar level of stakeholder outreach as it did for the Waste Prevention Rule, because the rescission of the Waste Prevention Rule is just as consequential as its promulgation. For the Waste Prevention Rule, the BLM conducted a series of forums to consult with tribal governments and solicit stakeholder views to inform the development of the Rule even before the Rule was proposed.¹⁶⁵ These public meetings (some of which were livestreamed to enable remote participation) were held over several months in 2014 in Colorado, New Mexico, North Dakota, and Washington, DC.¹⁶⁶ At each forum, BLM held a tribal outreach session in the morning and a public outreach session in the afternoon.¹⁶⁷ BLM also accepted informal comments generated as a result of the outreach sessions.¹⁶⁸ BLM continued to consult with stakeholders throughout the rule development process, including by having numerous meetings and calls with State representatives, individual companies, trade associations, and non-governmental organizations.¹⁶⁹ After the proposed rule was published on February 8, 2016, the BLM conducted another round of outreach meetings, again with a tribal outreach session in the morning and a public outreach session in the afternoon, as well as a call-in number for the public to listen in remotely.¹⁷⁰ These meetings were held in Farmington, New Mexico; Oklahoma City, Oklahoma; Denver, Colorado; and Dickinson, North Dakota.¹⁷¹

By contrast, BLM is providing no public or tribal forums for the Rescission Proposal. BLM’s paltry tribal outreach is especially striking in light of BLM’s tribal trust responsibilities to manage oil and gas on tribal lands for the benefit of tribes. BLM indicates merely that it has “notified tribes of the action and requested feedback and comment through the respective BLM

¹⁶⁴ Fed. Resp’ts’ Mot. to Extend Briefing Deadlines at 3, *Wyoming v. U.S. Dep’t of the Interior*, No. 2:16-cv-285-SWS (D. Wyo. June 20, 2017), ECF No. 129; *see also* Nedd Information/Briefing Memorandum (May 12, 2017) (describing BLM’s “dual-faceted approach, which would limit the compliance costs posed to Industry while the BLM revises the Rule”) (attached).

¹⁶⁵ 81 Fed. Reg. 6616, 6617 (Feb. 8, 2016).

¹⁶⁶ *Id.*

¹⁶⁷ *Id.*

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

¹⁷⁰ 81 Fed. Reg. at 83,071.

¹⁷¹ *Id.*

State Office Directors” and that “[f]uture tribal consultation *may* occur on an ongoing basis.”¹⁷² BLM claims that it “believes” the amount of tribal outreach it is conducting is “appropriate” because the Rescission Rule will have potential positive impacts—for example, operators may view Indian lands as more attractive to develop because of reduced compliance burdens.¹⁷³ BLM overlooks that the Rescission Rule, by removing waste prevention and emissions reductions, will decrease royalty payments due to Indian tribes and will increase pollution that harms tribal members.

BLM should hold public and tribal outreach sessions in multiple convenient locations, with a livestreaming or call-in option to facilitate remote access. BLM should also extend the 60-day comment period by 60 days in order to ensure that BLM maintains an open mind and allows itself adequate time to take tribal and public views into account.

We urge BLM to receive public and tribal comments with an open mind, and to make changes and revisions in response. To do otherwise would be to block effective participation in the rulemaking process. As the court observed in *Nehemiah Corp. of America v. Jackson*, “[a]llowing the public to submit comments to an agency that has already made its decision is no different from prohibiting comments altogether. Indeed, if the public perceives that the agency will disregard its comments, there may be a chilling effect that causes the public to refrain from submitting comments as an initial matter.” 546 F. Supp. 2d 830, 847 (E.D. Cal. 2008); *Sharon Steel Corp. v. EPA*, 597 F.2d 377, 381 (3d Cir. 1979) (“Provision of prior notice and comment allows effective participation in the rulemaking process while the decisionmaker is still receptive to information and argument. After the final rule is issued, the petitioner must come hat-in-hand and run the risk that the decisionmaker is likely to resist change.”); *Advocates for Highway & Auto Safety v. Fed. Highway Admin.*, 28 F.3d 1288, 1292 (D.C. Cir. 1994) (“changes and revision are indicative of an open mind”).

Finally, to enable the public to meaningfully comment, BLM should provide the public with the “initial review” underpinning the Rescission Proposal. In its rule delaying and suspending certain requirements of the 2016 Waste Prevention Rule (“Suspension Rule”), BLM repeatedly referenced its “initial review” of the Waste Prevention Rule, describing it as both the underpinning for the Suspension Rule and the impetus for this Rescission Rule.¹⁷⁴ But BLM has not provided this “initial review” to the public. Without this basic background explaining the impetus for the Rescission Proposal, it is difficult to comment meaningfully on whether or not the Rule has reasonable bases and goals, or not. *Cal. Wilderness Coal. v. U.S. Dep’t of Energy*, 631 F.3d 1072, 1089–90 & n.12 (9th Cir. 2011) (explaining that it is “a fairly obvious proposition that studies upon which an agency relies in promulgating a rule must be made

¹⁷² 83 Fed. Reg. at 7942 (emphasis added).

¹⁷³ *Id.*

¹⁷⁴ 82 Fed. Reg. at 58,050, 58,051, 58,059.

available during the rulemaking in order to afford interested persons meaningful notice and an opportunity for comment” (quotation omitted)).

The “initial review” may be related to Section 5(c)(ii) of Secretary Zinke’s March 29, 2017 Secretarial Order No. 3349, which directed the BLM Director to review the Waste Prevention Rule and report to the Assistant Secretary of Land and Minerals Management within 21 days on whether the Waste Prevention Rule is fully consistent with the policies set forth in Executive Order No. 13,783. We are aware of a document released by BLM in response to FOIA entitled “Bureau of Land Management response to Secretary’s Order 3349, Sections 5(c)(i), (ii), and (v)” (“21-day report”). BLM should both provide the “initial review” and explain how the “21-day report” is related to the “initial review.”

VII. The Proposed Rescission Rule Violates NEPA.

BLM’s cursory 26-page Environmental Assessment for the Rescission Proposal falls well short of the agency’s statutory and regulatory obligations under NEPA. *See* BLM, *Draft Environmental Assessment, Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements Proposed Rule, DOI-BLM-WO310-2018-XXX-EA* (Feb. 22, 2018) (“EA”). Specifically, BLM (1) predetermined the outcome; (2) failed to consider a reasonable range of alternatives; (3) prepared an EA rather than an environmental impact statement (EIS); (4) did not take a hard look at the Rescission Proposal’s impacts to climate, tribal lands, and other resources; and (5) failed to analyze cumulative impacts.

A. Statutory Background

NEPA “is our basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). NEPA’s substantive intent—reflecting themes contained in FLPMA—is to:

encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; [and] to enrich the understanding of the ecological systems and natural resources important to the Nation.

42 U.S.C. § 4321; *see also id.* § 4331(b)(1) (providing that it is the continuing responsibility of the Federal Government to use all practicable *means*, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, *functions*, programs, and *resources*” in order that the United States may “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations”).

As the Supreme Court has recognized, “the thrust of [NEPA] is ... that environmental concerns be integrated into the very process of agency decision-making.” *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979). Thus, while “NEPA itself does not mandate particular results, but

simply prescribes the necessary process,” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989), agency adherence to NEPA’s action-forcing statutory and regulatory mandates helps achieve NEPA’s noble purpose and policies. *See* 42 U.S.C. §§ 4321, 4331. As explained by NEPA’s implementing regulations:

Ultimately, of course, it is not better documents but better decisions that count. *NEPA’s purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action.* The NEPA process is intended to help public officials make decisions that are based on [an] understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

40 C.F.R. § 1500.1(c) (emphasis added).

NEPA’s ability to “foster excellent action” is a product of its specific mandates, namely that federal agencies—such as BLM—must take a hard look at the direct, indirect, and cumulative impacts of a proposed action; consider reasonable alternatives to that proposed action; meaningfully involve the public in the NEPA process; and, where impacts may be significant, to prepare a comprehensive Environmental Impact Statement (“EIS”).

A successful NEPA process is contingent on harnessing effective public involvement. NEPA’s implementing regulations provide that, “Federal agencies shall to the fullest extent possible ... encourage and facilitate public involvement in decisions which affect the quality of the human environment” and, further, “[m]ake diligent efforts to involve the public in preparing and implementing their NEPA procedures.” *Id.* at §§ 1500.2(d), 1506.6(a). As the Ninth Circuit has rightly explained, NEPA works “through the creation of a democratic decisionmaking structure that, although strictly procedural, is ‘almost certain to affect the agency’s substantive decision[s].’” *Or. Nat. Desert Ass’n v. BLM*, 531 F.3d 1114, 1120 (9th Cir. 2008) (quoting *Robertson*, 490 U.S. at 350). By requiring agencies “to place their data and conclusions before the public ... NEPA relies upon democratic processes to ensure—as the first appellate court to construe the statute in detail put it—that ‘the most intelligent, optimally beneficial decision will ultimately be made.’” *Id.* (quoting *Calvert Cliffs’ Coordinating Comm. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971)). This process, in turn, ensures open, honest and public discussion “in the service of sound decisionmaking.” *Id.* at 1143.

Citizen Group Commenters view these four NEPA responsibilities—to meaningfully involve the public, to consider alternatives, to prepare an EIS, and to take a hard look at impacts—as essential to BLM’s rulemaking. The careful, deliberate decisionmaking that NEPA requires is a prerequisite of reasoned and informed action, in particular where the stakes are so high given the extent of BLM’s oil and gas program, chronic methane waste issues, and the urgent need to account for climate change. Problematically, BLM’s Rescission Proposal falls short of all of the agency’s NEPA obligations. BLM predetermined the outcome of the NEPA process rather than involving the public. It considered an unduly strained set of alternatives. BLM failed to produce an EIS. And the brief EA it did produce falls well short of its obligation to take a hard look at the numerous environmental implications of rescinding the Waste Prevention Rule.

B. BLM Predetermined the Outcome of the NEPA Process.

The first major problem with the Rescission Proposal EA is that it is a *fait accompli*. It is quite obvious that BLM decided on its course of action—rescinding the Waste Prevention Rule—months ago and is only now producing an EA to retroactively justify its decision. But NEPA requires agencies to “integrate the NEPA process with other planning at the earliest possible time.” 40 C.F.R. § 1501.2. This ensures that agencies conduct NEPA analysis “before any irreversible and irretrievable commitment of resources” is made. *Conner v. Burford*, 848 F.2d 1441, 1446 (9th Cir. 1998). When an agency prepares an EA only after committing to a course of action, it does so “too late in the decision-making process.” *Metcalf v. Daley*, 214 F.3d 1135, 1143 (9th Cir. 2000). BLM’s approach to this NEPA process was backward—it committed itself to rescinding the Waste Prevention Rule, and only then conducted any NEPA analysis.

BLM set itself on the path to rescinding the Waste Prevention Rule long before starting the NEPA analysis for the Rescission Proposal. In March 2017, Secretary Zinke ordered BLM to draft a report on whether to revise or rescind the Rule. Secretary of the Interior Order No. 3349 at § 5(c)(ii) (Mar. 29, 2017). Neither BLM nor Secretary Zinke conducted NEPA analysis in conjunction with the Secretarial Order or the report charting the course for rescinding the Waste Prevention Rule—a report that BLM has never made public. BLM thus decided to rescind the Rule without taking a hard look at the environmental consequences of doing so, without considering alternatives, and without engaging the public. Indeed, the EA explains that its purpose is to conduct NEPA analysis because of the agency’s earlier conclusion that the Waste Prevention Rule is not consistent with the Secretarial Order. EA at 4. This is backwards from the process that should have occurred—BLM using the NEPA process to inform, rather than justify, its decision on whether to revise or rescind the Rule.

BLM has represented that it made up its mind about its path forward, without any discussion of that decision being guided by a NEPA process, multiple times in federal court. While BLM is of course the decisionmaker, that authority is not unbounded; BLM must apply its authority—and whatever discretion flows from that authority—through the NEPA process before a decision is reached. Yet BLM explained its “three step plan” plan to “permanently rescind or revise” the Waste Prevention Rule in a filing in the District of Wyoming. Fed. Resp’ts’ Mot. to Extend Briefing Deadlines at 3–4, *Wyoming v. U.S. Dep’t of the Interior*, No. 2:16-cv-285-SWS (D. Wyo. June 20, 2017), ECF No. 129. Just a few days after issuing the Rescission Proposal, BLM committed to the Wyoming court that it would finalize the Rescission Proposal by August and, further, recited the ways in which the Rescission Proposal would eliminate what it characterized as the Waste Prevention Rule’s “significant . . . burden imposed on the regulated community.” Fed. Resp’ts’ Resp. to Pet’rs’ & Intervenor-Pet’rs’ Mots. to Lift the Stay & for Other Relief 2, 4, *Wyoming v. U.S. Dep’t of the Interior*, No. 2:16-cv-285-SWS (D. Wyo. Mar. 14, 2018), ECF No. 207.

These written commitments to a timeframe for rescinding the Waste Prevention Rule demonstrate that BLM had made up its mind about the outcome of the NEPA process months before it even started its NEPA analysis, let alone considered public comments on the EA. Given these commitments, as well as the cursory treatment given to alternatives as well as impacts in the EA itself, BLM’s intent was as obvious as it is problematic: engage the NEPA process as

merely a bureaucratic box the agency must check off along the path towards rescission of the Waste Prevention Rule. As courts have warned, “[o]nce large bureaucracies are committed to a course of action, it is difficult to change that course—even if new, or more thorough, NEPA statements are prepared and the agency is told to ‘redecide.’” *Massachusetts v. Watt*, 716 F.2d 946, 952–53 (1st Cir. 1983) (imposing injunction on sale of offshore oil and gas leases for NEPA violations).

BLM “did not even consider the potential environmental effects of the proposed action until long after [it] had already committed in writing” to its proposed action. *Metcalf*, 214 F.3d at 1143. Nor did BLM consider a range of reasonable alternatives that would support a conclusion that the agency, in the rulemaking process, retained an open mind to take different pathways other than rescission. BLM “commit[ted] itself to a plan of action that is dependent upon the NEPA environmental analysis producing a certain outcome, before the agency . . . completed that environmental analysis—which of course is supposed to involve an objective, good faith inquiry into the environmental consequences of the agency’s proposed action.” *W. Slope Colo. Oil & Gas Ass’n v. Jewell*, No. 14-cv-02764-CMA, 2017 WL 3530283, at *8 (D. Colo. Aug. 16, 2017). BLM’s “leap before it looked” violates NEPA.

C. BLM’s Alternatives Analysis Falls Short of NEPA’s Requirements.

The “heart” of the NEPA process is an agency’s duty to consider “alternatives to the proposed action” and to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E); 40 C.F.R. § 1502.14(a). An agency must “[r]igorously explore and objectively evaluate all reasonable alternatives” and specifically “[i]nclude the alternative of no action.” 40 C.F.R. §§ 1502.14(a), (d). “Reasonable alternatives . . . include alternatives that are technically and economically practical or feasible and meet the purpose and need of the proposed action.” 43 C.F.R. § 46.420(b).

Operating in concert with NEPA’s mandate to take a hard look at impacts, an agency’s fidelity to alternatives analysis allows agencies to “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. § 1502.14. NEPA’s implementing regulations emphasize the importance of fully informed and well-considered conservation decisions that “foster excellent action” and “protect, restore, and enhance the environment.” *Id.* § 1500.1(c); *see also id.* § 1500.2(e). As the Tenth Circuit has explained, “[w]ithout substantive, comparative environmental impact information regarding other possible courses of action, the ability of [a NEPA analysis] to inform agency deliberation and facilitate public involvement would be greatly degraded.” *N.M. ex rel Richardson v. BLM*, 565 F.3d 683, 708 (10th Cir. 2009). That analysis must identify multiple viable alternatives, so that an agency can make “a real, informed choice” between the spectrum of reasonable options. *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1039 (9th Cir. 2008).

The EA fails to consider a range of reasonable alternatives. BLM unreasonably narrowed the purpose and need for the action by myopically focusing on compliance costs to industry, without even referencing its own waste prevention mandate. Moreover, BLM failed to consider any actual “middle ground” alternatives between the no-action alternative and fully rescinding

the Waste Prevention Rule. BLM also unreasonably eliminated several viable alternatives from consideration without adequate explanation. Finally, BLM failed to consider reasonable alternatives that would have strengthened, rather than rescinded, the Waste Prevention Rule in order for the agency to satisfy its statutory mandates, in particular pursuant to the MLA and FLPMA.

1. BLM Unreasonably Defined the Purpose and Need

BLM has failed to identify a valid purpose and need for its Rescission Proposal. Furthermore, the purpose and need articulated in EA is unreasonably narrow, underpinning a range of alternatives that utterly fail to “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. § 1502.14. Instead, BLM’s purpose and need improperly subordinates the agency’s statutory duty to prevent waste beneath an unsupported fixation on action to reduce agency and industry compliance burdens and costs. As a result, BLM fails to give adequate consideration to maintaining the Waste Prevention Rule (the no action alternative) or improving the Waste Prevention Rule to provide even greater protections against waste of publicly owned natural resources.

BLM’s elevation of industry’s costs over its statutory obligations is evident by the EA’s plain language:

The purpose of and need for the proposed action analyzed in this EA is to eliminate unnecessary regulatory requirements in order to more efficiently manage oil and gas operations on Federal and Indian lands. The proposed action is needed at this time to balance the BLM’s interest in managing the risks of venting and flaring operations on Federal and Indian lands, with the compliance burden on the industry in light of State and tribal regulations, industry practices, and other factors. The proposed action is needed to reduce the administrative burden and implementation costs of the 2016 final rule, and to ensure that operators do not incur substantial and unnecessary compliance costs associated with regulatory requirements.

EA at 4. BLM’s purpose and need notably echoes the agency’s preamble to the propose rule, whose background section is dominated by references to certain executive and secretarial orders issued by the Trump administration that seek to deregulate energy-related sectors by rolling back rules, policies, and actions completed by the Obama administration that protected the public interest and ensured compliance with statutory mandates. *See* 83 Fed. Reg. at 7924, 7925.

As an initial matter, this purpose and need is based entirely on BLM’s unsupported and incorrect finding that the Waste Prevention Rule would “add regulatory burdens and substantial compliance costs that unnecessarily encumber energy production, constrain economic growth, and prevent job creation.” EA at 4. As discussed earlier in these comments, BLM’s own analysis shows that the Rescission Proposal would decrease natural gas production, and the costs of implementing the rule would not impose an unreasonable burden on industry. Accordingly, BLM has not demonstrated that there *is* a purpose and need for this action.

Furthermore, regardless of shifts in policy priorities from one administration to the next, the agency holds, *inter alia*, a fundamental statutory obligation pursuant to the MLA to “use all reasonable precautions to prevent waste of oil or gas developed in the land,” 30 U.S.C. § 225, and to prescribe rules “for the prevention of undue waste,” 30 U.S.C. § 187. In addition, BLM is obliged, pursuant to FLPMA, and “by regulation or otherwise,” to “take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C. § 1732(b).

BLM may not subordinate these statutory obligations beneath its concerns regarding alleged administrative burdens and implementation costs. And BLM certainly may not do so by defining a purpose and need that, as applied, precludes consideration of reasonable alternatives that would fulfill those statutory obligations. BLM’s purpose and need must, instead, reflect “the views of Congress, expressed, to the extent that the agency can determine them, in the agency’s statutory authorization to act.” *Nat’l Parks & Conservation Ass’n*, 606 F.3d at 1070 (quotation omitted). “Where an action is taken pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS.” *Alaska Survival*, 705 F.3d at 1084–85 (quoting *Westlands Water Dist. v. U.S. Dep’t of the Interior*, 376 F.3d 853, 866 (9th Cir. 2004)). In other words, “an alternative is reasonable only if it falls within the agency’s statutory mandate.” *N.M. ex rel. Richardson*, 565 F.3d at 709.

Problematically, the Rescission Proposal’s purpose and need for the EA does not help further, let alone adequately acknowledge, the primacy of the agency’s statutory duties to prevent waste or to prevent degradation. BLM’s purpose and need ignores or, at best, gives short shrift to the agency’s statutory multiple use, environmental protection, and air quality protection mandates. In its place, the purpose and need fixates on industry compliance costs and BLM’s own administrative and implementation costs. Put differently, BLM’s purpose and need suggests that, without regard to public interest benefits, administrative and implementation costs are *per se* bad. The purpose and need’s single reference to the BLM’s statutory duties—a vague intent “to balance the BLM’s interest in managing the risks of venting and flaring operations statutory duty” with compliance burdens and costs—only proves the point, in particular in light of BLM’s actual choice of action alternatives and rejection of other alternatives from detailed consideration (which forecloses BLM’s ability to choose those alternatives at the conclusion of the NEPA process). *See Or. Nat. Desert Ass’n v. BLM*, 625 F.3d 1092, 1124 (9th Cir. 2010) (“[U]ncritical privileging of one form of use over another . . . violates NEPA.” (quotation omitted)). On the basis of its unreasonably narrow purpose and need, BLM is likely to reject the no action alternative, which is the only alternative that seeks to implement BLM’s statutory directives. BLM’s action alternatives—in their drive to reduce compliance burdens and costs—would each result in increase waste of natural gas; foregone federal, state, and tribal royalties; and increased natural gas emissions. *None* of the action alternatives considered by BLM in the EA would prevent more natural gas waste (thus permitting the sale of captured gas), increase royalties, and reduce methane emissions.

As BLM’s RIA concedes, the Rescission Proposal (Alternative B in the EA) would result in the waste of 299 Bcf of natural gas, which, under the Waste Prevention Rule, would have been captured (or used on site) and sold. RIA at 48; *see also* 83 Fed. Reg. at 7939. The RIA further concedes that the Rescission Proposal would “result in forgone royalty payments to the Federal government, tribal governments, States, and private landowners” amounting to \$26.4 million

(NPV using a 7% discount rate) or \$32.7 million (NPV using a 3% discount rate). RIA at 51; *see also* 83 Fed. Reg. at 7939. Alternative 2, the only other action alternative considered in the EA, would also result in additional waste natural gas (91.6 Bcf) and foregone royalties amounting to \$18.6 million (NPV using a 7% discount rate) or \$32.7 million (NPV using a 3% discount rate). RIA at 48, 50. Furthermore, the EA notes that the Proposed Action (Alternative B), would “represent a return to the baseline prior to the 2016 final rule,” reversing the Waste Prevention Rule’s emissions reduction benefits. Accordingly, the Rescission Proposal would, compared to the Waste Prevention Rule, lead to 175,000-180,000 *more* tons of methane being emitted each year through increased flaring, venting, and leaks from oil and gas drilling on public lands. 81 Fed. Reg. at 83,070. It is difficult to conclude how these stark facts support a conclusion that BLM has complied with its statutory duties to prevent waste and UUD.

By fixating on unsupported allegations regarding compliance burdens and costs, BLM has unreasonably narrowed the purpose and need and effectively “preordained” the outcome of the NEPA process: a decision, no matter which action alternative is ultimately selected, that would result in increased waste of natural gas, foregone royalties, and increased emissions. *See Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1084 (9th Cir. 2013) (“A purpose and need statement will fail if it unreasonably narrows the agency’s consideration of alternatives so that the outcome is preordained”). Because “agencies are not permitted ‘to define the objectives of a proposed action so narrowly as to preclude a reasonable consideration of alternatives,’” BLM’s purpose and need violates NEPA. *Wyoming v. U.S. Dep’t of Agric.*, 661 F.3d 1209, 1244 (10th Cir. 2011) (quoting *Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1030 (10th Cir. 2002)).

2. BLM Unreasonably Eliminated Alternatives from Detailed Consideration.

In the EA, BLM rejected three alternatives from detailed consideration, precluding the option of choosing those alternatives at the end of the decision-making process. First, BLM rejected an alternative to streamline waste minimization plan requirements. Second, BLM rejected an alternative to retain but adjust the capture percentage framework for reducing flaring. And, third, BLM rejected an alternative to retain but limit the scope of requirements to reduce venting to wells that sell natural gas to market, wells that would receive positive returns from compliance, and wells that are not marginal. EA at 8. BLM rejected each alternative for the same reason: “pursuing these alternatives would not eliminate all unnecessary regulatory burdens on onshore oil and gas development.” *Id.* However, BLM provides no support for this statement, and the evidence in the record is to the contrary.

BLM’s reason is arbitrary and capricious, a product of its decision to unreasonably narrow the purpose and need and to subordinate the agency’s statutory duty to prevent waste and degradation beneath a dubious fixation on compliance burdens and costs. BLM’s reason is also problematic because it does not struggle with BLM’s countervailing acknowledgement, however vague, of “BLM’s interest in managing the risks of venting and flaring operations on Federal and Indian lands.” EA at 4. Instead, BLM rejected these alternatives from detailed consideration purely on the premise that they imposed “regulatory burdens” without accounting for the agency’s primary duty to prevent waste and degradation. This, notably, reveals the fact that BLM’s purpose and need is unreasonably narrow, subordinating, despite their primacy, the

agency’s statutory duties to prevent waste and UUD beneath a fixation on alleged “burdens,” inclusive of administrative and implementation costs.

Regardless, none of these alternatives are impractical or ineffective. *See N.M. ex rel. Richardson*, 565 F.3d at 708. As explained above, *see supra* Section III, the mere fact that a rule imposes some compliance “burdens” or costs—regardless of how reasonable they may be—is not a sufficient basis to reject action that may otherwise be necessary to conform to the BLM’s statutory duties to prevent waste and degradation. Moreover, BLM cannot simplistically frame those alternatives as imposing “burdens” the agency deems, in conclusory fashion, “unnecessary” when it is those very same “burdens” that would result in the capture or preservation and sale of natural gas that otherwise would have been wasted, increase royalties, and reduce emissions from oil and gas development on federal public lands and resources.

3. BLM Failed to Consider a Reasonable Range of Alternatives, Ignoring Reasonable Middle Ground Approaches

The EA, even if generously understood as not unreasonably narrowing the purpose and need and thus the scope of reasonable alternatives considered in detail, is nonetheless flawed because it does not consider several reasonable alternatives. Citizen Group Commenters emphasize this point because the purpose and need at least nominally explains that it is intended to “more efficiently manage oil and gas operations in Federal and Indian lands” and to account for “the BLM’s interest in managing the risks of venting and flaring operations on Federal and Indian lands.” EA at 4. Yet despite these representations, the approach taken by BLM with regard to alternatives suggests that the agency views the NEPA process, here, as a mere formality to support a preordained decision to rescind the 2016 methane rule or at least to replace it with a rule that, by BLM’s own admission, would increase waste of natural gas, reduce royalties, and increase emissions. None of the alternatives provides a true middle ground between the no action alternative, which would retain the Waste Prevention Rule, and entirely eliminating its waste prevention benefits. The absence of such a reasoned middle ground action alternative is unacceptable.

NEPA forbids this dynamic, and therefore BLM should consider several recommended and reasonable alternatives that would reduce methane emissions in detail. The agency retains the ability to integrate these alternatives into the agency’s final rulemaking decision. *See Seacoast Anti-Pollution League v. Nuclear Reg. Comm’n*, 598 F.2d 1221, 1230–31 (1st Cir. 1979) (agencies “must look into other significant alternatives that are called to its attention ... by the public during the comment period”). In this context, Citizen Group Commenters recommend that BLM provide detailed consideration to the following NEPA alternatives that will reduce, rather than increase, waste compared to BLM’s Proposed Action Alternative:¹⁷⁵

¹⁷⁵ To be clear, Citizen Group Commenters recommend that BLM should not in fact revise, and should instead retain, the Waste Prevention Rule, as the law requires it to do. But, should BLM choose otherwise, BLM Citizen Group Commenters recommend that BLM consider these reasonable NEPA alternatives. Further, BLM seeks comment on “ways that the BLM can reduce the waste of gas by incentivizing the capture, reinjection, or beneficial use of gas.” 83 Fed. Reg.

- (1) Assess the economic viability of natural gas waste prevention action at the basin or field level. This facilitates coordinated action by BLM, lessees, and operators within specific energy-producing areas to identify basin or field-level economies of scale or other cost reduction or cost sharing opportunities that can contribute to waste prevention.
- (2) Mandate that the scope of the agency's rule apply to all operators in a lease, unit, and communitized area, including committed state or private tracts in a federally approved unit or communitization agreement, so that all operators are required to take action to capture and market, reinject, or beneficially use gas.
- (3) Impose controls on the timing and pace of development to incentivize action by lessees and operators to synchronize upstream reduction with downstream gathering and processing infrastructure and capacity.
- (4) Require that lessees and operators co-locate and concentrate development and production infrastructure. Such requirements—especially when coupled with controls on the timing and pace of development—help ensure economies of scale that incentivize gas capture, promote beneficial use of gas, and reduce the aggregate footprint of waste-emitting infrastructure.
- (5) Distinguish action to prevent waste depending on whether the lessee or operator is engaged in exploration or production, with those requirements intensifying as the lessee or operator moves from exploration to production. In the Citizen Group Commenters' view, waste should be absolutely prohibited at the production stage and only allowed in limited circumstances at the exploration stage.
- (6) Retain and strengthen waste minimization plan requirements. *See supra* Section V(C).
- (7) Improve transparency by making data publicly available to incentivize compliance and provide another avenue for oversight. BLM should require the submission of leak detection and repair summary statistics, in addition to venting and flaring reports, and make all of this information publicly available. This type of transparency will increase public trust of operators while also enabling the public to hold operators accountable. BLM should also ensure outreach to the public is tailored to affected and interested communities, ensuring information is available in a variety of languages and types of communication. Citizen Group Commenters recommend BLM develop outreach plans tailored to different communities, including tribal communities.

BLM should consider these recommended and reasonable alternatives both as an aggregate package and as individual alternatives. These alternatives would prevent waste by

at 7929. Although Citizen Group Commenters dispute the premise that incentivizing waste reduction is a valid method of reducing waste, because it is neither proven successful nor consistent with BLM's statutory obligations, they recommend that BLM consider these alternatives as such methods to reduce waste.

providing for more “orderly and efficient” oil and gas operations, improve transparency, and build public trust. 43 C.F.R. § 3160.0–4. Each of these alternatives would also constitute a “reasonable precaution[.]” to prevent waste that positively shapes the economics of oil and gas exploration, development, and production operations and thus addresses concerns identified by GAO regarding institutional inertia and market failures, whereby oil and gas companies may have insufficient market incentives to allocate limited capital to waste reductions versus, e.g., the acquisition of new oil and gas leases. 30 U.S.C. § 225; *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (explaining “conservation through control was the dominant theme of the debates” involving the MLA (citing H.R. Rep. No. 66-398)); *see also* H.R. Rep. No. 65-1138 (1919) (“The legislation provided for herein...will [help] prevent waste and other lax methods....”). Timing, pace, and location measures also provide improved regulatory certainty for lessees and operators that incentivizes coordination within oil and gas producing fields and between upstream and midstream oil and gas sectors. In so doing, these measures may attract additional investment critical to methane prevention action across the upstream and midstream oil and gas sectors. Such coordination and investment increases the likelihood that upstream development on public lands can route produced gas to sales lines with sufficient capacity. It is imminently reasonable to require operators who benefit from publicly-owned oil and gas to plan ahead and cooperate across the upstream and midstream oil and gas sectors so that the public’s interest in receiving a fair return on the resources they own are placed above an individual operator’s bottom line.

Some BLM field offices have, importantly, already taken measured steps in the direction of our recommended alternatives, though they have far to go to truly take action that prevents waste and maximizes critical climate, air, and public health benefits commensurate to the scale of the challenges and opportunities that oil and gas development presents. For example, BLM’s Tres Rios Field Office (“TRFO”) located in Dolores, Colorado created, through its resource management plan, a guideline providing that new oil and gas be collocated and/or centralized for all new lease or new development areas. The facilities covered by this guideline are comprehensive, and include well pads, pipelines, compressors, fluid storage tanks, and other associated infrastructure such as well as roads, power sources and utilities.¹⁷⁶ This provision draws on the Colorado Comprehensive Air Resource Protection Protocol (“CARPP”) prepared by the BLM Colorado State Office, which includes recommendations for the centralization (or consolidation) of gas processing facilities” and, echoing other timing and pace controls we also recommend above, “reduced pace of (phased) development” as a best management practice for oil and gas development.¹⁷⁷ While at least partly focused on air quality, these timing, pace, and location measures are equally effective at preventing waste. Citizen Group Commenters recommend that, in considering their proposed alternatives, BLM assess existing measures approved by the agency’s field offices as well as the CARPP to identify action that, through consideration of alternatives and integration into agency rules, can be scaled nationally and

¹⁷⁶ BLM, TRFO Resource Management Plan at II-65 (2015) <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage¤tPageId=92880>.

¹⁷⁷ BLM Colorado State Office, Comprehensive Air Resource Protection Protocol (2013) https://eplanning.blm.gov/epl-front-office/projects/lup/68506/110860/135759/28_Appendix_L_CARPP.pdf.

therefore align BLM’s oil and gas program with its duty to prevent waste and UUD.

Citizen Group Commenters recommend that if BLM does not retain the Waste Prevention Rule in its current form, the agency consider applying Citizen Group Commenters’ recommended alternatives to every lessee and operator on public land—ensuring that these common-sense measures are scaled nationally. Implementing this recommendation would reduce the administrative burden on individual field offices to consider them through planning and management decisions. By requiring these measures by rule, BLM would also provide lessees and operators with regulatory certainty by clearly communicating requisite actions to prevent waste well before they invest time and money in preparing drilling plans and submitting APDs. When appropriate, BLM could build into the rule provisions providing for exceptions when, for example, field-level economic analysis shows that the required measures are not viable and are not necessary to prevent undue waste.¹⁷⁸

In considering these alternatives, BLM should also amplify the efficacy of these measures by providing, through rule, that the economics of waste prevention action be assessed at the basin or field level and by mandating basin or field-level methane reduction action through unitization and communitization agreements. *See* 43 C.F.R. §§ 3161.2, 3162.2-4(b) (BLM authority to require lessee unitization or communitization agreements); *id.* pt. 3180 (general rules pertaining to drilling unit agreements); BLM Form 3100-11 § 4 (2008) (BLM oil and gas lease contract requires reasonable diligence in development and production and allows BLM to require unitization). Such measures further the fundamental purpose of unitization and communitization, which are intrinsically related to general mandates to provide for orderly and efficient development of mineral resources. Given that oil and gas infrastructure—drilling pads, roads, pipelines, compressor stations, etc.—are interconnected and spread out across vast landscapes, it is critical to focus increased action to prevent waste at the basin or field level scale. In so doing, BLM would reduce its own administrative burdens, improve the economics of waste prevention, and provide heightened regulatory certainty for lessees and operators. As the agency assesses these measures through NEPA, Citizen Group Commenters recommend that BLM also consider an outright prohibition against venting and flaring at the production stage in unitized or communitized fields, premised on the distinction between the economics of exploration versus development and production phases, and the fact that production-phase development should have a full complement of methane capture, pipeline, and processing infrastructure.

Notably, BLM’s duty to consider these alternatives is operative regardless of whether BLM persists with an EA to justify the Rescission Proposal or chooses, as is required by NEPA, to prepare an EIS. NEPA requires BLM to “study, develop, and describe appropriate alternatives

¹⁷⁸ As an alternative to mandating that lessees and operators comply with these provisions by rule, BLM could also mandate, by rule, that individual BLM field offices consider imposing these measures through oil and gas-related planning and management decisions. The latter choice holds the advantage of allowing individual BLM field offices to better calibrate waste reduction actions to field-level conditions and circumstances, but holds the disadvantage of increasing the field office’s planning and management responsibilities and decreasing the regulatory certainty afforded to lessees and operators.

to recommended courses of action” in light of “*unresolved conflicts* concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E) (emphasis added). “[A]ny proposed federal action involving unresolved conflicts as to the proper use of resources triggers NEPA’s consideration of alternatives requirement, *whether or not an EIS is also required.*” *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1229 (9th Cir. 1988) (emphasis added). Citizen Group Commenters recommend these alternatives both on their own merit and given serious concerns that BLM’s rulemaking is a one-way ratchet towards weakened safeguards to prevent methane waste and degradation—e.g., reduced royalties and increased emissions. This is evidenced by the EA’s action alternatives, each of which would, by BLM’s own admission, reduce royalties and increase emissions. The reasonable alternatives we propose would, conversely, help BLM increase royalties and reduce emissions.

These reasonable alternatives also provide BLM—and the public—with an informed opportunity to question initial predispositions and “to rethink the wisdom of the action”—here, rescinding the Waste Prevention Rule and reverting to the framework provided by the demonstrably ineffective NTL-4A. *Nat. Res. Def. Council v. Hodel*, 865 F.2d 288, 296 (D.C. Cir. 1988); *see also Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) (“The rule of reason does not give agencies license to fulfill their own prophecies, whatever the parochial impulses that drive them.”). The proposed reasonable alternatives do so by helping BLM “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decision maker and the public.” 40 C.F.R. § 1502.14.

NEPA’s implementing regulations emphasize the importance of fully informed and well-considered decisions that “foster excellent action” and “protect, restore, and enhance the environment.” 40 C.F.R. § 1500.1(c); *see also id.* § 1500.2(e); *Andrus*, 442 U.S. at 350 (“[T]he thrust of [NEPA] is ... that environmental concerns be integrated into the very process of agency decision-making”). Given that BLM must “[r]igorously explore and objectively evaluate all reasonable alternatives,” 40 C.F.R. § 1502.14(a), “[t]he existence of reasonable but unexamined alternatives renders a [NEPA analysis] inadequate.” *Friends of Se.’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998) (citation omitted). Citizen Group Commenters therefore recommend that BLM consider our alternatives in detail in an EIS or revised EA to ensure a reasoned and informed NEPA analysis and rulemaking.

D. BLM Must Prepare an Environmental Impact Statement Because Rescinding the Waste Prevention Rule Would Cause Significant Adverse Effects on the Human Environment.

Where there are “substantial questions whether a project may have a significant effect on the environment,” BLM must prepare an EIS and cannot not justify its decision-making process on the basis of a lesser EA. *Anderson v. Evans*, 371 F.3d 475, 488 (9th Cir. 2004) (quotation omitted); 42 U.S.C. § 4332(C) (providing that BLM must complete an EIS before undertaking any “major Federal action[] significantly affecting the quality of the human environment”). The Council on Environmental Quality’s (“CEQ”) NEPA regulations define “[s]ignificantly” as requiring “considerations of both context and intensity.” 40 C.F.R. § 1508.27.

BLM's cursory 26-page Rescission Proposal EA raises more questions than it answers and is dramatically misaligned with the significant impacts of rescinding a nationwide rule that was designed to provide significant benefits in terms of waste reduction, increased royalties, and decreased air pollution. By BLM's own concession, the Rescission Proposal would lead to 175,000-180,000 *more* tons of natural gas being emitted each year through *increased* flaring, venting, and leaks from oil and gas drilling on public lands which exacerbates climate and public health impacts, as well as increases in associated air pollution from volatile organic compounds (250,000-267,000 additional tons) and hazardous air pollutants (1,860-2,030 additional tons). EA at 17, 19.

Moreover, BLM's Rescission Proposal cannot be divorced from the broader, cumulative impact of the agency's oil and gas program. As the agency notes, BLM's oil and gas program—and thus the Rescission Proposal's scope—implicates development across more than 245 million acres of public land and 700 million acres of federally-managed subsurface mineral estate. 83 Fed. Reg. at 7925. "In fiscal year (FY) 2016, sales volumes from Federal onshore production lands accounted for 9 percent of domestic natural gas production, and 5 percent of total U.S. oil production." *Id.* Citizen Group Commenters are unaware of any comprehensive NEPA analysis by BLM that has taken a hard look at the cumulative impact of this program to inform the national-level rulemaking, in particular, relative to climate and air emissions and impacts. Considering the relevant factors, both individually and in the aggregate, BLM must therefore prepare an EIS to properly evaluate the Rescission Proposal's direct, indirect and cumulative impacts; compare alternatives; and, on that basis, provide for the meaningful public involvement demanded by NEPA (and the APA) to inform its rulemaking process.

Citizen Group Commenters' concerns are exacerbated by the fact that BLM has not even produced a draft finding of no significant impact ("FONSI") for the public review. EAs must "briefly provide sufficient evidence and analysis for determining whether to prepare an EIS." *See Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 757 (2004) (quoting 40 C.F.R. § 1508.9(a)). "If, pursuant to the EA, an agency determines that an EIS is not required under applicable CEQ regulations, it must issue a . . . FONSI, which briefly presents the reasons why the proposed agency action will not have a significant impact on the human environment." *Id.* (citing 40 C.F.R. §§ 1501.4(e), 1508.13). Failing to provide a draft FONSI at the proposed rule stage is inconsistent with BLM's prior practices in comparable nationally-applicable rulemakings. For example, BLM's EA for its proposal to rescind the Hydraulic Fracturing Rule included a draft FONSI considering the requisite factors for determining whether an EIS is necessary. BLM, *Environmental Assessment: Rescinding the Hydraulic Fracturing on Federal and Indian Lands Rule*, DOI-BLM-WO-WO3100-2017-0001-EA at 41–46 (July 2017). BLM's failure to produce a draft FONSI in this proceeding deprives the public of an opportunity to review and comment on BLM's rationale for why an EIS is unnecessary. At this stage, it appears that BLM has chosen to proceed with an EA without first thinking through whether it can in fact reasonably justify a FONSI and whether, given the Rescission Proposal's national implications and significance, it should and perhaps must prepare a comprehensive EIS.

1. Context

Because BLM the Rescission Proposal has significant impacts which vary at the local, national, and global context, this factor warrants in favor of the agency producing an EIS. Context requires analyzing “the significance of an action . . . in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.” *Id.* § 1508.27(a). “Significance varies with the setting of the proposed action,” and for non-site-specific actions, significant may depend on “the world as a whole.” *Id.* “Both short- and long-term effects are relevant.” *Id.* Critically, impacts that may be insignificant in one context, may nonetheless be significant in a different context. *See Anderson*, 371 F.3d at 490–92. Here, however, the impacts of the rule are significant at the national, local, and global context.

The Rescission Proposal’s nationwide scope means the context factor weighs heavily in favor of a finding of significance. The types of actions that BLM’s NEPA Handbook lists as requiring completion of an EIS include: approvals of resource management plans, regional coal leases, and mining operations of greater than 640 acres. BLM Handbook H-1790-1 § 7.2(1), (3), (7) (2008), https://www.ntc.blm.gov/krc/uploads/366/_H-1790_508.pdf (“BLM NEPA Handbook”). Rescinding nationally-applicable regulations governing waste prevention from thousands of oil and gas wells, both existing and reasonably foreseeable, across the entire 700 million acre federal subsurface mineral estate that BLM manages is even broader in scale than any of these listed activities, and thus requires preparation of an EIS.

Moreover, the Rescission Proposal must be viewed in the context of BLM’s rationale for its Proposed Action. BLM asserts that it is rescinding the Waste Prevention Rule because it “unnecessary[il]y overlap[s] . . . [with] EPA regulations.” 83 Fed. Reg. at 7928. But EPA has also committed to revising or rescinding its regulations. *See* 82 Fed. Reg. 27,645, 27,646 (June 16, 2017) (explaining EPA’s plan for reconsidering its regulations and proposing to stay provisions of the regulations for two years). With the nationwide regulatory landscape subject to such uncertainty, the nationwide scope of the Rescission Proposal makes the context of the even more significant.

The Rescission Proposal also has significant local and regional implications because increases in methane emissions, along with the associated VOC and HAP pollution harms local air quality and public health. The EA fails to examine these local and regional impacts. This failure is perplexing because BLM seeks to justify the Rescission Proposal by explaining that “some States with significant Federal oil and gas production have similar regulations addressing the loss of gas from these sources,” 83 Fed. Reg. at 7926, and as a result, for most provisions of the Waste Prevention Rule, BLM “inten[ds] . . . to defer to State and tribal statutes and regulations,” *id.* at 7937. In other words, BLM’s Rescission Proposal is expressly intended to defer action to prevent methane waste to a local and regional context—i.e., individual state or tribal jurisdictions—but does not analyze the effects of its proposed action in that context.

There are significant distinctions between relevant state regulatory regimes, and many tribes have no regulations at all. Accordingly, the context factor requires BLM to consider how relying on a patchwork of state and tribal regulations will affect *local* contexts in very different ways. For example, New Mexico has limited to no standards in place for most of the emissions sources covered by the Waste Prevention Rule, and the Navajo Nation has no venting and flaring regulations. This lack of regulations is particularly significant given that much of the

development within or proximate to the Navajo Nation occurs in the San Juan Basin, the location of the well-known methane hotspot. The Rescission Proposal will create a patchwork of locally-varying environmental impacts throughout the San Juan Basin, with different communities enjoying highly variable levels of protection from the health and safety risks posed by venting and flaring. Emissions in this area may disproportionately impact marginalized populations, risking serious environmental justice concerns. *See* Executive Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). BLM has ignored these concerns.

BLM must address its failure to consider the local and regional context of its decision by preparing an EIS that at least provides a state-by-state hard look at direct, indirect, and cumulative impacts. Notably, depending on the patterns of development within those states, this may necessitate more refined analysis at the basin or field level. For example, in New Mexico, there are significant distinctions between development in the Permian versus San Juan Basins. The Permian Basin involves a heavier proportion of oil drilling, while the San Juan Basin involves more natural gas drilling. Moreover, the geographies—and socioeconomic and cultural dynamics—of these two basins are quite distinct. BLM must account for these distinctions in context through an EIS. Even if BLM thinks that, in the aggregate, the Rescission Proposal’s impacts may not be nationally significant, there may be locally significant impacts to specific places or communities because of the new regulatory patchwork created by rescinding the Waste Prevention Rule. *See Anderson*, 371 F.3d at 490 (noting that “local effects” may provide “a basis for a finding that there will be a significant impact” even where regional impacts are not significant).

Finally, the Rescission Proposal has global implications because of the role that BLM’s oil and gas program plays in contributing to global climate change. Indeed, the global context of increasing methane emissions by 180,000 tpy alone warrants preparing an EIS. *See* EA at 17. Notably, the EA compares these emissions only to total U.S. greenhouse gas emissions, despite the fact that NEPA compels the agency to assess impacts in “context” at different scales, including, relevant here, the global context given the global reach of climate change and global impact of methane pollution. *Id.* at 18. And BLM’s RIA focuses myopically on the domestic social cost of these methane emissions, sweeping the global SCM under the rug. RIA at 33–34. However, pursuant to NEPA, BLM may not ignore these global costs. *See* 40 C.F.R. § 1508.27(a) (noting that “context” of an agency action may be “the world as a whole”). For the Rescission Proposal, that scope is undeniably not just national, but global because greenhouse gases are global pollutants. *See Wash. Env’tl. Council v. Bellon*, 732 F.3d 1131, 1143 (9th Cir. 2013) (“Greenhouse gases, once emitted from a specific source, quickly mix and disperse in the global atmosphere and have a long atmospheric lifetime.”). Considering only the local, or even national, scale of methane emissions to the exclusion of the global context in which greenhouse gas emissions are most relevant falls short of BLM’s NEPA obligation to take a hard look at the impacts of its action at the relevant scale. Thus, BLM, in the EA, must, pursuant to NEPA, address the global SCM and cannot rely exclusively on the domestic Interim SCM.

2. Intensity

The EA’s deficiencies relative to context are only amplified by consideration of the other aspect of significance, intensity. “[I]ntensity . . . refers to the severity of impact.” 40 C.F.R.

§ 1508.27(b). CEQ has developed a list of ten factors that should be considered when an agency is determining whether an action has sufficient intensity to be considered significant. *Id.* The presence of any “one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances.” *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 402 F.3d 846, 865 (9th Cir. 2005). Numerous significance factors require BLM to prepare an EIS for the Rescission Proposal.

a. Public Health and Safety

The Rescission Proposal will indefinitely increase emissions of climate and air pollutants by hundreds of thousands of tons every year, which significantly impacts public health. A key factor in determining intensity is “[t]he degree to which the proposed action affects public health or safety.” 40 C.F.R. § 1508.27(b)(2). An action can be significant because of its public health and safety impacts even if it is not the only cause of the health or safety risk at issue. *See Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 583 F.3d 1172, 1222 (9th Cir. 2008) (“*CBD v. NHTSA*”) (setting vehicle emission standards had significant impact on public health even though it was not the sole cause of global climate change). According to BLM’s NEPA Handbook, this factor requires the agency to evaluate air quality in relation to public health and safety. BLM NEPA Handbook H-1790-1 § 7.3.

Emissions of ozone precursors, methane, and HAPs affect public health. As one court has recognized, the “additional emissions” from suspending the Waste Prevention Rule for a single year “will cause irreparable public health and environmental harm to [members of the public] who live and work on or near public and tribal lands with oil and gas development.” *California v. BLM*, 286 F. Supp. 3d 1054, 1073 (N.D. Cal. 2018). There is no question that an equal magnitude of additional emissions extending every year into the indefinite future are also significant, and warrant BLM completing an EIS.

First, ozone formation caused by the Rescission Proposal specifically warrants BLM creating an EIS, in particular to address contextually local impacts that may prove significant. *See Anderson*, 371 F.3d at 490–92. Courts have specifically recognized the public health harms posed by oil and gas development on public lands emitting VOCs, which contribute to ozone formation, and “in sufficiently large concentrations, ozone can have a negative impact on public health.” *Amigos Bravos v. BLM*, No. 6:09-CV-00037-RB-LFG, 2011 WL 7701433, at *20 (D.N.M. Aug. 3, 2011).¹⁷⁹ Many areas where BLM administers oil and gas development have ozone problems.¹⁸⁰ Yet these areas, where sustained, chronic, and ever-accumulating air

¹⁷⁹ Another court acknowledged that oil and gas development’s air quality impacts could show significance under § 1508.27(b)(2) but focused its analysis on water quality impacts. *Ctr. for Biological Diversity v. BLM*, 937 F. Supp. 2d 1140, 1158 (N.D. Cal. 2013) (“*CBD v. BLM*”).

¹⁸⁰ For example, Colorado’s Denver Metro/Northern Front Range area has been an ozone nonattainment area for nearly a decade. *See EPA, 8-Hour Ozone (2008) Nonattainment Area Area/State/County Report* (Sept. 30, 2017), www3.epa.gov/airquality/greenbook/hnca.html (“Green Book”); *see also* Ava Farouche, *Producing Wells on Public Lands Within the Nonattainment Area* (Oct. 26, 2017) (documenting 186 oil and gas wells on public lands within

pollution raise substantial questions regarding localized air and public health impacts, are neither identified nor evaluated for purposes of NEPA. The *California* court recognized the health risks that suspending the Waste Prevention Rule for a year would cause in ozone nonattainment areas, explaining that it would increase emissions of VOCs in “at risk communities” by 2,089 tons in a single year, “leading to and exacerbating impaired lung functioning, serious cardiovascular and pulmonary problems, and cancer and neurological damage.” 286 F. Supp. 3d at 1073–74. Allowing such VOC emissions to go unabated for the indefinite future, rather than for a single year, raises substantial questions regarding air and public health impacts, both nationally and locally, in particular in areas with existing ozone problems, that warrants preparation of an EIS.

Second, the Rescission Proposal’s climate impacts raise substantial questions regarding public health impacts. BLM acknowledges that its proposed course of action will result in “forgone methane emissions reduction of 175,000 to 180,000 tpy over the 10-year period of evaluation.” EA at 17. In other words, the Rescission Proposal will increase methane emissions by 180,000 tons every year. BLM attempts to minimize the significance of that increase by stating that this is only 0.61% of total U.S. methane emissions in 2015. *Id.* at 18. Despite BLM’s attempts to minimize them, these climate impacts in fact raise substantial questions. The *California* court rejected BLM’s attempt to rely on the 0.61% statistic and to minimize the Suspension Rule’s climate impacts, explaining that in fact, using methane’s 20-year global warming potential, these emissions are the equivalent of over 3,000,000 passenger vehicles driving for a year, and over burning over 16 billion pounds of coal. 286 F. Supp. 3d at 1073. Moreover, as CEQ has previously noted, comparing a proposed action’s emissions to a percentage of total global or national emissions does not reveal anything beyond “the nature of the climate change challenge itself”—the fact that many individual sources together make a big impact on the climate.¹⁸¹ Moreover, nowhere does the Rescission Proposal EA event acknowledge the fact that methane is a significant global warming pollutant far more potent than carbon dioxide, in particular on a 20-year time horizon. Regardless, other courts have similarly held that agency actions that have even relatively minor impacts on greenhouse gas emissions have a significant effect on public health and safety because of their climate change implications. *CBD v. NHTSA*, 538 F.3d at 1221–22 (holding that there is a “substantial question” about

the Denver-Boulder-Greeley-Ft. Collins-Loveland nonattainment area). The Northern Front Range is also slated to be designated nonattainment with the 2015 NAAQS. Colo. Dep’t of Pub. Health & Env’t, *Technical Support Document for Recommended 8-Hour Ozone Designations* at 51 (Sept. 15, 2016), <https://www.epa.gov/sites/production/files/2016-11/documents/co-rec-td.pdf>. EPA has proposed designating the Uinta Basin, which contains significant development on federal and tribal leases, as an ozone nonattainment area, *see* 83 Fed. Reg. 651 (Jan. 5, 2018), and will finalize that proposal just one week after the close of the comment period on the Rescission Proposal, *see In re Ozone Designation Litg.*, No. 17-cv-6900-HSG, 2018 WL 1258209, at *5 (Mar. 12, 2018). And Wyoming’s Upper Green River Basin was designated nonattainment with the 2008 NAAQS, *see* EPA, Green Book, although EPA later determined that it attained the NAAQS, 81 Fed. Reg. 26,697, 26,700–01 (May 4, 2016).

¹⁸¹ CEQ, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* at 9 (Aug. 1, 2016),: https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf, withdrawn by 82 Fed. Reg. 16,576 (Apr. 5, 2017).

whether a 0.2% decrease in U.S. carbon dioxide emissions may cause significant impacts “in light of the compelling scientific evidence concerning positive feedback mechanisms in the atmosphere” (quotations omitted)).

Third, the Rescission Proposal will significantly impact public health by increasing HAPs emissions. BLM acknowledges that the proposed Rule will “creat[e] forgone reductions of emissions of various air pollutants . . . [including] HAPs.” EA at 19. BLM quantified the increased HAPs emissions as 2,030 tons per year—or 20,300 tons over the 10-year period that BLM evaluated. *Id.* BLM further acknowledged that “[n]atural gas contains various toxic air pollutants, such as benzene,” which “affect the public health and welfare of humans.” *Id.* Increasing the emissions of known carcinogens like benzene by 20,300 is clearly a significant impact on public health that warrants creating an EIS.

Finally, as further evidence that an EIS is warranted, the Rescission Proposal’s annual emissions exceed emissions from some of the largest BLM-approved oil and gas projects on federal leases that BLM has analyzed in recent years. As demonstrated in Table 10 below, the Rescission Proposal’s VOC and methane emissions are orders of magnitude greater than VOC and methane emissions from these projects, which BLM deemed sufficiently significant to prepare EISs. The Rescission Proposal’s HAPs emissions are also greater than HAPs emissions from any of these projects. That BLM has considered such emissions to be sufficient to warrant creating an EIS in the past is further evidence that BLM should create an EIS for the Rescission Proposal.

Table 10, Emissions from BLM Oil and Gas Projects¹⁸²

Project	Annual CH₄ Emissions (tons)	Annual VOC Emissions (tons)	Annual HAPs Emissions (tons)
Rescinding Waste Prevention Rule	180000	267000	2030
West Tavaputs	2629	12130	434
Monument Butte	12587	10361	1005
Normally Pressured Lance	6008	808	71
Bull Mountain Unit	n/a	80	20

¹⁸² All values represent one year of emissions, based on quantified annual emissions, or the project year BLM identified as representative. EA at 17–19; BLM, *Final Environmental Impact Statement (EIS) for the West Tavaputs Gas Full Field Development Plan* at 4-17 (July 30, 2010); BLM, *Final Environmental Impact Statement for Newfield Exploration Corporation Monument Butte Oil & Gas Development Project in Uintah and Duchesne Counties, Utah, UT-G010-2009-0217* at 4-7 (2016) https://eplanning.blm.gov/epl-front-office/nepa/75396/2_Chapter_4_thru_Attachment_2.pdf; BLM, *Normally Pressured Lance Natural Gas Development Project Draft Environmental Impact Statement* at 4-21, 4-26, 4-57 (July 2017), https://eplanning.blm.gov/epl-front-office/projects/nepa/57654///NPL_DEIS_web.pdf (using year-10 values); BLM, *Final Environmental Impact Statement for the Bull Mountain Unit Master Development Plan* at 4-46 (July 2016), https://eplanning.blm.gov/front-office/projects/nepa/66641/95952/Mtn_Final_EIS_July_2016_Vol_I_reduced.pdf (using year-5 values; greenhouse gas emissions for year 5 were quantified at 44,389 tons of CO_{2e}, rather than tons of methane).

b. Controversy

Ongoing scientific debate and concerns raised by many government officials and members of the public also warrant preparing an EIS. Another significance factor is “[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial.” 40 C.F.R. § 1508.27(b)(4). An action “is highly controversial when there is a substantial dispute about the size, nature, or effect of the major Federal action rather than the existence of opposition to a use. Put another way, a proposal can be considered controversial if substantial questions are raised as to whether a project may cause significant degradation of some human environmental factor.” *Anderson*, 371 F.3d at 489 (citations and quotations omitted). Similarly, BLM’s NEPA handbook explains that “[c]ontroversy in this context means disagreement about the nature of the effects Substantial dispute within the scientific community about the effects of the proposed action would indicate that the effects are likely to be highly controversial.” BLM Handbook H-1790-1 § 7.3.

First, as BLM itself acknowledges, there is perhaps no better evidence of the controversy surrounding the Waste Prevention Rule than BLM’s own abruptly changed position regarding the Rule’s climate benefits. In 2016, BLM described the Rule as having “substantial climate . . . benefits.” 2016 EA at 5. Barely a year later, BLM’s lawyers described the same methane emissions reductions as “minimal” and “insignificant.” Defs.’ Opp’n to Plfs.’ Mots. for a Prelim. Inj. 14, *California v. BLM*, No. 17-cv-7186-WHO (N.D. Cal. Jan. 16, 2018), ECF No. 67. BLM’s abrupt reversal on whether the Waste Prevention Rule produces climate benefits reflects a major source of controversy regarding the magnitude of the Rule’s impacts, positive and negative. More broadly, it implicates a controversy—as evidenced by the stark differences of perspective provided by the current administration relative to the prior administration—over whether any given federal regulation may have sufficient climate benefits to drive and inform agency action. Further explanation and examination of this controversy warrants the agency completing an EIS.

Second, BLM has used a much-disputed Interim SCM value and has selected discount rates that are far higher than recommended by the vast majority of experts and out-of-step with peer-reviewed research. *See* RIA at 33–35. These analytical choices ignore years of work by the federal government’s Interagency Working Group (“IWG”)—which spent years developing a global social cost of greenhouse gases based on the consensus science and economics—and have been the subject of consistent criticism ever since the federal agencies began abandoning the IWG’s approach during the Trump Administration. Indeed, many of the undersigned organizations have submitted comments in a numerous public dockets rejecting the use of “domestic-only” social cost of greenhouse gas metrics utilizing inflated discount rates. BLM’s approach flatly ignores the global climate benefits of methane waste reductions and drastically underestimates inter-generational climate benefits and costs. As discussed above, *see supra* Section IV(C)(1), BLM’s treatment of the SCM is highly disputed, and represents exactly the sort of controversial decision concerning the size, nature, or effect of the major Federal action which compels preparation of an EIS.

Additionally, “[a]lthough mere opposition to the project does not in itself create a controversy, the volume of comments from and the serious concerns raised by federal and state agencies specifically charged with protecting the environmental may support a finding that an EIS is necessary.” *CBD v. BLM*, 937 F. Supp. 2d at 1157–58 (quotation omitted). BLM received over 330,000 public comments prior to finalizing the Waste Prevention Rule. *See* 81 Fed. Reg. at 83,010. A wide range of groups submitted comments in support the Rule, including three U.S. Senators, four U.S. Congresspeople, two former BLM Directors, six New Mexico local governments, 41 current and former state and local elected officials in New Mexico, nine local governments in Colorado, 26 current and former state and local elected officials in Colorado, and dozens of businesses and faith, environmental, public health, tribal, and sportsmens’ groups. *See* Env’tl. Def. Fund, *List of Elected Officials, Groups, Businesses, and Individuals that Called for Action in Reducing Natural Gas Waste on Public and Tribal Lands* (2016). After the Rule was promulgated, numerous states, tribes, and local governments raised concerns with various attempts to repeal or stay the Rule. California and New Mexico have twice successfully sued BLM and overturned the agency’s unlawful attempts to suspend the Waste Prevention Rule. *California v. BLM*, 286 F. Supp. 3d at 1054; *California v. BLM*, 277 F. Supp. 3d 1106, 1122–23 (N.D. Cal. 2017). One-hundred and thirteen local elected officials, including mayors from Colorado, New Mexico, Idaho, Nevada, Wyoming, and Utah urged the U.S. Senate not to repeal the Waste Prevention Rule using the Congressional Review Act. Kellie Lunney & Geof Koss, *Repeal of BLM Methane Rule Will Pass Senate—Barrasso*, E&E News (Apr. 27, 2017), www.eenews.net/stories/1060053662. The Navajo Nation, Standing Rock Sioux Tribe, and the Mandan, Hidatsa, and Arikara Nation also asked Congress not repeal the Waste Prevention Rule. *Tribal Groups Press U.S. Senate to Keep BLM Methane Waste Rule*, Pub. News Serv. (May 8, 2017), www.publicnewsservice.org/2017-05-08/climate-change-air-quality/tribal-groups-press-u-s-senate-to-keep-blm-methane-waste-rule/a57587-1. Ultimately, the Senate failed to rescind the Rule. Given the tremendous support and public interest in the Waste Prevention Rule, an EIS is warranted.

c. Individually Insignificant but Cumulatively Significant

BLM must prepare an EIS because the Rescission Proposal is significant when considered alongside the climate and localized impacts of BLM’s oil and gas program. An action can be significant if it “is related to other actions with individually insignificant but cumulatively significant impacts.” 40 C.F.R. § 1508.27(b)(7). As BLM’s NEPA handbook explains, this analysis overlaps with the cumulative impacts inquiry. *See* BLM NEPA Handbook H-1790-1 § 7.3. This factor is thus addressed in the cumulative impacts section below.

d. Uncertain or Unknown Risks

Because there is uncertainty about several about the Rescission Proposal’s impacts, BLM must prepare an EIS. An agency action can be significant based on “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.” 40 C.F.R. § 1508.27(b)(5).

First, BLM claims that there is too much uncertainty about the effects of climate change for the agency to analyze the Rescission Proposal’s climate impacts. *See* EA at 14 (explaining

that maintaining the Waste Prevention Rule “is anticipated to have positive effects on climate change because of reduced GHG emissions,” but noting “that the actual effects of such reductions on global climate change cannot be reliably assessed at this time and thus are sufficiently uncertain as to be not reasonably foreseeable”); *id.* at 18 (“[T]he actual effects of such [methane] emissions on global climate change cannot be reliably assessed and thus are sufficiently uncertain as to not be reasonably foreseeable.”). Citizen Group Commenters fundamentally disagree with that premise. As an initial matter, BLM’s attempt to excuse itself from further assessing climate change effectively results in an assumption that climate impacts are zero. This is obviously not the case. Indeed, in 2016, BLM analyzed both how climate change impacted BLM-managed lands, 2016 EA at 27–30, and how the Waste Prevention Rule would impact climate change, *id.* at 45–59. Now, BLM has abruptly reversed course and states, without support, that the “2016 EA should not be interpreted to suggest that there are known climate change effects from reducing GHG emissions by implementing the 2016 final rule.” EA at 10. As knowledge of how greenhouse gas emissions impact the climate has increased, rather than decreased, since 2016, this argument—which, again, effectively pretends, for decision-making purposes, that climate impacts are zero—is deeply flawed. However, even assuming *arguendo* that climate impacts are indeed uncertain, this uncertainty itself warrants BLM preparing an EIS in which it can fully analyze the uncertainty, instead of merely stating that such uncertainty exists. This is particularly the case given that uncertainties regarding climate change do not cut both ways. Rather, the weight of the evidence suggests that the uncertainties implicated by climate change in terms of impacts to the human environment may be far greater, and more serious, than estimated.

Second, there is an inherent uncertainty to monetizing the negative impacts of each marginal ton of methane. To be sure, as discussed above, the IWG’s approach, developed over a number of years, reflects the consensus science and economics developed to quantify those costs, and should be used by all federal agencies until a more representative tool is developed based on updated science and economics. (As discussed elsewhere, BLM’s Interim SCM is decidedly *not* a more representative metric, but is, in fact, far inferior to the IWG’s approach). Yet there is nonetheless significant uncertainty that is an inherent part of any attempt to determine the discrete economic costs that will result from GHG emissions. As the IWG itself acknowledged, “[u]ncertainty about the value of the SC-CO₂ is in part inherent, as with any analysis that looks into the future, but it is also driven by current data gaps associated with the complex physical, economic, and behavioral processes that link GHG emissions to human health and well-being.” IWG, *Technical Support Document: -Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866* at 18 (Aug. 2016). The IWG specifically developed its SCM estimates—which cover a range of potential scenarios and assumptions—so as to account for this uncertainty. BLM likewise accepts this fact, devoting several pages of analysis to the uncertainty of its own (flawed) Interim SCM in the RIA. Given the accepted fact that monetizing climate damages—a critical and legally mandatory exercise—involves key uncertainties, as well as the importance of the SCM to quantifying the Waste Prevention Rule’s benefits, BLM should complete an EIS and engage in additional analysis to further explore these uncertainties.

Finally, the Interim SCM is far from the only uncertainty identified in the RIA. The RIA provides a bullet point list of nine other sources of uncertainty, including, *inter alia*, operator

behavior, crude oil prices, voluntary compliance, whether operators would actually abandon marginal wells rather than comply with the Waste Prevention Rule, damage to reservoirs from temporarily shutting-in wells, whether the Waste Prevention Rule’s incremental costs would actually shift drilling away from federal lands, and leak rates and LDAR effectiveness. RIA at 36. All of these factors have the potential to significantly change the Rescission Proposal’s overall environmental impacts, and many go to the heart of whether BLM’s rationale for the Rescission Proposal is valid in the first place. Additional analysis of these factors in an EIS would provide valuable additional information for both the agency and the public, and makes this factor weigh in favor of BLM completing an EIS.

e. Compliance with other Environmental Laws

Finally, BLM must consider “[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.” 40 C.F.R. § 1508.27(b)(10). A court need not identify a legal violation for this significance factor to apply. A real “danger” of such a violation counsels in favor of an agency action being considered significant. *Native Ecosystems Council v. U.S. Forest Serv.*, 866 F. Supp. 2d 1209, 1231 (D. Idaho 2012). As discussed elsewhere in these comments, BLM’s proposed suspension violates the APA, MLA, IMLA, and FLMPA. *See Conservation Cong. v. U.S. Forest Serv.*, No. CIV. S-13-0832 LKK, 2013 WL 4829320, at *16 & n.37 (E.D. Cal. Sept. 6, 2013) (failure to consult as required under the ESA can constitute a violation of 40 C.F.R. § 1508.27(b)(10) when agency also fails to prepare an EIS).

Moreover, the Rescission Proposal may contribute to violations of the Clean Air Act. As the *California* court acknowledged, BLM administers many oil and gas wells in ozone nonattainment areas, and even suspending the Waste Prevention Rule for a single year has the potential to adversely impact ozone levels in those “at-risk communities.” 286 F. Supp. 3d at 1073. The *Amigos Bravos* court scrutinized whether BLM considered ozone concentrations in regions impacted by its oil and gas decisions when determining whether an action was significant under § 1508.27(b)(10). *Amigos Bravos*, 2011 WL 7701433, at *21.

But BLM has not even attempted to analyze whether the Rescission Proposal will contribute to violations of ozone standards.¹⁸³ Although BLM acknowledges that its proposed suspension will increase emissions of VOCs—an ozone precursor—by 267,000 tons, it does not analyze whether these increased emissions could contribute to ozone nonattainment. EA at 19. Doing so is crucial, because BLM manages many oil and gas wells in ozone nonattainment areas, such as Colorado’s Northern Front Range Utah’s Uinta Basin, and Wyoming’s Upper Green River Basin. Yet BLM has not analyzed whether its proposed action will contribute to nonattainment in these areas, and given their current and past unhealthy ozone levels, there is a real “danger” of such a violation. *See Native Ecosystems Council*, 866 F. Supp. 2d at 1231. This counsels in favor of BLM completing an EIS and undergoing a more thorough analysis of

¹⁸³ Outside the NEPA context, BLM also has an independent obligation to “provide for compliance” with state and local ozone regulations under FLPMA. *See* 43 U.S.C. § 1712(c)(8); *see also supra* Section III(B).

whether the Rescission Proposal will cause continued violations of the Clean Air Act in these or other areas.

E. BLM Has Not Taken a Hard Look at the Impacts of its Proposed Action.

BLM must take a hard look at direct, indirect, and cumulative impacts to inform the agency's consideration of alternatives and, ultimately, final decision. 40 C.F.R. §§ 1508.7, 1508.8, 1508.25(c). NEPA requires agencies to take a "hard look at all aspects" of the issue under consideration. *See Greater Yellowstone Coal. v. Larson*, 641 F. Supp. 2d 1120, 1149 (D. Idaho 2009). In a world suffering from climate change and dealing with complex energy issues, NEPA compels BLM to address "[e]nergy requirements and conservation potential of various alternatives and mitigation measures," "[n]atural or depletable resource requirements and conservation potential of various alternatives and mitigation measures," and "[m]eans to mitigate adverse environmental impacts (if not fully covered under 1502.14(f))." *Id.* § 1502.16(e), (f), (h).

Further underscoring why a comprehensive EIS is needed for the Rescission Proposal, BLM's cursory, 26-page EA simply does not include sufficient analysis to provide the reasoned analysis that NEPA demands. NEPA "establish[es] procedural mechanisms that compel agencies . . . to take seriously the potential environmental consequences of a proposed action. [Courts] have termed this crucial evaluation a 'hard look.'" *Ocean Advocates*, 402 F.3d at 864 (quotation omitted). Agencies "cannot avoid preparing an EIS by making conclusory assertions that an activity will have only an insignificant impact on the environment." *Id.* "If an agency . . . opts not to prepare an EIS, it must put forth a convincing statement of reasons that explain why the project will impact the environment no more than insignificantly." *Id.* (quotations omitted). Agencies fail to take a hard look when they rely on "patently inaccurate factual contention[s]," and unsupported assertions without reasoned evaluation. *Id.* at 866. Agencies also fail to take a "hard look" when they jump to a conclusion that an impact will be minimal despite evidence demonstrating that harmful impacts are possible. *N.M. ex rel. Richardson*, 565 F.3d at 714–15. BLM has failed to take the requisite hard look at climate impacts, tribal lands, state and tribal regulations, EPA regulations, air quality, and the baseline environment.

1. BLM Failed to Take a Hard Look at Climate Change.

NEPA requires consideration of climate change. This requirement is discernable from NEPA's text. NEPA requires federal agencies to consider "the environmental impact of the proposed action" including "*any adverse environmental effects which cannot be avoided.*" 42 U.S.C. § 4332(2)(C)(i)-(ii) (emphasis added). NEPA defines "effects" or "impacts" (which are synonymous) to include "ecological[,] . . . economic, [and] social" impacts of a proposed action. 40 C.F.R. § 1508.8(b). Impacts may be direct, indirect, or cumulative. *Id.* § 1508.25(c). A cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions." *Id.* § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions take place over a period of time." *Id.* Indirect effects are those "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* § 1508.8(b). "Indirect effects may include . . . related effects on air and water and other natural systems, including ecosystems." *Id.*

Thus, to fulfill their obligations under NEPA, agencies must quantify the direct, indirect and cumulative effects of the emissions attributable to an action on climate change. “Direct” emissions are emissions from production, including venting, flaring, and leaks. “Indirect” emissions include transportation, downstream uses, and combustion. “Cumulative” emissions require consideration of the project’s emissions alongside other foreseeable emissions, such as those from all other BLM-managed oil and gas. Courts have held that downstream emissions are “reasonably foreseeable” indirect impacts. *See Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003) (agency must evaluate potential air quality impacts associated with increase in coal consumption); *S. Fork Band Council v. BLM*, 588 F.3d 718, 725–26 (9th Cir. 2009) (air quality impacts associated with transport and off-site processing are indirect effects); *Diné Citizens Against Ruining Our Env’t v. U.S. Office of Surface Mining Reclamation & Enft*, 82 F. Supp. 3d 1201, 1214 (D. Colo. 2015) (agency must discuss the mercury-related indirect effects of proposed mine expansion).

Quantification of emissions alone does not satisfy NEPA’s requirement to consider direct, indirect, and cumulative climate effects of an action; an agency must also analyze the actual effects of those emissions. *See Ctr. for Bio. Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) (“*CBD v. NHTSA*”) (while agency “quantifies the expected amount of CO₂ emitted from light trucks ... the EA does not discuss the *actual* environmental effects resulting from those emissions”). The need to evaluate such impacts is bolstered by the fact that “[t]he harms associated with climate change are serious and well recognized,” and environmental changes caused by climate change “have already inflicted significant harms” to many resources around the globe. *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007); *see also id.* at 525 (recognizing “the enormity of the potential consequences associated with manmade climate change.”).

Although NEPA does not require a cost-benefit analysis, it is arbitrary and capricious for an agency to quantify benefits of its actions while ignoring available means of quantifying the costs of its actions. *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1192 (D. Colo. 2014); *see also Michigan*, 135 S. Ct. at 2707 (agencies must consider the advantages *and* disadvantages of their decisions); *CBD v. NHTSA*, 583 F.3d at 1200 (holding it arbitrary to consider an artificially low cost to greenhouse gas emissions); *Hughes River Watershed Conservancy v. Glickman*, 81 F. 3d 437, 446–48 (4th Cir. 1996) (agencies cannot rely on inaccurate economic assumptions); *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (agencies must consider both costs and benefits of their actions); *California v. BLM*, 277 F. Supp. 3d 1106, 1122–23 (N.D. Cal. 2017) (same).

BLM claims that “there are no scientific tools or methodologies that can reliably predict the degree of impact that implementing the 2016 final rule would have on global or regional climate change or on changes to biotic and abiotic systems that accompany climate change,” EA at 10. BLM also claims that “the actual effects of [GHG] emissions [from implementing the 2016 final rule] on global climate change cannot be reliably assessed and thus are sufficiently uncertain as to be not reasonably foreseeable.” EA at 18. BLM is wrong. In fact, there are several tools available to assess how reducing emissions impacts the climate, including the social cost of carbon (and methane), the global warming potential of methane, and carbon budgeting. In the

context of its regulatory impact analysis, BLM even uses one of these tools—SCM—but fails, beyond referencing SCM for purposes of assessing socioeconomic impacts, to use that very same tool to take a hard look at climate impacts or, on that basis, to compare alternatives.

BLM marginalizes the rulemaking’s effect on climate change by measuring the foregone methane reductions against a baseline of national GHG emissions. EA at 18 (concluding that the Rescission Proposal’s foregone methane emissions reductions for Year 1 represent about 0.61% of the total U.S. methane emissions in 2015). As previously explained by CEQ, such a comparison does not reveal anything beyond “the nature of the climate change challenge itself”—the fact that many individual sources together make a big impact on the climate.¹⁸⁴ Instead, NEPA requires BLM to candidly acknowledge the contribution of each of its actions on climate change. *See CBD v. NHTSA*, 538 F.3d at 1217 (although individual rule promulgated by the agency would have minor impact on climate, NEPA required analysis of cumulative impact of all agency rulemakings); *see also Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 810 (9th Cir. 1999) (EIS informs determination as to “whether, or how, to alter” action “to lessen cumulative impacts.”)

The social cost of carbon, global warming potential of methane, and carbon budgeting provide useful yardsticks that BLM should consider. While there may be alternative tools that BLM could permissibly use, BLM cannot, fundamentally, dispense with its duty to take a hard look at climate impacts on the basis of the excuses noted above.

a. Social Cost of Carbon/Methane

The federal government’s estimate of the social cost of carbon, developed by the IWG and its subsequent estimate of SCM are peer-reviewed, science-based methodologies developed through multi-year inter-agency efforts appropriate for use in NEPA analyses. The social cost of carbon protocol was expressly developed to assist agencies in predicting the impact of agency rulemaking. *Mont. Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1095 (D. Mont. 2017). Moreover, as federal courts have recognized, regardless of any disagreement about the exact value to use for the social cost of carbon, it is undisputed that it is not zero. *High Country Conservation Advocates*, 52 F. Supp. 3d at 1192 (“[B]y deciding not to quantify the costs at all, the agencies effectively zeroed out the cost in its quantitative analysis”); *CBD v. NHTSA*, 538 F.3d at 1200 (citing a range of values for the value of carbon emissions reductions, and noting that it “is certainly not zero”). Courts have upheld the use of the global social cost of carbon, developed by the federal government’s IWG based on the consensus science and economics, as a valid exercise of agencies’ regulatory authority. *See Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 677 (7th Cir. 2016).

¹⁸⁴ CEQ, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* 9 (Aug. 1, 2016), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf, withdrawn by 82 Fed. Reg. 16,576 (Apr. 5, 2017).

The IWG¹⁸⁵ on the Social Cost of Carbon most recently estimated that each ton of carbon dioxide costs society up to \$123, with a central value of \$42.¹⁸⁶ Notably, these values likely *underestimate* actual costs because the methodology does not yet include all important climate damages.¹⁸⁷ Nevertheless, the protocol captures many of the climate effects that decisionmakers and the public care about, such as agricultural and forestry impacts, coastal impacts due to sea level rise, impacts to the energy and water sectors, impacts from extreme weather events, vulnerable market sectors impacted by changes in energy use, human health impacts including malaria and pollution, outdoor recreation impacts and other non-market amenities, impacts to human settlements and ecosystems, and some catastrophic impacts.¹⁸⁸

Notably, it is not enough that BLM include an SCM calculation in its RIA. In the EA, the agency must also use the SCM to fulfill NEPA's mandate to take a "hard look" at the Rescission Proposal's beneficial and adverse effects. The U.S. Supreme Court has called the disclosure of impacts the "key requirement of NEPA," and held that agencies must "consider and disclose the actual environmental effects" of a proposed project in a way that "brings those effects to bear on [the agency's] decisions." *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 96 (1983). As discussed above, courts have repeatedly determined that NEPA analyses must disclose and analyze relevant climate effects. Here, the global SCM provides a tool that helps BLM satisfy its duty to take a hard look at global climate impacts—certainly a tool that is far more useful than simplistic calculations of total methane emissions or

¹⁸⁵ For political reasons, President Trump disbanded the IWG. Exec. Order. No. 13,783 § 5(b). But the IWG's estimates still reflect the consensus science and economics. In fact, some agencies under the current administration have continued to use the IWG's estimates in both NEPA and regulatory analyses. *E.g.*, U.S. Dep't of Interior, Bureau of Ocean Energy Mgmt., *Draft Environmental Impact Statement: Liberty Development Project* at 3-129, 4-246 (Aug. 2017) ("BOEM, Liberty Development Project") (calling the social cost of carbon "a useful measure" and applying it to analyze the consequences of offshore oil and gas drilling); 82 Fed. Reg. 31,808, 31,811, 31,857 (July 10, 2017) (Department of Energy using the IWG's estimates for carbon and methane emissions to analyze energy efficiency regulation, and describing the SCM as having "undergone multiple stages of peer review").

¹⁸⁶ IWG, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866*, at 4 (August 2016).

¹⁸⁷ See EPA, *Fact Sheet: Social Cost of Carbon 1* (2016), https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf ("The models used to develop [social cost of carbon] estimates do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research."); Peter Howard, *Omitted Damages: What's Missing from the Social Cost of Carbon* (2014) (some important damage categories are currently omitted due to insufficient data and modeling); Frances C. Moore, & Delavane B. Diaz, *Temperature impacts on economic growth warrant stringent mitigation policy*, 5 *Nature Climate Change* at 2 (Jan. 12, 2015) (current estimates for the social cost of carbon should be increased six times for a mid-range value of \$220 per ton).

¹⁸⁸ IWG on the Social Cost of Carbon, *Technical Support Document* 6-8 (2010).

comparisons of those total emissions to total global or national emissions. Importantly, disclosure of a range of values and discount rates is consistent with NEPA’s alternatives requirements. *See* 42 U.S.C. § 4332(2)(C)(iii), (2)(E).

In the Waste Prevention Rule, BLM utilized a global SCM to assess costs and benefits. 2016 RIA at 33. In determining the value of the SCM, BLM reasonably “defer[red] to and rel[ie]d on the subject matter expertise of EPA” by using the same social cost numbers that EPA had developed. 2016 RIA at 40. EPA, in turn, estimated the SCM based on the rigorous, transparent modeling assumptions developed by the IWG to estimate the social cost of carbon dioxide emissions. *Id.* at 37. The estimates of the social cost of carbon incorporated peer-reviewed analysis and underwent public comment. *See, e.g.*, 78 Fed. Reg. 70,586 (Nov. 26, 2013). Similarly, EPA used peer-reviewed analysis and accepted public comments when estimating the SCM. *See* 80 Fed. Reg. 56,593, 56,656 (Sept. 18, 2015). In 2016, the IWG published an addendum to the social cost of endorsing EPA’s SCM metric (as well as its metric for measuring the social cost of nitrous oxide).¹⁸⁹

To support the Rescission Proposal, BLM uses a new estimate of the SCM that attempts to exclude all harms from climate change that occur outside the United States. *See supra* Section IV(C)(1). However, there is no basis to conclude that NEPA allows BLM to ignore the global SCM. BLM must, therefore, assess both SCM measures through NEPA to properly inform its decision-making and choice of alternatives. Methane, as with other greenhouse gases, is a global, not purely local, climate pollutant. As the National Academies of Science (“NAS”) has explained, an accurate assessment of domestic-only impacts is not possible using the existing integrated assessment model methodologies because they are not designed to produce global estimates and do not model all relevant interactions among regions.¹⁹⁰ The NAS further emphasized that effects that occur internationally may also have significant spill-over effects on the United States, which must be taken into account in any attempt to estimate domestic only impacts.¹⁹¹

Therefore, BLM’s failure to consider the global SCM, despite having considered it in 2016, and ample record evidence demonstrating that it is a valid metric, violates NEPA. A court struck down an agency’s NEPA analysis under similar circumstances in *High Country Conservation Advocates*. There, the agency relied on the social cost of carbon in its draft EIS, but chose not to rely on it in its final EIS. *High Country Conservation Advocates*, 52 F. Supp. 3d at 1193. The court held that the agency choosing not to use the IWG’s social cost of carbon despite initially relying on it, while offering a factually inaccurate justification for why its change of course, violated NEPA. *Id.* (citing *N.M. ex rel. Richardson*, 565 F.3d at 704). Similarly, the District of Montana has held that it is arbitrary and capricious for an agency to quantify the benefits of an action without quantifying the costs, even though such an analysis is

¹⁸⁹ IWG, *Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide* (Aug. 2016).

¹⁹⁰ NAS, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* 54 (2017).

¹⁹¹ *Id.*

possible. *Mont. Env'tl. Info. Ctr.*, 2017 WL 3480262, at *13. BLM has provided a robust explanation of the reduced compliance costs from its proposed action, but it has not explained why it chose not to use an available tool that it had already used in the past—the global SCM—to quantify the costs of its proposed action. BLM’s failure to explain its changed position about the validity of the global SCM violates NEPA.

Indeed, NEPA mandates that BLM consider all the impacts of its actions—regardless of whether those impacts are domestic or global. NEPA sets a national policy that, among other goals, is intended to “promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” 42 U.S.C. § 4321. “[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of the agency’s control does not release the agency from the duty of assessing the effects of its actions on global warming within the context of other actions that also affect global warming.” *CBD v. NHTSA*, 538 F.3d at 1217 (quotations and alterations omitted). “The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” *Id.* Although NEPA does not extend to projects located entirely in another country, NEPA also indicates that “all agencies of the Federal Government shall . . . recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind’s environment.” 42 U.S.C. § 4332(2)(f); *see also Friends of the Earth, Inc. v. Mosbacher*, 488 F. Supp. 2d 889, 908 (N.D. Cal. 2007) (agencies acting domestically must analyze the impacts of their actions that occur outside the United States). The Rescission Proposal the entire planet by increasing methane emissions, which contribute to global climate change. *See EA* at 17–18. If BLM fails to analyze the global SCM, it will therefore violate NEPA.

b. Global Warming Potential

BLM problematically fails to acknowledge methane’s global warming potential (“GWP”). A GWP is used to translate a ton of methane into “carbon dioxide equivalent,” or “CO₂e.” That is, methane’s GWP estimates how many tons of carbon dioxide would be needed to produce the same amount of global warming as a single ton of methane. This provides a helpful metric to assess methane’s climate impacts. Yet BLM does not even acknowledge methane’s GWP in its EA. By contrast, BLM did acknowledge methane’s GWP in the 2016 EA, which notes that values exist to estimate methane’s GWP over both 100-year and 20-year time horizons. *See* 2016 EA at 27. Citizen Group Commenters request that BLM provide two calculations—one using the most up-to-date GWP on a 100-year time scale, and one using the most up-to-date GWP on a 20-year time scale, inclusive of climate-carbon feedbacks.¹⁹² Notably, methane’s 20-year GWP corresponds more closely to the typical lifespan of BLM’s resource management plans (typically 15–20 years) as well as the primary term of an oil & gas lease (10

¹⁹² *See* Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis*, Chapter 8, *Anthropogenic and Natural Radiative Forcing*, at 714 (Table 8.7), https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf (providing 100-year GWP of 86 and 20-year GWP of 34).

years). It is arbitrary and capricious for BLM to use the 100-year time horizon when the 20-year time horizon is also available and more accurately corresponds to the time that an average methane molecule remains in the atmosphere (12 years). *W. Org. of Res. Councils v. BLM*, No. CV 16-21-GF-BMM, 2018 WL 1475470, at *15 (D. Mont. Mar. 26, 2018).

c. Carbon Budgeting

Another measuring standard available to BLM is carbon budgeting. A “carbon budget” offers a cap on the remaining stock of greenhouse gases that can be emitted while still keeping global average temperatures below science-based thresholds—beyond which climate change impacts may result in severe and irreparable harm to the biosphere and humanity. As articulated by a team of international climate scientists in a 2013 report: “The widely accepted target of limiting human-made global warming to 2 degrees Celsius (3.6 degrees Fahrenheit) above preindustrial level is too high and would subject young people, future generations and nature to irreparable harm.... Observational data reveal that some climate extremes are already increasing in response to warming of several tenths of a degree in recent decades; these extremes would likely be much enhanced with warming of 2°C or more.”¹⁹³ “Runaway climate change—in which feedback loops drive ever-worsening climate change, regardless of human activities—are now seen as a risk even at 2°C of warming.”¹⁹⁴ Indeed, the impacts of 2°C temperature rise have been “revised upwards, sufficiently so that 2°C now more appropriately represents the threshold between ‘dangerous’ and ‘extremely dangerous’ climate change.”¹⁹⁵ Notably, a report of thirteen federal agencies, released during the Trump administration in November 2017, also uses the 2°C warming target as a reference point, although cautioning that the threshold may rapidly be exceeded. The report finds that “[s]tabilizing global mean temperature to less than 3.6°F (2°C) above preindustrial levels requires substantial reductions in net global CO₂ emissions . . . and likely requires net emissions to become zero or possibly negative later in the century.”¹⁹⁶

¹⁹³ James Hansen, *et al.*, *Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, 8 PLoS ONE 8 e81648 (2013).

¹⁹⁴ Greg Muttitt, *et al.*, *The Sky’s Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production* 6, Oil Change International (Sept. 2016); *see also* David Spratt, *Climate Reality Check: After Paris, Counting the Cost* 8 (Mar. 2016) (“[T]here is an unacceptable risk that before 2°C of warming, significant “long-term” feedbacks will be triggered, in which warming produces conditions that generate more warming, so that carbon sinks such as the oceans and forests become less efficient in storing carbon, and polar warming triggers the release of significant permafrost and clathrate carbon stores. Such an outcome could render ineffective human efforts to control the level of future warming to manageable proportions.”).

¹⁹⁵ Kevin Anderson & Alice Bows, *Beyond ‘Dangerous’ Climate Change: Emission Scenarios for a New World*, Phil. Trans. R. Soc. (2011).

¹⁹⁶ D.J. Wuebbles, *et al.*, U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment, Volume I* (2017) <https://science2017.globalchange.gov/>.

These same science-based climate guardrails are contained in the Paris Climate Agreement, to which the United States is a signatory. In December 2015, President Obama joined with 194 other nations in recognizing “that climate change represents an urgent and potentially irreversible threat to human societies and the planet” and setting the goal of “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.”¹⁹⁷ The President ratified the Paris Agreement on September 3, 2016.¹⁹⁸ Although President Trump announced on June 1, 2017 that the U.S. would withdraw from the Paris Agreement, the United States remains a signatory to the Paris Agreement. Under Article 28 of the Paris Agreement, the United States may not withdraw until November of 2020 at the earliest.

In order for the world to stay within a carbon budget consistent with Paris Agreement goals—“holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C”¹⁹⁹—significant fossil fuel resources must remain in the ground. More specifically, to meet the target of 2°C, globally “a third of oil reserves, half of gas reserves and over 80 percent of current coal reserves should remain unused from 2010–2050.”²⁰⁰ These fossil fuel reserves represent “unburnable carbon” and as such would be stranded assets in which countries, industries, and companies are heavily invested but on which they would be unable to recoup returns. Citigroup warned investors that “the total value of stranded assets could be over \$100 trillion based on current market prices.”²⁰¹ Studies estimate that global coal, oil and gas resources considered currently economically recoverable contain potential greenhouse gas emissions of 4,196 Gigatons of carbon dioxide (“GtCO₂”),²⁰² with other estimates as high as 7,120 GtCO₂.²⁰³

Critically, the United States carbon quota—equivalent to 11% of the global carbon budget needed for a 50% chance of limiting warming to 2°C—allocates approximately 158 GtCO₂ to the United States as of 2011.²⁰⁴ By way of comparison, federal and non-federal fossil

¹⁹⁷ United Nations Framework Convention on Climate Change, Conference of the Parties, *Adoption of the Paris Agreement*, Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), <http://unfccc.int/resource/docs/2015/cop21/eng/109.pdf> (“Paris Agreement”).

¹⁹⁸ The White House, *President Obama: The United States Formally Enters the Paris Agreement* (Sept. 3, 2016), <https://www.whitehouse.gov/blog/2016/09/03/president-obama-united-states-formally-enters-paris-agreement>.

¹⁹⁹ Paris Agreement at Art. 2

²⁰⁰ Christophe McGlade & Paul Ekins, *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, *Nature* (Jan. 2015)

²⁰¹ Jason Channell, *et al.*, Citi GPS: Global Perspectives & Solutions, *Energy Darwinism II* at 118 (Aug. 2015).

²⁰² Michael Raupach, *et al.*, *Sharing a quota on cumulative carbon emissions*, *Nature Climate Change* (Sept. 2014).

²⁰³ IPCC AR5, *Mitigation of Climate Change*, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2014) at Table 7.2.

²⁰⁴ Raupach at 875.

fuel emissions together would produce between 697 and 1,070 GtCO₂.²⁰⁵ Regarding just federal fossil fuel resources, the United States contains enough recoverable coal, oil and gas that, if extracted and burned, would result in as much as 492 GtCO₂, far surpassing the entire global carbon budget for a 1.5°C target and nearly eclipsing the 2°C target—to say nothing of the United States ‘share’ of global emissions.²⁰⁶ Unleased federal fossil fuels comprise 91% of these potential emissions, with already leased federal fossil fuels accounting for as much as 43 GtCO₂.²⁰⁷

In 2012, “the GHG emissions resulting from the extraction of fossil fuels from federal lands by private leaseholders totaled approximately 1,344 MMTCO₂e.”²⁰⁸ Between 2003 and 2014, approximately 25% of all United States and 3-4% of global fossil fuel greenhouse gas emissions are attributable to federal minerals leased and developed by the Department of the Interior.²⁰⁹ Continued development of federal fossil fuel resources commits the world to ‘extremely dangerous’ warming well beyond the 2°C threshold. As one study put it, “the disparity between what resources and reserves exist and what can be emitted while avoiding a temperature rise greater than the agreed 2°C limit is therefore stark.”²¹⁰ While it may be beyond the scope of BLM’s rulemaking to evaluate opportunities to constrain development, it is surely within BLM’s scope to evaluate the climate impacts of the oil and gas program as a basis for evaluating the strength of competing alternatives intended to reduce methane emissions that contribute to not just the waste of a valuable energy resource, but to climate change. Citizen Group Commenters are unaware of any comprehensive analysis of BLM’s oil and gas program relative to climate change.

BLM should not only identify what portion of our remaining “carbon budget” is represented by Alternative B, the Proposed Action’s, foregone emissions reductions in comparison to the No Action Alternative, but also must also account for the cumulative impacts of climate emissions associated with BLM’s management of oil and gas across our public lands. As the Ninth Circuit has pointed out:

[T]he fact that “climate change is largely a global phenomenon that includes actions that are outside of [the agency’s] control ... does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming.”

CBD v. NHTSA, 538 F.3d at 1217. Thus, BLM’s analysis should include the foregone emissions reductions of this Rule, *added* to other past, present, and reasonably foreseeable BLM-managed

²⁰⁵ Dustin Mulvaney, *et al.*, *The Potential Greenhouse Gas Emissions from U.S. Federal Fossil Fuels*, EcoShift Consulting at 16 (Aug. 2015) at 16.

²⁰⁶ *Id.*

²⁰⁷ *Id.*

²⁰⁸ Stratus Consulting, *Greenhouse Gas Emissions from Fossil Energy Extracted from Federal Lands and Waters: An Update 9* (Dec. 2014).

²⁰⁹ See Energy Info. Admin., *Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2014* (July 2015); see also Stratus Consulting.

²¹⁰ McGlade & Ekins at 188.

fossil fuel extraction emissions on a national scale. 40 C.F.R. § 1508.7. This analysis would provide constructive information helpful to crafting and choosing between different alternatives, including as a counterweight to the BLM's current fixation on administrative and industry costs.

2. BLM Failed to Take a Hard Look at the Rescission Proposal's Impact on Tribal Lands.

BLM's NEPA analysis entirely ignores the unique public health impacts of rescinding the Waste Prevention Rule on tribal lands. Nowhere in the EA does BLM analyze impacts specific to Indian Country. BLM similarly overlooks the environmental and public health impacts on tribal lands in the Rescission Proposal's preamble, which simply notes that BLM estimates economic impacts for Indian leases and royalty implications for tribes in the RIA. 83 Fed. Reg. at 7940; *see also* RIA at 54 (analyzing economic, but not environmental, impacts of the Rescission Proposal on tribal lands). BLM's oversight is significant because rescinding the Waste Prevention Rule *does* have disparate public health and environmental impacts on tribal lands. There are more likely to be residences, schools, and offices on tribal lands than federal lands where oil and gas is developed, elevating public health concerns about exposure to hazardous air pollutants, and exacerbating the negative noise and light pollution impacts of flaring.

Moreover, throughout the preamble, BLM extensively discusses deferring to *state* regulations, but overlooks the fact that many tribes do not have their own regulations. *See, e.g.*, 83 Fed. Reg. at 7937. Although BLM is relying on state regulations as a backstop in lieu of providing uniform nationwide standards to produce waste, such reliance is far less likely to involve any form of waste or pollution prevention on tribal lands.

BLM has also overlooked the Rescission Proposal's environmental justice implications, which disparately impacts Native Americans who live on tribal lands. As BLM acknowledged in the 2016 EA, Executive Order 12,898 requires BLM to address disproportionate adverse human health or environmental effects of its actions on minority and low-income populations. 2016 EA at 36. BLM acknowledges that not rescinding the Waste Prevention Rule "would have a beneficial effect on minority and low-income population segment [sic] due to the reductions in air pollutants." EA at 16. But BLM then reaches the contradictory conclusion that the Rescission Proposal "is not expected to have a significant impact on low-income populations living near oil and gas operations" despite the increase in air pollution, because of the incidental reduction in other forms of air pollution from decreased truck traffic. *Id.* at 21. This is not consistent with BLM's own analysis, just a few pages earlier in the EA, which shows that the decrease in truck traffic-related pollution is *seven orders of magnitude* smaller than the increase in pollution from the Rescission Proposal. *Compare id.* at 19 (Rescission Proposal increases VOC emissions by 267,000 tpy) *with id.* at 20 (reduction in truck traffic-related emissions decreases VOC emissions by 0.8 tpy). Jumping to a conclusion that an impact will be minimal despite contrary evidence about harmful impacts violates NEPA's hard look mandate. *N.M. ex rel Richardson*, 565 F.3d at 714–15.

3. BLM Failed to Take a Hard Look at the Efficacy of State and Tribal Regulations

BLM blindly asserts that state and tribal regulations will alleviate the Rescission Proposal's environmental harms, but never takes a hard look at the efficacy of those regulations. A major premise behind BLM's decision to rescind the Waste Prevention Rule is that "some States with significant Federal oil and gas production have similar regulations addressing the loss of gas from these sources," 83 Fed. Reg. at 7926, and as a result, for most provisions of the Waste Prevention Rule, BLM "inten[ds] . . . to defer to State and tribal statues and regulations," *id.* at 7937; *see also* EA at 4 (purpose and need statement explaining BLM's decision that rescinding the Waste Prevention Rule is necessary to alleviate industry's compliance burden "in light of State and tribal regulations").

In discussing the Proposed Action alternative, BLM explains that "States with the most significant BLM-managed oil and gas production currently have regulations in place that restrict or limit the waste of oil and gas resources and the flaring of natural gas." EA at 6. BLM has not provided sufficient evidence to justify this blanket assertion, especially in terms of whether those regulations restrict or limit waste in a fashion that conforms to BLM's statutory responsibilities under the MLA, FLPMA, and IMLA. *WildEarth Guardians v. BLM*, 870 F.3d 1222, 1235 (10th Cir. 2017) (holding that agencies must justify their choices with evidence "sufficient in volume and quality to sharply define the issues and provide a clear basis for choice among options," rather than mere "blanket assertion[s]"). BLM also never takes the next logical step of analyzing what these state regulations actually are, or how foreseeable actions taken by operators adhering to those state regulations, rather than the Waste Prevention Rule, will impact the environment. The closest BLM's EA comes is noting that "to the extent possible, the BLM has incorporated the other . . . state regulations into its analysis of the baseline and proposed action environments," EA at 13, and to note that where "State regulatory overlap exists, the Proposed Action to revise the 2016 final rule's requirements would not represent a change from the baseline environment," *id.* This conclusory overview falls well short of the hard look necessary to determine where and how state and tribal regulations will actually cover the void left by BLM rescinding the Waste Prevention Rule.²¹¹

4. BLM Failed to Take a Hard Look at the Rescission Proposal's Air Quality Impacts.

Although BLM quantified increased emissions of methane, VOCs, and HAPs caused by the Rescission Proposal, it did not consider what those increased emissions mean for human health and the environment. EA at 17–19. Indeed, despite the significant increase in VOC and HAPs emissions, the EA contains no discussion of ozone pollution, *see Sierra Club v. U.S. Dep't of Transp.*, 962 F. Supp. 1037, 1045 (N.D. Ill. 1997), nor of the impacts of exposure to HAPs, *see S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 588 F.3d 718, 726 (9th Cir. 2009). This failure is particularly troubling because many areas under BLM jurisdiction have been, currently are, or soon will be designated in nonattainment with federal ozone standards. *See supra* Section VII(D)(2)(a). Indeed, as BLM acknowledged in the 2016 EA, "exceedances of the ozone standards under the NAAQS have occurred in Northeastern Utah,

²¹¹ As for "voluntary industry actions," courts have held that agencies fail to take a "hard look" when they "rely on unsupported assumptions that future mitigation technologies will be adopted." *High Country Conservation Advocates*, 52 F. Supp. 3d at 1197.

where the BLM oversees numerous oil and gas operations from Federal and Indian leases.” 2016 EA at 31. The 2016 EA also explained the negative impacts of ozone on public health and on children in particular, as well as on vegetation and ecosystems. *Id.* at 30–31. Absent a similar discussion of health and environmental problems caused by releasing these pollutants, and whether the quantities released are likely to contribute to such impacts, BLM has failed to take a hard look at the impacts of its proposed action.

F. BLM Ignored the Rescission Proposal’s Cumulative Impacts

The half page BLM devotes to analyzing the Rescission Proposal’s cumulative impacts falls well short of NEPA’s requirements. *See* EA at 25. “Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. “NEPA is, in large measure, an attempt by Congress to instill in the environmental decisionmaking process a more comprehensive approach so that long term and cumulative effects of small and unrelated decisions could be recognized, evaluated and either avoided, mitigated, or accepted as the price to be paid for the major federal action under consideration.” *Del. Riverkeeper Network v. Fed. Energy Reg. Comm’n*, 753 F.3d 1304, 1314 (D.C. Cir. 2014) (quotation omitted).

“NEPA always requires that an environmental analysis for a single project consider the cumulative impacts of that project together with ‘past, present and reasonably foreseeable future actions.’” *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 895 (9th Cir. 2002) (quoting 40 C.F.R. § 1508.7). According to BLM’s NEPA Handbook, a cumulative effects analysis should consider scope, timeframe, and past, present, and reasonably foreseeable future actions. BLM NEPA Handbook § 6.8.3.2 to .4. The Handbook provides that “[f]or each cumulative effect issue,” BLM should “analyze the direct and indirect effects of the proposed action and alternatives together with the effects of the other actions that have a cumulative effect.” *Id.* § 6.8.3.5. This analysis should include describing the existing condition, the effects of other present actions, the effects of reasonably foreseeable actions, the effects of the proposed action and each alternative, the interaction of these impacts, and the relationship of these cumulative effects to any thresholds. *Id.*; *see also Grand Canyon Trust v. Fed. Aviation Admin.*, 290 F.3d 339, 345 (D.C. Cir. 2002) (providing a similar list).

1. Scope, Timeframe, and Related Actions

BLM’s analysis falls short of NEPA’s cumulative impact requirements because BLM does not identify a geographic scope, timeframe, or set of past, present, and future actions related to its action for purposes of cumulative impacts. *See* EA at 25. For purposes of direct impacts, BLM has constrained the scope of its analysis to a limited time frame—2018 through 2030. Yet emissions—and consequent impacts—will occur far longer and will certainly have cumulative air, climate, and public health impacts well beyond 2030.

BLM also fails to acknowledge the vast apparatus and existing and reasonably foreseeable decisions relating to its oil and gas program. That program has indisputable cumulative and significant climate, air, and public health impacts closely associated with the very purpose of the Rescission Proposal—i.e., compliance with the agency’s duty to prevent waste, not to mention, as BLM has largely ignored, UUD. Nowhere does BLM acknowledge let alone analyze for purposes of cumulative impacts its own data regarding the scope of the federally-managed oil and gas program. As acknowledged in the Rescission Proposal’s preamble, BLM manages 700 million acres mineral estate that provides 9% of total U.S. natural gas production and 5% of total U.S. oil production. 83 Fed. Reg. at 7925. BLM statistics further show that, as of FY 2016, the agency has issued oil and gas leases for a total of 27.2 million acres and that 12.7 million of these acres are under production.²¹² As noted above, Citizen Group Commenters are unaware of any comprehensive NEPA analysis evaluating the climate, air, and public health impacts of BLM’s oil and gas program.

Nor does BLM describe existing conditions, impacts of other actions, or how the Rescission Proposal will interact with these actions. Instead, BLM states only that it “would anticipate additional GHG emissions which would have climate impacts and air quality impacts.” EA at 25. BLM then lists every potential benefit of rescinding the Waste Prevention Rule. *Id.* This cursory summary, weighted towards extolling the Rescission Proposal’s benefits and ignoring the substantial questions regarding the vast, cumulative impact of the nationwide oil and gas program that the Rescission Proposal affects, is simply not the cumulative impacts analysis demanded by NEPA. *See Lands Council v. Powell*, 395 F.3d 1019, 1028 (9th Cir. 2005).

Citizen Group Commenters recommend that BLM collect and then aggregate existing and reasonably foreseeable oil and gas development data from individual field offices to provide a factual predicate to the agency’s hard look at cumulative climate, air, and public health impacts. That data—typically provided in resource management planning decisions, whether approved or now under consideration—should also prove useful in assessing the Rescission Proposal’s impacts to specific local and regional contexts. It will also aid BLM in assessing how its oil and gas program will play out over the lifetime of agency planning decisions (typically 15–20 years), thus helping BLM establish a yardstick for purposes of temporal context. *See also supra* Section VII(E)(1)(c) (discussing Mulvaney and Stratus Consulting reports, that endeavor to evaluate the aggregate climate emissions and impacts of BLM’s fossil fuels program). These studies would also provide useful data regarding the BLM’s fossil fuels program to inform the agency’s compliance with NEPA’s duty to take a hard look at the cumulative climate, air, and public health impacts of its oil and gas program

2. Other Regulatory Actions

BLM has failed to analyze the cumulative impacts of the Rescission Proposal and EPA’s ongoing reconsideration of its own regulations. When multiple reasonably foreseeable actions

²¹² *See* BLM, Total Number of Acres Under Lease (Fiscal Year 2016), <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics>; BLM, Number of Producing Acres on Federal Lands (Fiscal Year 2016), <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics>.

may impact the same resources within a short timeframe, agencies are required to analyze the cumulative impacts of all the actions. *See Native Ecosystems Council*, 304 F.3d at 897; *Kern v. BLM*, 284 F.3d 1062, 1078–79 (9th Cir. 2009). BLM’s cumulative impact analysis states only that “[s]ince the EPA regulations apply to new, modified, and reconstructed sources, the beneficial impacts to climate and air quality would be expected to grow over time.” EA at 25. But as discussed above, EPA is in the process of reconsidering its regulations. *Supra* Section VII(D)(1). BLM therefore must analyze not the cumulative impacts of both BLM *and* EPA revising or rescinding their regulations, rather than blindly assuming that EPA regulations will remain in place indefinitely.

3. Climate

Finally, BLM has failed to consider the Rescission Proposal’s cumulative climate impacts. BLM’s terse acknowledgement that it “would anticipate additional GHG emissions” and reference back to its direct and indirect impacts analysis falls well short of the requisite cumulative impacts analysis. As discussed above, the Rescission Proposal has significant climate impacts. *See supra*. BLM must consider the cumulative impacts of Rescission Proposal and the climate impacts from the rest of the federal oil and gas leasing and development program.

CONCLUSION

In conclusion, we urge BLM to withdraw the Rescission Proposal, and retain the Waste Prevention Rule in full.

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APPENDIX 1: INDEX OF EXHIBITS

On April 23, 2018, the following exhibits were submitted to BLM, via hand-delivery to BLM’s Washington Office, 20 M Street SE., Room 2134 LM, Washington, DC 20003, on a USB Drive. Due to their voluminous size, it was not possible to submit the exhibits via Regulations.gov. However, Citizen Group Commenters fully intend for BLM to consider and include all of these documents, which are cited above, in the Administrative Record for this rulemaking.

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APPENDIX 2: Select Issues with the Bureau of Land Management’s Interim Domestic Social Cost of Methane

This Appendix highlights numerous issues with the BLM’s use of an interim domestic social cost of methane to monetize climate impacts when analyzing its proposal to rescind the *Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements*, 83 Fed. Reg. 7924 (Feb. 22, 2018) (“Rescission Proposal”). This is not an exhaustive list of the issues with BLM’s use of an interim domestic social cost of methane. For a more detailed discussion, see the Comment of Institute for Policy Integrity at New York University School of Law, Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists in this docket, discussing flaws in BLM’s SCM analysis.

I. BLM applies arbitrary and unsupported discount rates to future costs and benefits when calculating its interim domestic social cost of methane.

In its Regulatory Impact Analysis, BLM purports to calculate net benefits of rescinding the Rule using a novel “interim domestic Social Cost of Methane,” applying flat discount rates of 7% and 3% to future costs and benefits of the Rule.²¹³ The use of such high discount rates, normally applied to decisions regarding private capital investments, is wholly inappropriate in the context of costs and benefits to the broader public welfare, particularly in the context of long-term, intergenerational impacts such as climate change mitigation.

BLM justifies use of these discount rates by relying on Office of Management and Budget (“OMB”) Circular A-4.²¹⁴ As an initial matter, federal guidance on Circular A-4 itself is explicit that use of the 7% discount rate is not appropriate in cases – such as climate change harms – involving “intergenerational discounting,” or costs and benefits involuntarily imposed on future generations. A 2015 Interagency Working Group on Social Cost of Carbon document, created with participation by OMB, states: “Circular A-4 is a living document . . . [T]he use of 7 percent is not considered appropriate for intergenerational discounting. There is wide support for this view in the academic literature, and it is recognized in Circular A-4 itself.”²¹⁵ OMB Circular A-4, although contemplating the use of 3% and 7% discount rates in certain contexts, is explicit that agencies must “[u]se sound and defensible values or procedures to monetize benefits and

²¹³ BLM, *Regulatory Impact Analysis for the Proposed Rule to Rescind or Revise Certain Requirements of the 2016 Waste Prevention Rule*, 2 (Feb. 5, 2018) (“2018 RIA”).

²¹⁴ 2018 RIA at 4.

²¹⁵ Interagency Working Group on the Social Cost of Carbon, *Response to Comments: Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12,866* (“IWG RTC 2015”) at 36 (July 2015). This document was not withdrawn by Executive Order 13,783.

costs, and ensure that key analytical assumptions are defensible.”²¹⁶ Circular A-4 further requires that agencies must “state in your report what assumptions were used, such as... the discount rates applied to future benefits and costs,” and to explain the basis for those assumptions.²¹⁷ BLM has not provided any such explanation here. Given the inappropriateness of applying a high discount rate, particularly a capital investment discount rate of 7%, to public intergenerational harms, reliance on Circular A-4’s general reference to rates of 3% and 7% fails entirely to satisfy the requirement to explain the basis for BLM’s discount rate assumptions.

Given OMB’s clear 2015 guidance, it is arbitrary and flatly inconsistent with the 2015 OMB Response to Comments to even consider the use of a 7% discount rate, generally applied in the context of capital investments, to analyses of effects to the public welfare. Circular A-4 explicitly states that “[w]hen regulation primarily and directly affects private consumption... a lower discount rate is appropriate.”²¹⁸ A 7% discount rate is designed to evaluate optimal outcomes solely for the purpose of private capital investment. OMB acknowledges, however, that in the climate change context, analysis should focus on effects to future individual consumption rather than capital investment:

The consumption rate of interest is the correct concept to use . . . as the impacts of climate change are measured in consumption-equivalent units in the three IAMs used to estimate the SCC. This is consistent with OMB guidance in Circular A-4, which states that when a regulation is expected to primarily impact private consumption—for example, via higher prices for goods and services—it is appropriate to use the consumption rate of interest to reflect how private individuals trade-off current future consumption.²¹⁹

Not only should the discount rate applied to long-term intergenerational analyses be wholly distinct from the rate for capital investment, it should be well below 2%. The Council on Economic Advisers has stated that, given interest rate changes since the original Circular A-4, a discount rate based on consumption rather than capital “should be at most 2 percent.”²²⁰ However, given several significant distinguishing characteristics of the harms from climate change and the benefits of climate change mitigation, even that figure of “at most 2%” is inappropriately high.

²¹⁶ Circular A-4 at 27.

²¹⁷ *Id.* at 3.

²¹⁸ *Id.* at 33.

²¹⁹ IWG RTC 2015 at 22.

²²⁰ Council of Econ. Advisers, *Discounting for Public Policy: Theory and Recent Evidence on the Merits of Updating the Discount Rate* at 3 (“CEA 2017”) (CEA Issue Brief, 2017).

Overall, governmental policy decisions with implications for climate change deserve a very small or even negative discount rate.²²¹ Climate policy justifies a negative discount rate both because the future harms of climate change are deeply uncertain, stretch far into the future, affect future generations involuntarily, and potentially involve extraordinarily large “fat-tail” risks, including the remote but possible risk of human extinction. Two economists explain the case for extreme care in selecting discount rates in the climate change context:

The discount rate is useful to evaluate small transfers of consumptions across individuals living at different times. It is not the all-purpose tool that can serve for all evaluations. It is not adapted to large scale changes, and it is also not adapted to evaluating policies that change the size of the population or the probabilities of different scenarios. For such policies one has to go back to the underlying social welfare criteria. This is an additional reason to pay attention to the selection of such criteria on sound ethical principles.²²²

Because climate mitigation costs imposed today are likely to most benefit our children, grandchildren, and future generations, the choice of a discount rate is fundamentally an ethical one.²²³ Circular A-4 itself acknowledges the special case of intergenerational benefits or costs: “If your rule will have important intergenerational benefits or costs you might consider a further sensitivity analysis using a lower but positive discount rate”²²⁴ In the particular case of climate change, multiple factors make even a “lower but positive” discount rate methodologically and ethically questionable.

Taking into account the intergenerational, long-term, and catastrophic effects of climate change, ethical principles weigh against the use of a high, private discount rates for decisions such as governmental policies affecting future methane emissions. Private discount rates are not sound and defensible in the context of very long time horizons. Circular A-4 expressly states that “[p]rivate market rates provide a reliable reference for determining how society values time within a generation, but for extremely long time periods no comparable private rates exist.”²²⁵ Because no comparable private rates exist for evaluating the effects of massive and uncertain harms, including but not limited to adverse health effects, sea level rise, impaired agriculture, loss of biodiversity, social disruption, and more, there is no defensible basis for using private rates as comparable in evaluating future costs and benefits of climate policies.

²²¹ See Marc Fleurbaey & Stephane Zuber, Climate policies deserve a negative discount rate, 13 Chi. J. Int’l Law 565 (2013), https://www.law.uchicago.edu/files/files/Fleurbaey%20paper_0.pdf.

²²² *Id.* at 22-23.

²²³ See Frank Ackerman & Elizabeth A. Stanton, *The Social Cost of Carbon 2* (Apr. 2010).

²²⁴ Circular A-4 at 36.

²²⁵ *Id.*

Private discount rates are also not sound and defensible in the context of situations catastrophic worst case outcomes. As economists have explained:

Martin Weitzman's important recent work on uncertainty suggests that policy should be directed at reducing the risks of worst-case outcomes, not at balancing the likely values of costs and benefits. This fits well with a large portion of the prevailing discourse on climate change: the expected damages are important and costly; the credible worst-case outcomes are disastrously greater. The urgent priority is to protect ourselves against those worst cases, not to fine-tune expenditures to the most likely level of damages.²²⁶

Weitzman explains, “[t]he basic issue here is that spending money to slow global warming should perhaps not be conceptualized primarily as being about consumption smoothing as being about how much insurance to buy to offset the small chance of a ruinous catastrophe that is difficult to compensate by ordinary savings.”²²⁷ At the very high levels of greenhouse gas concentrations readily foreseeable under current emission trends, “climate change might conceivably cause catastrophic damages with small but nonnegligible probabilities. Other things being equal, this should lower the discount rate used to evaluate mitigation-investment decisions and raise the social cost of carbon.”²²⁸

II. BLM's domestic social cost of methane is inappropriate.

The domestic social cost of methane developed and used by BLM here is inappropriate for multiple reasons. When BLM calculates a domestic social cost of methane, a significant amount of the harm caused by climate change is not reflected in its cost-benefit analysis because much of the damages from each ton pollution will occur outside the country, but, because of the highly integrated nature of the global economy, impacts outside the U.S. will have significant impacts on the U.S. economy that cannot be excluded from the analysis.

Further, if countries then acted based on domestic-only analyses, the result would be far less climate mitigation world-wide than would be economically efficient. This is the familiar economic concept of the tragedy of the commons. And if the United States takes a domestic-

²²⁶ Ackerman & Stanton 2010 at 12 (citing Martin L. Weitzman, “On Modeling and Interpreting the Economics of Catastrophic Climate Change,” *Review of Economics and Statistics* 91:1-19.

²²⁷ Martin L. Weitzman, “A Review of *The Stern Review on the Economics of Climate Change*,” 45 *Journal of Econ. Lit.* 703 (2007).

²²⁸ Martin L. Weitzman, “Fat Tails and the Social Cost of Carbon,” 104 *Amer. Econ. Rev.* 544 (2014).

only approach, it will be difficult to convince other countries to do otherwise, which ultimately harms the United States.

In addition, the BLM's calculation of the domestic-only social cost of methane itself is significantly under-inclusive because many of the effects of climate change that occur in other countries will result in spillover effects on the United States. We highlight impacts to U.S. trade and investment below, but there are a wide range of effects—political instability and the resulting security costs, migration and refugees, impacts on U.S. citizens and assets located abroad, impact on willingness of other countries to undertake mitigation policies that have benefits for the US (reciprocity), etc.—that BLM fails to consider here.²²⁹

- a) The interim domestic social cost of methane used by BLM fails to adequately account for the costs associated with trade impacts caused by climate change.

Evidence is overwhelming that the performance of the U.S. economy, including levels of domestic employment and the profitability of U.S. companies, are affected by global trade and investment. This was recognized by the National Academy of Sciences (“NAS”) in a recent report on improving estimates of the social cost of carbon:

Correctly calculating the portion of the SC-CO₂ that directly affects the United States involves more than examining the direct impacts of climate that occur within the country's physical borders, which is what the 7-23 percent range [estimating the share of the global economy accounted for by the U.S.] is intended to capture. Climate damages to the United States cannot be accurately characterized without accounting for consequences outside U.S. borders.

In addition, the United States could be affected by changes in economic conditions of its trading partners: lower economic growth in other regions could reduce demand for U.S. exports, and lower productivity could increase the prices of U.S. imports. The current SC-IAMs do not fully account for these types of interactions among the United States and other nations or world regions in a manner that allows for the estimation of comprehensive impacts for the United States.²³⁰

The NAS concluded that estimating the domestic-only SCC (and presumably the SCM) was feasible but could not be based on the IAMs currently used to develop the SCC.

²²⁹ See Comment of Institute for Policy Integrity at New York University School of Law, Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists to this docket discussing flaws in BLM's SCM analysis.

²³⁰ National Academies of Sciences, Engineering, & Medicine, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, 53 (2017) (“NAS Report”).

Nevertheless, BLM did just that – justifying its actions to present “interim values for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. can be developed.”²³¹ According to the NAS:

Estimation of the net damages per ton of CO₂ emissions to the United States alone, beyond the approximations done by the IWG, is feasible in principle; however, it is limited in practice by the existing SC-IAM methodologies, which focus primarily on global estimates and do not model all relevant interactions among regions. It is important to consider what constitutes a domestic impact in the case of a global pollutant that could have international implications that impact the United States. More thoroughly estimating a domestic SC-CO₂ would therefore need to consider the potential implications of climate impacts on, and actions by, other countries, which also have impacts on the United States.²³²

In its regulatory impact analysis, BLM states that “[s]ome uncertainties are captured within the analysis, as discussed in detail in this appendix, while other areas of uncertainty [which include ‘inter-regional and inter-sectoral linkages’] have not yet been quantified in a way that can be modeled.”²³³ However, according to the NAS:

Most of the structural and empirical studies that can be used to calibrate a damage function focus on a single type of impact or on the direct effect of climate change on regions in isolation. There is an emerging literature that also incorporates interactions among regions and impacts (e.g., Reilly et al., 2007; Warren, 2011; Diffenbaugh et al., 2012; Taheripour et al., 2013; Baldos and Hertel, 2014; Grogan et al., 2015; Harrison et al., 2016; Zaveri et al., 2016). For example, given global markets, migration, and other factors, effects of a crop failure in India will also have impacts in other countries, and reductions in water availability in one region will have impacts across many regions and sectors.

One set of interactions occurs through market mechanisms, such as trade. For example, the economic impacts of climate change on crop yield in one region will depend in part on the changes in crop yields in other regions. These interactions can be captured by multisectoral, multiregional economic computable general equilibrium (CGE) models. Models of global agriculture and forestry impacts have been developed over more than two decades (e.g., Reilly et al., 1994; Sohngen et al., 2001; Reilly et al., 2007; Roson and van der Mensbrughe, 2012; Nelson et al., 2014).²³⁴

²³¹ 2018 RIA at 34.

²³² NAS Report at 53.

²³³ 2018 RIA at 73.

²³⁴ NAS Report.

In developing an interim domestic social cost of methane (“interim SCM”), BLM is obligated to include the potential for disruptions in trade and investment due to climate impacts on our trading and investment partners, and the damages such disruptions would have on the U.S. economy. In analyzing the costs and benefits of the proposed rule, BLM is obligated to conduct a careful and transparent analysis using quantitative methods where existing techniques and modeling tools are available and qualitative analyses where such tools are unavailable. Adopting a faulty, expedient interim SCM by simply carving out a domestic U.S. share of global economic damages from the IWG’s global Social Cost of Methane has been thoroughly discredited in the literature. The 2018 RIA values the costs of an additional year of methane waste due to suspension of the rule with a flawed interim SCM and is unacceptable.

- b) Disruptions to U.S. trade flows and foreign investment due to climate impacts will have a significant impact on the U.S. economy.

In 2016, the U.S. exported \$2.21 trillion worth of goods and services, 12% of U.S. GDP.²³⁵ Imports amounted to \$2.71 trillion, almost 16% of GDP.²³⁶ Exports of goods were \$1.46 trillion, including capital goods such as machinery and equipment, industrial supplies such as chemicals, and consumer goods. Services exports, including banking, insurance, and transportation, were \$750 billion (of which \$208 billion were travel expenditures by foreigners in the U.S.). Exports of agricultural products were \$129.7 billion.²³⁷ Climate damages to our trading partners would disrupt these export flows by reducing their economic activity and limiting their ability to purchase U.S. goods and services.

Millions of U.S. jobs are supported by exports. According to the U.S. International Trade Administration, in 2016 the export of goods supported 6.7 million domestic jobs and the export of services supported 4.8 million jobs.²³⁸ The leading states for export-based jobs included Texas (1,046,549), California (706,969), Washington (375,009), Illinois (333,674), New York (315,221), Michigan (270,240), Ohio (260,436), Florida (243,755), Georgia (198,488), and Indiana (190,511). Regionally, these jobs were based on exports to Asia and the Pacific (3.4 million), Europe (3.1 million), Canada and Mexico (2.8 million), South and Central America (1 million), the Middle East (.5 million), the Caribbean (.5 million), and Africa (.2 million).

²³⁵ U.S. Dep’t of Commerce, Int’l Trade Admin., *U.S. Trade Overview 2016*, 5 (Apr. 2017) https://www.trade.gov/mas/ian/build/groups/public/@tg_ian/documents/webcontent/tg_ian_005537.pdf (last accessed Nov. 6, 2017).

²³⁶ *Id.*

²³⁷ U.S. Dep’t of Agric., Foreign Agric. Serv., *Infographic: U.S. Agricultural Exports, FY 2016*, <https://www.fas.usda.gov/data/infographic-us-agricultural-exports-fy-2016> (last accessed Nov. 6, 2017).

²³⁸ U.S. Trade Overview 2016.

Roughly 300,000 U.S. companies engaged in exporting, and 98% were small- or medium-sized businesses with 500 or fewer employees.²³⁹

Imports represent an even larger share of the U.S. economy. Imports of goods and services totaled \$2.71 trillion in 2016, or almost 16% of GDP.²⁴⁰ Climate damages disrupting countries that are sources for U.S. inputs and consumption goods would harm the U.S. economy. For example, a major supply shock occurred when Thailand, the world's second-largest producer of hard drives, experienced extreme flooding in 2011 which severely damaged manufacturing facilities. As a result U.S. consumers faced higher prices for many electronic goods, from computers to cameras.²⁴¹ Agricultural products, which represent 44% of U.S. imports, are also at risk from climate impacts, including fruits, vegetables, and wine. Sugar and tropical products such as coffee, cocoa, and rubber comprised over 20 percent of U.S. agricultural imports in 2015.²⁴²

In addition to disrupting trade, climate impacts could also disrupt inward and outward foreign direct investment that would negatively affect the U.S. economy. Foreign direct investment is distinguished from financial investment as investment to acquire, establish, or expand businesses conveying management control. U.S. entities own or invest in businesses, infrastructure, factories, office buildings, and hotels in foreign countries, and foreign entities own similar assets in the U.S. According to the Office of the U.S. Trade Representative, "international investment pays large and important dividends for the U.S. economy and American workers by increasing exports, improving productivity, creating jobs, and raising wages."²⁴³ Climate impacts could damage overseas assets owned by U.S. businesses and individuals as well as reduce the flows of capital into the U.S. from foreign entities experiencing climate damages and reduced economic activity in their own countries.

In 2015, U.S. direct investment abroad totaled roughly \$5 trillion. Climate impacts in countries hosting U.S. foreign direct investment could damage the profitability of U.S. companies, which reportedly hold roughly \$2.6 trillion in profits abroad from their operations in

²³⁹ *Id.* at 9-10.

²⁴⁰ *Id.* at 5.

²⁴¹ Charles Arthur, *Thailand's Devastating Floods are Hitting PC Hard Drive Supplies, Warn Analysts*, *The Guardian* (Oct. 25, 2011), <https://www.theguardian.com/technology/2011/oct/25/thailand-floods-hard-drive-shortage>.

²⁴² USDA, Economic Research Service, *Agricultural Trade* (May 5, 2017), <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/agricultural-trade/> (last accessed Nov. 6, 2017).

²⁴³ Exec. Office of the President, Office of the U.S. Trade Rep., *Investment*, <https://ustr.gov/issue-areas/services-investment/investment> (last visited Nov. 6, 2017).

foreign countries.²⁴⁴ According to Forbes, “US companies are now making very large profits outside the US economy ... that accrue to American companies.”²⁴⁵

Foreign direct investment within the United States was roughly \$3 trillion in 2016.²⁴⁶ In the same year, new foreign direct investment flows into the U.S. exceeded \$370 billion.²⁴⁷ Significant levels of foreign investment in the U.S. come from over thirty countries, are widely distributed across sectors of the economy, and are found in virtually every state.²⁴⁸ Nationally, newly acquired, established, or expanded foreign-owned businesses in 2016 employed 480,800 workers.²⁴⁹ In Texas alone, foreign-controlled companies employed 460,100 workers in 2011, 5.2 percent of the state's total private-industry employment.²⁵⁰ Major sources of this foreign investment included the United Kingdom, France, Japan, Switzerland, and the Netherlands.

Domestic economic impacts from climate change abroad could result in damage to U.S. overseas assets, slow inward foreign direct investment, reduce corporate profits, and reduce returns on U.S. financial investments in other countries.

- c) Climate change will have adverse impacts on the domestic and foreign infrastructure on which U.S. trade depends.

The latest U.S. National Climate Assessment (NCA) describes the vulnerability of the U.S. transportation system to climate change that can disrupt U.S. trade flows and negatively impact the economy. It found that:

²⁴⁴ Nick Wells, *Companies are holding a \$2.6 trillion pile of cash overseas that's still growing*, CNBC (Apr. 28, 2017), <https://www.cnbc.com/2017/04/28/companies-are-holding-trillions-in-cash-overseas.html> (last visited Nov. 6, 2017).

²⁴⁵ Tim Worstall, *Why Have Corporate Profits Been Rising As A Percentage Of GDP? Globalisation*, Forbes (May 7, 2013), <https://www.forbes.com/sites/timworstall/2013/05/07/why-have-corporate-profits-been-rising-as-a-percentage-of-gdp-globalisation/#1c976c8e2a6e> (last visited Nov. 6, 2017).

²⁴⁶ Derrick T. Jenniges & James J. Fetzer, Bureau of Econ. Analysis, *Direct Investment Positions for 2015 – Country and Industry Detail*, Bureau of Economic Analysis 1 (2016), https://www.bea.gov/scb/pdf/2016/07%20July/0716_direct_investment_positions.pdf (last visited Nov. 6, 2017).

²⁴⁷ U.S. Dep't of Commerce, Bureau of Econ. Analysis, *Expenditures by Foreign Direct Investors for New Investment in the United States, 2014 - 2016* (2017), <https://www.bea.gov/newsreleases/international/fdi/fdinewsrelease.htm> (last visited Nov. 6, 2017).

²⁴⁸ *Id.*

²⁴⁹ *Id.*

²⁵⁰ Org. for Int'l Investment, *Foreign Direct Investment in Texas*, http://www.ofii.org/sites/default/files/Texas_0.pdf.

The impacts from sea level rise and storm surge, extreme weather events, higher temperatures and heat waves, precipitation changes, and other climatic conditions are affecting the reliability and capacity of the U.S. transportation system in many ways.

Most ocean-going ports are in low-lying coastal areas, including three of the most important for imports and exports: Los Angeles/Long Beach (which handles 31% of the U.S. port container movements), the Port of South Louisiana, and the Port of Galveston/Houston (which combined handle 25% of the tonnage handled by U.S. ports).²⁵¹

The recently-released Climate Science Special Report of the 4th National Climate Assessment continues to find that “it is virtually certain that sea level rise this century and beyond will pose a growing challenge to coastal communities, infrastructure, and ecosystems from increased (permanent) inundation, more frequent and extreme coastal flooding, [and] erosion of coastal landforms.”²⁵²

The 3rd NCA also detailed that numerous studies indicate increasing severity and frequency of flooding throughout much of the Mississippi and Missouri River basins. The report found that, “[d]isruptions to the nation’s inland water system from floods or droughts can, and has, totally disrupted barge traffic.”²⁵³ Further, the nation has seen increasingly severe hurricanes damage to road and rail systems that bring goods to U.S. ports for shipment abroad.

Similar climate impacts to trade infrastructure abroad will also negatively impact the U.S. economy. In a recently-released report, the Organization for Cooperation and Development (OECD) concluded that the adverse impacts of climate change, including higher temperatures, sea level rise, increased storm surges, and extreme weather events, may affect the production of commodities that are heavily traded internationally, that climate change threatens trade infrastructure, and that the economic consequences of climate change damages in one region may affect other regions.²⁵⁴

²⁵¹ U.S. Global Change Research Program, *National Climate Assessment: Chapter 5, Transportation* at 134, 146 (2014), <http://nca2014.globalchange.gov/> (last accessed Nov. 6, 2017) (“2015 NCA Report”).

²⁵² U.S. Global Change Research Program, *National Climate Assessment Climate Science Special Report* 334 (2017), <https://science2017.globalchange.gov/> (last accessed Nov. 6, 2017).

²⁵³ 2015 NCA Report at 138.

²⁵⁴ R. Dellink, R. *et al.*, *International Trade Consequences of Climate Change*, OECD Trade & Environment Working Papers 19 (2017), http://www.oecd-ilibrary.org/trade/international-trade-consequences-of-climate-change_9f446180-en?crawler=true (last visited Nov. 6, 2017).

The OECD found that climate-related disruption and damage to seaports will increase trade costs:

Maritime shipping, which accounts for around 80% of global trade by volume and more than 70% of global trade by value, could experience some negative consequences from climate change. Increased storms, increased precipitation, and sea level rise may cause more frequent port closure, affect speed of passage, necessitate the use of alternative shipping routes or additional safety measures, and increase the maintenance costs for ships and ports.²⁵⁵

The Port of South Louisiana and the Port of Galveston/Houston are the second and third most important U.S. ports. Both have been and will increasingly be in the cross-hairs of increasingly frequent and severe hurricanes. In August 2017, Hurricane Harvey closed the Port of Galveston/Houston to truck traffic distributing imported goods for seven days, from Friday August 25 to September 1.

On Friday, its main container terminals -- the Barbours Cut Terminal, Bayport Container Terminal and the Turning Basin Terminal -- resumed operations at 7 a.m., receiving trucks ready to haul cargo from containers being unloaded. The Houston port ... handles about 13 million tons of cargo a year and 8,300 vessel stops. It handles more than two-thirds of containers moving through the Gulf Coast. But the upper part of the Houston Ship Channel, the port's waterways that connect the port to the Gulf of Mexico, is still closed to ship and tow traffic as inspection continues, the Coast Guard said Friday. And that cuts off petrochemical tanker ships' routes to reach the refineries and the chemical docks that are located in the upper part of the channel.²⁵⁶ These impacts may also require changes in ship design and reconfiguration of port operational areas.

The study also found that airports are exposed to the same climate impacts. "Research suggests that sea level rise, increased storminess, and extreme precipitation induced by climate change can affect the operations of airports, lead to more frequent disturbances, and affect infrastructures in weather-exposed or low-lying areas."²⁵⁷ Increased temperatures could also reduce airlift capacities and require longer runways to compensate for reduced airlift. Table 1, below, presents a detailed summary of the direct impacts and consequences of climate change on trade infrastructure from the OECD report.

²⁵⁵ *Id.* at 19.

²⁵⁶ USA Today, Houston port reopens cargo terminals while waterways access remains limited, September 1, 2017.

²⁵⁷ *Id.*

Table 1

Table 2. Potential direct impacts and consequences on trade infrastructures

Climate change effect	Mode	Direct impact	Consequences on trade infrastructure
Increased temperature and solar radiation	Land-based	Road pavement cracking; Asphalt rattling; Rail buckling; Loss of water seal causing potholing	Require more frequent maintenance (-) Require track and road repairs or speed restrictions to avoid derailments (-) Higher maintenance and insurance costs (-)
	Aviation	Reduced life of asphalt on airport tarmacs; Reduced airlift capacity	Need to construct longer runways to compensate for reduced airlift (-); Need for ground-cooling mechanisms (-) Higher maintenance and insurance costs (-)
	Sea-based	Reduced refrigeration storage period	Increase refrigeration costs (-)
Increased precipitation and river floods	Land-based	Flooding of land infrastructures; River bridge scour; Wet pavements and safety risks	Need to re-route to avoid climate change-affected roads (-); Higher maintenance and insurance costs (-)
	Aviation	Flooding of runways and access roads; Reduced visibility; Damage facilities including airstrips;	Higher maintenance costs and insurance costs (-)
	Sea-based	Reduced capabilities in loading/uploading of cargo at ports; Increased rates of corrosion / oxidation equipment	Risk of delays (-); Increased construction and maintenance costs (-)
Sea level rise and sea storm surges	Land-based	Permanent or temporary inundation; Submerge of bridges	Risk of delays (-); Higher maintenance and insurance costs (-)
	Aviation	Submerge of terminals and villages	Relocation and migration of people and business (-)
	Sea-based	Lower clearance under waterway bridges; Damage to port infrastructure; Increased rates of corrosion and oxidation equipment	Need for new ship design (-); Need for reconfiguration of operational areas (-); Higher maintenance costs and repair of port facilities (-)
Extreme weather conditions	Land-based	Disturbance to transport electronic infrastructures, signalling, etc.	Disruption to operations (-); Higher maintenance and insurance costs (-)
	Aviation	Disturbance to transport electronic infrastructures, signalling, etc.	Risk of delays (-); Higher maintenance and insurance costs (-)
	Sea-based	Temporary shutdown of ports; Deterioration of sailing conditions; Disturbance to transport electronic infrastructures, signalling, etc.	Risk of delays (-); Higher maintenance and insurance costs (-)
Reduced Arctic sea ice cover	Sea-based	Opening of Arctic shipping routes	Reduced distances and time (+); Need for additional navigation aids such as ice-breakers for ships using the Arctic route (-); Higher insurance costs for ships using the Arctic route (-)

Source: OECD based on Race (2015), UNCTAD (2014), Maddocks et al. (2010).

OECD concluded that:

One key direct effect of climate change is that supply, transport and distribution chains might become more vulnerable to disruptions due to climate change, thereby affecting future international trade patterns. Extreme weather events, for instance, may lead to the temporary shutdown of ports and transport routes; they might also damage

infrastructure critical to trade and thus have longer-lasting effects. These and other interruptions can lead to delays, increase the costs of international trade and could lead to a shift in trade patterns as companies involved in trade seek alternatives to increase reliability of shipping.²⁵⁸

The threats to international trade from climate change are recognized by other international institutions. The World Trade Organization (WTO), has found that “[c]limate change may increase the vulnerability of the supply, transport and distribution chains upon which international trade depends” and that “[i]mpacts on infrastructure will include damage to buildings, roads, railways, airports, bridges, and to port facilities due to storm surges, flooding and landslides.”²⁵⁹ The WTO also warns that “[m]any tourist destinations rely on natural assets – beaches, clear seas, tropical climate, or abundant snowfall, for example – to attract holiday-makers. A rise in sea levels or changes in weather patterns might deprive countries of these natural assets.”²⁶⁰ The World Economic Forum has concluded that “climate change is also affecting the world’s capacity to trade,” that “many ports, especially in developing countries, are not ready to withstand stronger and more frequent storms or rising sea levels,” and that “[t]ransport systems – the arteries of trade – are not prepared to cope with climate change.”²⁶¹

Higher trade costs due to climate impacts are also recognized by the U.S. Census Bureau, which compiles U.S. trade statistics. It found that “during port closures, export and import shipments may be diverted, amended, or canceled.”²⁶² The Commerce Department’s Bureau of Economic Analysis reports that “there are several possible impacts of the hurricanes on U.S. trade in services. For example, transport services may be affected by port closures and by diverted shipments. Travel expenditures and other services trade may be affected to the extent that service activities are interrupted.”²⁶³

Given the facts about the global integration of the U.S. economy and the impacts of climate change on the global economy and the infrastructure on which it depends, it is impermissible for the BLM to use a domestic SCM that excludes these realities.

²⁵⁸ *Id.* at 18.

²⁵⁹ World Trade Org. & United Nations Env’t Prog., *Trade and Climate Change* (2009), https://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf (last visited Nov. 6, 2017).

²⁶⁰ *Id.*

²⁶¹ World Economic Forum, *What Does Climate Change Mean for the Future of World Trade?* (2015), <https://www.weforum.org/agenda/2015/12/what-does-climate-change-mean-for-the-future-of-trade/> (last visited Nov. 6, 2017).

²⁶² U.S. Dep’t of Commerce, U.S. Census Bureau, *Effects of 2017 Atlantic Hurricanes on U.S. International Trade in Goods and Services* (2017) (last visited Nov. 6, 2017).

²⁶³ *Id.*

APPENDIX 3: Comparison of State Regulations with the Waste Prevention Rule

State Definitions of Waste

As discussed in Section III, state statutes vary widely. Statutes in oil- and gas-producing states often incorporate definitions of waste that focus on prevention of avoidable natural gas losses. State statutes prohibit, for example, “unnecessary or excessive” “loss or destruction” of gas or oil, but none incorporate a specific economic definition. Mont. Code Ann. § 82-11-101(16)(a)(iii); *see also* Colo. Rev. Stat. § 34-60-103(11)-(13); N.D. Cent. Code § 38-08-02(19); N.M. Code R. § 19.15.2.7(W)(1); Utah Code Ann. § 40-6-2(27); Wyo. Stat. Ann. § 30-5-101. The Wyoming Supreme Court has found that Wyoming’s waste definition specifically *does not include* economic waste. *Larsen v. Oil & Gas Conservation Comm’n*, 569 P.2d 87, 92–93 & n.4 (Wyo. 1977) (finding Wyoming Oil and Gas Conservation Commission erred in applying a definition of waste that evaluated the “economic position of oil and gas producers and their internal financial ability or inability to drill all of the well locations” when establishing drilling units).

Ban on venting at gas well gas

The Waste Prevention Rule bans venting or flaring of gas from gas wells except when it is unavoidably lost.²⁶⁴ States that also ban the venting of gas well gas include North Dakota;²⁶⁵ California, which prohibits the blowing, release or escape of gas into the air;²⁶⁶ and Montana, where variances to the ban are allowed.²⁶⁷ NM, WY, CO, and UT do not have rules banning venting of gas well gas, though embody some restrictions on this practice.

Requirement to flare vented gas

The Waste Prevention Rule requires flaring of any gas that is not captured, with exceptions.²⁶⁸ States that also require flaring of vented gas are New Mexico²⁶⁹ and Montana.²⁷⁰ States that do not required flaring of vented gas in all cases are WY, CO, ND, and UT.

²⁶⁴ § 3179.6.a.

²⁶⁵ North Dakota Administrative Code (NDAC) 43-02-03-45 Available at: <https://www.dmr.nd.gov/oilgas/rules/rulebook.pdf>.

²⁶⁶ California Public Resources Code, Division 3, Chapter 1, Article 5. Available at: https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=3.&title=&part=&chapter=1.&article=5.

²⁶⁷ Falling Short 2016, RIA 2016, 2017 and 2018.

²⁶⁸ § 3179.6.b.

²⁶⁹ RIA 2018 New Mexico Administrative Code (NMAC) 19.15.18.12.F.

²⁷⁰ Montana Administrative Rules (MAR) 36.22.1221; MAR 36.22.1219; BLM State Memo.

Limits on venting or flaring of associated gas

The Waste Prevention Rule establishes increasing capture percentage requirements on the flaring of oil well associated gas.²⁷¹ The Rule allows BLM to approve lower capture percentages for leases issued prior to the effective date, with justification, but does not allow a full exemption from capture requirements.²⁷² All seven states have some form of flaring restrictions; however, they all also provide for extensions, exemptions, or otherwise effectively allow for unlimited flaring.

- New Mexico – Operators can vent or flare for up to 60 days following well completion. However, they can seek authorization for exceptions.²⁷³
- Wyoming – Operators can flare for up to 60 Mcf/day/well and vent for up to 20 Mcf without authorization. Extensions can be authorized administratively for up to 180 days or 45 MMcf.²⁷⁴
- Colorado – Operators must obtain prior approval to flare, and “unnecessary or excessive venting or flaring of natural gas from a well is prohibited.”²⁷⁵ There are no specific volume or time limits. Venting from new wells must be controlled at a 95% level.²⁷⁶
- North Dakota – Operators may flare for up to one year, and exemptions can be granted.²⁷⁷ However, in some areas such as the Bakken Pool, wells may vent or flare for up to 90 days, after which operators must meet percentage capture goals.²⁷⁸
- Utah – Operators can flare for up to 60 Mcf/day/well (1800 Mcf/month) without authorization. They may also seek approval for venting and flaring associated gas in excess of these limits.²⁷⁹
- California – Operators face no limit on associated gas flaring.

²⁷¹ § 3179.7.

²⁷² § 3179.8.

²⁷³ NMAC 19.15.18.12.A; BLM State Memo, RIA 2018 at 24.

²⁷⁴ Wyoming Oil and Gas Conservation Commission Rules, Chapter 3, Section 39; RIA 2018 at 25.

²⁷⁵ Colorado Oil and Gas Conservation Commission (COGCC) Rule 912.

²⁷⁶ Colorado Air Quality Control Commission (AQCC) Regulation No. 7, XVII.G; BLM State Memo.

²⁷⁷ North Dakota Century Code (NDCC) 38-08-06.4 Available at:

<https://www.dmr.nd.gov/oilgas/rules/rulebook.pdf>.

²⁷⁸ North Dakota Industrial Commission Order 24665 Policy/Guidance Version102215, Available at:

<https://www.dmr.nd.gov/oilgas/GuidancePolicyNorthDakotaIndustrialCommissionorder24665.pdf>; BLM State Memo, RIA 2016 at 22, RIA 2017 at 19, RIA 2018 at 24.

²⁷⁹ Utah Administrative Code (UAC) R649-3-20; BLM State Memo.

- Montana – Operators are allowed to flare associated gas for up to 100 Mcf/day/well following a 60 day test period, and can seek a variance from this limit.²⁸⁰

BLM has not provided any analysis of how these state volume and time limits compare with the capture percentages in the Waste Prevention Rule. Further, while some states have requirements for economic justification for venting and flaring, there are no common standards for exemptions from or extensions of these volume and time limits comparable to the final rule’s requirement for a demonstration that a waste prevention measure “would impose such costs as to cause the operator to cease production and abandon significant recoverable oil reserves under the lease” by providing information on location, production levels and current vented and flared volumes from the operator’s existing wells on the lease or unit, pipeline availability, and the revenues and costs of waste prevention measures.”²⁸¹

Drilling and completions

The Waste Prevention Rule requires that gas from all wells be captured and sold, flared, used on site, or injected.²⁸² These requirements are equivalent to a “reduced emission” or “green completion.” CO is the only state that requires green completions.²⁸³ NM, WY, ND, UT, CA and MT do not have such requirements.

Pneumatic Controllers

The Waste Prevention Rule requires replacement of pneumatic controllers with a continuous bleed rate of greater than 6 scf/hour with one that emits less than this threshold, unless it is routed to processing equipment or a flare, or is functionally required.²⁸⁴ WY, in the Upper Green River Basin (UGRB), requires controllers to be low-bleed, no-bleed, or vented gas must be routed to a closed loop system or flare.²⁸⁵ CO rules require low-bleed devices to be used unless a

²⁸⁰ MAR 36.22.1220; BLM State Memo.

²⁸¹ 81 Fed. Reg. at 83,083.

²⁸² §3179.101 and §3179.102.

²⁸³ Reg. 7 Fact Sheet; COGCC Rule 805.B.3; *See also* COGCC Rule 604.c.C.

²⁸⁴ 43 C.F.R. § 3179.201.

²⁸⁵ Wyoming Department of Environmental Quality Rules, Chapter 8, Section 6.f. The WY Air Quality Division has indicated that “the Division did not intend to spread the Upper Green River Basin regulations statewide.” Casper Star Tribune, “Environmental groups call for regulations from lost gas; natural gas industry says they’re not needed,” March 21, 2018. Available at http://trib.com/business/energy/environmental-groups-call-for-methane-regulations-from-lost-natural-gas/article_86f89241-3e37-5239-86c0-f923c7abba22.html. RIA 2016 at 22-23, RIA 2017 at 20, RIA 2018 at 25. Wyoming also statewide permitting requirements that apply to new or modified facilities. Wyoming Oil and Gas Production Facilities Chapter 6, Section 2 Permitting Guidance.

site has access to electricity, in which case no-bleed controllers must be used.²⁸⁶ This requirement applies to both new and existing facilities. Operators are also required to inspect pneumatic controllers for leaks and make repairs.²⁸⁷ UT requires the use of low-bleed devices for both existing and new facilities unless gas vented from new controllers is routed to a process unit or flare.²⁸⁸ CA prohibits venting from continuous bleed pneumatic devices after 2018 and from intermittent bleed pneumatic devices when idle, with exemptions for low-bleed devices installed before 2016.²⁸⁹ MT has no explicit rule for pneumatic controllers, but VOC vapors (> 500 BTU/scf) from O&G wellhead equipment must be captured and routed to a gas pipeline if within ½ mile, or to emissions minimizing technology or flare.²⁹⁰ NM and ND do not have rules applying to pneumatic controllers.

Pneumatic Diaphragm Pumps

The Waste Prevention Rule requires operators to replace pneumatic diaphragm pumps with pumps that do not vent gas, route vented gas to processing equipment for capture and sale, or, in certain circumstances, route the gas to a flare.²⁹¹ WY requires operators to control venting from new and existing pneumatic pumps in the UGRB.²⁹² CO requires that owners or operators of natural gas-driven diaphragm pneumatic pumps located at a well production facility reduce VOC emissions by 95% and owners or operators conduct annual visual and Method 21 inspections of the closed vent system and repair defects or leaks.²⁹³ ND requires control of venting at pneumatic pumps with emissions greater than 5 TPY per pump.²⁹⁴ Note that this only applies to pneumatic pumps located at Bakken Pool oil and gas production facilities. UT requires the control and combustion of venting from pneumatic pumps.²⁹⁵ CA prohibits venting from pneumatic

²⁸⁶ AQCC Reg. 7.XVIII.

²⁸⁷ AQCC Reg. 7.XVII.F; RIA 2016 at 21.

²⁸⁸ UAC R307-502; See also Utah General Approval Order (GAO) for a Crude Oil and Natural Gas Well Site and/or Tank Battery, Issued June 5, 2014. Available at:

<https://deq.utah.gov/legacy/permits/general-approval-orders/docs/2014/6June/DAQE-AN149250001-14.pdf>; RIA 2016 at 22, RIA 2017 at 19-20, RIA 2018 at 24-25.

²⁸⁹ 17 California Code of Regulations (CCR) § 95668.e.

²⁹⁰ MAR 17.8.1603.

²⁹¹ 43 C.F.R. § 3179.202.

²⁹² Wyoming Department of Environmental Quality Rules, Chapter 8, Section 6.e; RIA 2016 at 22-23, RIA 2017 at 20, RIA 2018 at 25.

²⁹³ AQCC Reg. 7. XII.K.

²⁹⁴ North Dakota Department of Health – Division of Air Quality, “Air Pollution Control Permitting and Compliance Guidance for Bakken Pool Oil and Gas Production Facilities” Section 4.U. Available at:

<http://www.ndhealth.gov/AQ/Policy/20110502Oil%20%20Gas%20Permitting%20Guidance.pdf>

²⁹⁵ Utah General Approval Order (GAO) for a Crude Oil and Natural Gas Well Site and/or Tank Battery, Issued June 5, 2014. Available at: <https://deq.utah.gov/legacy/permits/general-approval->

pumps.²⁹⁶ As with pneumatic controllers, MT has no explicit rule for pumps, but VOC vapors (> 500 BTU/scf) from O&G wellhead equipment must be captured and routed to a gas pipeline if within ½ mile, or to emissions minimizing technology or smokeless combustion device equipped with an electronic ignition device or continuous burning pilot system.²⁹⁷ NM has no requirements to control venting by pneumatic pumps.

Storage Vessels

The Waste Prevention Rule requires that, if a storage vessel has the potential to emit VOCs of greater than 6 tpy, tank vapor gas must be routed to a sales line or flare.²⁹⁸ All seven states considered have requirements of varying stringency for controlling VOC emissions from storage tanks that also provide natural gas waste prevention co-benefits. NM requires operators to equip storage tanks with a method or device to minimize hydrocarbon loss to the atmosphere.²⁹⁹ In the UGRB non-attainment area, WY requires emissions from existing and new sources to be controlled, the latter by 98%.³⁰⁰ CO requires methane emissions for both new and existing sources to be controlled by 98%.³⁰¹ ND requires tank hatches to hold a positive working pressure or be repaired or replaced.³⁰² ND imposes more stringent requirements on storage vessels located at production facilities in the Bakken Pool including routing emissions to a combustion device with a destruction efficiency of between 90% and 98% depending on throughput.³⁰³ UT requires the control or flaring of VOC emissions from storage tanks.³⁰⁴ CA requires gas to be routed to a vapor recovery unit for tanks over 10 mt, and if infeasible, to be flared.³⁰⁵ MT requires storage tanks greater than 65,000 gallons must have control device, and VOC emissions greater than 500BTU/scf from wellhead equipment, condensate tanks and loading equipment must be routed to a pipeline or flare.³⁰⁶

[orders/docs/2014/6June/DAQE-AN149250001-14.pdf](https://www.ria.gov/2014/06/06/DAQE-AN149250001-14.pdf). RIA 2016 at 22, RIA 2017 at 19, RIA 2018 at 24-25.

²⁹⁶ 17 CCR § 95668.e.

²⁹⁷ MAR 17.8.1603.

²⁹⁸ § 3179.203.

²⁹⁹ NMAC 20.2.38.109.

³⁰⁰ Wyoming Department of Environmental Quality Rules, Chapter 8, Section 6.c.

³⁰¹ AQCC Reg. 7, XVII.C; See also Reg. 7, XII.D; RIA 2016 at 21, RIA 2017 at 18-19.

³⁰² NDCC 33-15-20-04.

³⁰³ North Dakota Department of Health – Division of Air Quality, “Air Pollution Control Permitting and Compliance Guidance for Bakken Pool Oil and Gas Production Facilities” Appendix D. Available at:

<http://www.ndhealth.gov/AQ/Policy/20110502Oil%20%20Gas%20Permitting%20Guidance.pdf>

³⁰⁴ UAC 307-501; See also UAC 307-506 for recently finalized requirements; R307-506, RIA 2016 at 22, RIA 2017 at 19, RIA 2018 at 24-25.

³⁰⁵ 17 CCR § 95668.a.

³⁰⁶ MAR 17.8.324 see also MAR 17.8.1603.

Well maintenance and liquids unloading

The Waste Prevention Rule requires operators to use practices that minimizes gas venting and to optimize the operations of automated well control systems. Before manually purging a well, operators must determine that alternative methods are infeasible or unduly costly. When manual purging occurs operators must maintain personnel on-site.³⁰⁷ NM prohibits liquids unloading via gas-lift unless all gas produced is processed or beneficially used.³⁰⁸ CO requires best management practices,³⁰⁹ while WY requires personnel to be on-site during purging but does not considering gas vented or flared during unloading to constitute waste.³¹⁰ UT and MT set time and/or volume limits on venting during liquids unloading.³¹¹ CA requires vapor collection systems, or measurement of vented gas by direct measurement or calculation and reporting of vented volumes.³¹² ND does not have rules applying to liquids unloading.

LDAR

The Waste Prevention Rule requires operators to inspect sites and equipment used to produce, process, compress, treat, store, measure natural gas with very limited exceptions. Leaks must be repaired within 30 days of discovery, with a longer period allowed for good cause. Inspections must be conducted at least semi-annually except for compressor stations which must be inspected quarterly.³¹³ WY requires quarterly inspections at all sites in the UGRB but does not have set requirements for repairs.³¹⁴ CO requires operators to conduct an extensive LDAR program at new and existing wells and storage tanks, with monthly to annual inspections depending on volumes vented. It also requires repairs to be made within 5 days.³¹⁵³¹⁶ UT requires monitoring of equipment, repair of leaks, and inspections from quarterly to annually depending upon production and vented volumes.³¹⁷ CA requires inspections at new and existing production

³⁰⁷ §3179.204.

³⁰⁸ NMAC 19.15.19.10.

³⁰⁹ AQCC Reg. 7, XVII.H.

³¹⁰ Wyoming Oil and Gas Conservation Commission Rules, Chapter 3, Section 39.b.ii see also Wyoming Department of Environmental Quality Rules, Chapter 6, Section 2.

³¹¹ MAR 36.22.1219 and 1221. See also UAC R649-3-20.

³¹² 17 CCR § 95668.f.

³¹³ §3179.301-305.

³¹⁴ Wyoming Department of Environmental Quality Rules, Chapter 8, Section 6.g; RIA 2016 at 22-23, RIA 2017 at 20.

³¹⁵ AQCC Reg. 7, XVII.F.

³¹⁶ RIA 2016 at 21, RIA 2017 at 18-19, RIA 2018 at 23, Reg. 7 Fact Sheet.

³¹⁷ Utah General Approval Order (GAO) for a Crude Oil and Natural Gas Well Site and/or Tank Battery, Issued June 5, 2014. Available at: <https://deq.utah.gov/legacy/permits/general-approval-orders/docs/2014/6June/DAQE-AN149250001-14.pdf>; See also UAC R307-509 for recently finalized requirements. RIA 2016 at 22, RIA 2017 at 19, RIA 2018 at 24-25.

facilities, storage vessels, and compressor. Inspections are required quarterly for facilities with a leak rate in excess of 1,000ppm.³¹⁸ NM, ND and MT have no LDAR requirements.

Production curtailment

The Waste Prevention Rule restates BLM's authority to curtail production when pressures at a newly producing oil well force other wells off a pipeline or when gas capture capacity is not available.³¹⁹ ND Bakken rules provide for production curtailment to prevent flaring,³²⁰ while CO,³²¹ and MT³²² rules provide for restrictions to prevent waste.³²³ NM, WY, and CA rules do not provide for production curtailment.

Waste minimization plans

The Waste Prevention Rule requires operators to submit waste minimization plans with APDs specifying how the operator will comply with the rule. Plans must include information about wells, production, current venting and flaring, pipelines, and processing facilities.³²⁴ NM requires operators to submit gas capture plans with APDs that identify committed gathering and processing facilities for the well.³²⁵ WY requires operators to submit gas capture plans with applications to flare including information on gathering and processing capacity and alternatives to flaring.³²⁶ ND requires gas capture plans providing extensive information about well location and production, and pipeline and processing capacity.³²⁷ CO, UT, CA, and MT do not require waste minimization plans.

Exemptions

Compared to state and tribal rules, the Waste Prevention Rule provides significantly more stringent standards set by the Final Rule regarding a lessee or operator's ability to obtain exemptions from venting and flaring requirements. The Waste Prevention Rule provides that, to obtain an exemption from the gas capture percentage requirements of the Final Rule, operators must make a case to BLM that compliance costs will lead them to cease production and abandon reserves if the exemption is not approved. Furthermore, exemptions to these requirements: (1) are limited to approval of a lower percentage capture rate and not an absolute exemption; and (2)

³¹⁸ 17 CCR § 95669.

³¹⁹ 43 C.F.R. § 3179.10.

³²⁰ See North Dakota Department of Health – Division of Air Quality, “Air Pollution Control Permitting and Compliance Guidance for Bakken Pool Oil and Gas Production Facilities”; see also NDAC 43-02-03-16 for authority to deny a permit based on waste.

³²¹ COGCC Rule 912.

³²² MAR 36.22.1220.

³²³ RIA 2016, RIA 2017, RIA 2018.

³²⁴ §3162.3-1.

³²⁵ NM OCD Notice to Operators April 8, 2016.

³²⁶ Chapter 3, Section 39(c)(ii)(H).

³²⁷ NDIC Oil and Division Letter to Operators May 8, 2014.

is only available to operators planning to comply on a lease-by-lease basis rather by county or statewide. As spelled out in the Final Rule:

BLM may approve a capture percentage lower than the applicable capture percentage specified under § 3179.7, if the operator demonstrates, and the BLM agrees, that the applicable capture percentage under §3179.7 would impose such costs as to cause the operator to cease production and abandon significant recoverable oil reserves under the lease.

81 Fed Reg. at 83008, 83083.

To justify an exemption, the operator must submit a Sundry Notice that includes the following information:

- Identification of all wells on the lease;
- Production levels for each well;
- Volumes vented or flared from each well;
- Maps showing the location of (a) the lease as situated in the entire producing field, (b) gas pipelines within the field, (c) all of the operator's wells within the field, (d) the operator's wells on the lease currently venting and flaring, (e) location and distance of pipelines from venting or flaring wells that could be available for connection and use, and (f) wells on the lease from which gas is currently captured;
- Pipeline capacity; and
- Projected costs of and revenues from gas capture

The broad scope of this information was designed to enable BLM to evaluate the operator's case for an exemption for an individual lease by placing that lease in the context of the operator's overall field operations and the gathering and mid-stream systems in place to service that field. It expands BLM's ability to view the well, and the economics of capture, in a larger context when determining whether or not the operator would cease production and abandon reserves without an alternative capture requirement.

In contrast, state standards for exemption from venting and flaring limits are bare-boned at best. In New Mexico, officials are authorized to grant exceptions "when the flaring or venting casinghead gas appears reasonably necessary to protect correlative rights, prevent waste or prevent undue hardships on the applicant."³²⁸ Regulators in North Dakota may approve an exemption if an operator only upon a showing "that connection of the well to a natural gas gathering line is economically infeasible at the time of the application or in the foreseeable future or that a market for the gas is not available"³²⁹ In Utah, an operator's request for an exemption must be justified by "an economic evaluation supporting the operator's determination that conservation of the gas is not economically viable. The evaluation should utilize any engineering or geologic data available and should consider total well production, not just gas production, in

³²⁸ NMAC 19.15.18.12.B.

³²⁹ North Dakota Century Code (NDCC) 38-08-06.4.6.

presenting the profitability and costs for beneficial use of the gas.”³³⁰ And in Montana, operators must provide information about the “proximity of the well to a market, estimated gas price at the nearest market, estimated cost of marketing the gas, reinjection potential or other conservation-oriented disposition alternatives, amount of gas used in lease operations, and any other information pertinent to a determination of whether marketing or not marketing or otherwise conserving the associated gas is economically feasible.”³³¹

This state-level requirements are, bottom line, far less stringent than state-level requirements, both in terms of information requirements but also in terms of substantive thresholds, where a lessee or operator, to obtain an exemption, must demonstrate that it would cease production and abandon reserves on a lease Waste Prevention Rule. The distinctions between state level exemption requirements also further illuminate problems with relying a patchwork of distinct state-level requirements that will lead to arbitrarily different decisions regarding permissible venting and flaring based purely on state jurisdictional boundaries that do not and should not dictate management of the federal, publicly-owned mineral estate.

³³⁰ Utah Administrative Code (UAC) R649-3-20.5.7.

³³¹ MAR 36.22.1220.