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Western Environmental Law Center

September 22, 2023

U.S. Department of the Interior
Director (630)
Bureau of Land Management
1849 C St. NW, Room 5646
Washington, D.C. 20240
Attention: 1004-AE80

Re: Comments[1] on Proposed Fluid Mineral Leases and Leasing Process Rule – RIN 1004-AE80.

Dear Director Stone Manning and Bureau of Land Management Staff,

The Western Environmental Law Center, with and on behalf of Badlands Conservation Alliance, Center for Biological Diversity, Citizens for a Healthy Community, Friends of the Earth, Montana Environmental Information Center, Prairie Hills Audubon Society, Sierra Club, Waterkeeper Alliance, Western Watersheds Project, and WildEarth Guardians (collectively, "Commenters"), submits the following comments regarding the Bureau of Land Management's (BLM) proposed Fluid Mineral Leases and Leasing Process Rule ("proposed rule").[2] We appreciate the opportunity to weigh in on the proposed rule, and support BLM's long-deferred efforts to modernize the fiscal provisions of the federal onshore oil and gas program. Unfortunately, the proposed rule fails to meet the urgency demanded by interwoven climate, ecological, and biodiversity crises. We therefore call on the BLM, in the final rule, to take action that will align fossil fuel leasing and development within science-based guardrails consistent with the agency's statutory responsibilities, specifically as provided by the Federal Land Policy and Management Act (FLPMA) and National Environmental Policy Act (NEPA).

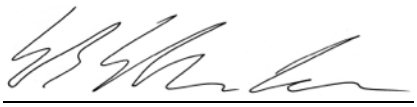
The primary purposes of these comments are to 1) respond to BLM's requests for comment as to specific topics within the proposed rule—notably climate and greenhouse gas (GHG) emissions; 2) provide feedback to help BLM ensure consistency with overlapping rulemaking efforts, meet its nondiscretionary statutory obligations on BLM-managed public lands and address interwoven climate, ecological, and biodiversity crises; and 3) express our support for BLM's proposed fiscal reforms along with recommendations for their improvement.

[1] *Comment submitted via regulations.gov, Exhibits sent via FedEx, Tracking ID: 784066368456*
[2] A list of all exhibits included in this comment is attached as Appendix A. Exhibits referenced herein and itemized in Appendix A were sent under separate cover via FedEx on September 21, 2023.

More broadly, we propose that BLM use the rule's existing framework to leverage its inherent statutory authority and discretion over the public mineral estate to implement what we have termed a "lifecycle approach" to the federal onshore oil and gas program, whereby the agency engages in far more effective planning for and proactive oversight of development at the field office or planning area level to ensure a fair return to the public, statutorily compliant management of public lands, and critically needed reduction of GHG emissions from those lands. Fundamentally, we request that BLM take modest affirmative measures in this rulemaking to meet its legal obligation to prevent unnecessary and undue degradation of public lands and to address the Administration's commitment cut greenhouse gas emissions "to achieve a 50-52 percent reduction from 2005 levels in economy-wide net greenhouse gas pollution in 2030" and, ultimately, "net zero emissions economy-wide by no later than 2050."[3]

We appreciate this opportunity to weigh in on the proposed rule, and hope BLM will find the attached comments helpful.

Sincerely,



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WildEarth Guardians

[3] Executive Order 14008, 86 Fed. Reg. 7619–33, Tackling the climate crisis at home and abroad (January 27, 2021), https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad.

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INTRODUCTION

As BLM is aware, additional future oil and gas development is fundamentally incompatible with a safe climate. Recognizing, however, that BLM operates under varied and conflicting statutory directives and political impediments, these comments propose a holistic or "lifecycle" approach to regulation of the federal fluid mineral program to address interwoven climate, ecological, and biodiversity crises and ensure BLM can fulfill its nondiscretionary statutory obligations to protect public lands and resources for future generations. The approach proposed in this comment fits squarely within the framework of BLM's proposed rule, and requires only that BLM acknowledge these statutory responsibilities, scientific reality, and concurrent rulemaking efforts in the implementation of its final rule.

Just this month, the World Meteorological Organization (WMO) made official what an unprecedented cluster of extreme weather events this summer had already presaged: the Earth just experienced its hottest three months in recorded history.[4] Alarmingly, August 2023 (which is second only to July 2023 in the competition for hottest month ever), averaged 1.5°C warmer than the preindustrial average, bringing the planet a perilous step closer to permanently exceeding the Paris Accord's 1.5°C temperature threshold, years earlier than anticipated.[5]

In Executive Order 14008, President Biden called for an "all-of-government" approach to achieve the Administration's GHG commitments and address the climate crisis:

> It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure.[6]

In the same Order, the President called on the federal government to "drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy,"[7] and explicitly tasked the Interior Department with "the completion of a comprehensive review and reconsideration of federal oil and gas permitting and leasing practices . . . *including potential climate* and other impacts associated with oil and gas activities on public lands or in offshore waters."[8] In response to this directive, Interior released its "Report on the Federal Oil and Gas Leasing Program,"[9] in November of 2021. The Report summarized Interior's "comprehensive review" as follows: "The review found a Federal oil and gas program that fails to provide a fair return to taxpayers, *even before factoring in the resulting*

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[4] **Exhibit 1,** *Earth had hottest three-month period on record, with unprecedented sea surface temperatures and much extreme weather.* World Meteorological Organization News Release September 6, 2023, https://public.wmo.int/en/media/press-release/earth-had-hottest-three-month-period-record-unprecedented-sea-surface.

[5] **Exhibit 2,** *Global temperatures set to reach new records in next five years*, World Meteorological Organization, May 17, 2023, https://public.wmo.int/en/media/press-release/global-temperatures-set-reach-new-records-next-five-years#:~:text=There%20is%20a%2066%25%20likelihood,be%20the%20warmest%20on%20record.

[6] Exec. Order No. 14008, 86 Fed. Reg. 7,619, 7,624–25 (Jan. 27, 2021).

[7] *Id.* at 7,622.

[8] *Id.* at 7,625-26 (emphasis added).

[9] U.S. Department of the Interior, REPORT ON THE FEDERAL OIL AND GAS LEASING PROGRAM: Prepared in Response to Executive Order 14008 (Nov. 2021), ("Report"), https://www.doi.gov/sites/doi.gov/files/report-on-the-federal-oil-and-gas-leasing-program-doi-eo-14008.pdf.

climate-related costs that must be borne by taxpayers."[10] Despite Executive Order 14008's explicit directives to Interior and BLM to analyze the climate impacts of the federal oil and gas program, neither the Report, nor any subsequent analysis by the government ever did factor in "the resulting climate-related costs." Instead, the Report exclusively addressed long-overdue fiscal and management reforms.

Despite repeated urgings[11] by the undersigned and a variety of other organizations, Interior and BLM have thus far not rectified this omission, whether through preparation of a programmatic EIS for the federal public lands oil and gas program, or even a review of public comments on the climate impacts of the program equivalent to what BLM prepared for the federal coal program.[12] Nonetheless, BLM has elected to undertake multiple rulemakings in the resultant informational vacuum. We once again urge BLM, though ancillary to the current rulemaking, to initiate preparation of a programmatic EIS for its entire federal public lands oil and gas program as a mechanism to provide a comprehensive framework for aligning the program within science-based guardrails. We encourage BLM to focus this enquiry not only on the impacts of GHG emissions from the program but also on intensifying stresses on the ecological resilience of the public lands system caused by the combined stressors of climate change and the existing spiderweb of oil and gas infrastructure.

A programmatic review would assist BLM in identifying thresholds for determining the significance of past, present, and foreseeable oil and gas production and whether action is required to constrain production and maximum ultimate recovery of mineral resources within those thresholds. This is a function of BLM's intrinsic responsibility to manage fluid minerals to "safeguard[] … the public welfare" and its related but separate obligations to take a hard look at impacts through NEPA and to consider alternatives and mitigation to protect "air and atmospheric" values and, *inter alia*, to manage public lands "without permanent impairment" and to "prevent unnecessary or undue degradation."[13] Such a programmatic review could then be tiered to field-office level or planning area scales to drive tangible, on-the-ground action. The forthcoming Public Lands Rule presents BLM with a distinctive opportunity to leverage a meaningful programmatic review in service of placing climate and conservation values on a truly "equal footing" with oil and gas by embracing the science to shape and inform action in the public interest.

BLM's own data underscores the need for a programmatic EIS: fossil fuel development on BLM-administered lands accounts for 15.3% of total U.S. GHG emissions, 1.8% of global emissions, and nearly 21% of all emissions in the U.S. from fossil fuel production.[14] With respect to carbon dioxide, emissions from fossil fuels (coal, oil, fossil gas) produced on federal lands represent a quarter of *all* CO_2 emissions in the U.S.[15] Despite EO 14008's bold aspirations, public lands continue to be a significant contributor to the climate crisis, and will be until BLM undertakes a lifecycle-based planning effort for

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[10] *Id.* at 3 (emphasis added).
[11] *See, e.g.* **Exhibit 3,** Letter to Secretary Haaland, "Recommendations for Scope and Criteria for Review of the Federal Fossil Fuel Programs," April 14, 2021. This letter, along with other comments and legal pleadings, recommending preparation of a programmatic environmental impact statement, among other programmatic review measures.
[12] *Federal Coal Program Review Comment Summary Report*, December 2021, https://eplanning.blm.gov/public_projects/2016861/200502862/20051861/250058044/CoalProgramReview_CmtSummaryRpt_Final_508.pdf#page=29&zoom=100,92,510
[13] 30 U.S.C. § 187; 43 U.S.C. §§ 1701(a)(8), 1702(c), 1732(b).
[14] 2021 BLM Specialist Report at Section 9.1 (Representative Concentration Pathways), ("Climate change is fundamentally a cumulative phenomenon, global in scope, and all GHGs contribute incrementally to climate change regardless of scale or origin."); Section 7.1. (BLM Share of 2020 Annual Global and U.S. GHG Emissions), Table 7-1.
[15] **Exhibit 4,** Merrill, M.D., Sleeter, B.M., Freeman, P.A., Liu, J., Warwick, P.D., and Reed, B.C., Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14: U.S. Geological Survey Scientific Investigations Report 2018–5131, 31 (2018).

federal emissions. Oil and gas companies have exploited and continue to exploit BLM's highly permissive approach to oil and gas development of federal public lands and minerals. These companies have acquired oil and gas development rights to 23.7 million acres of federal public lands and operate over 89,000 wells now in production. Oil and gas companies have also stockpiled over 10,000 additional oil and gas drilling permits[16] and thousands of undeveloped leases totaling at least 13.9 million acres.[17] While the proposed rule attempts to address a subset of these issues through fiscal reforms, it can, and should, go further.

Fossil fuel infrastructure is a primary driver of the climate crisis, harms the resilience and intactness of public lands and communities, and saddles state and local governments with an overdependence on a highly volatile source of revenue with soaring and unsecured clean-up costs, along with the political and economic challenges that flow from reliance on fossil-fuel based economies.[18] While BLM has, with the proposed rule, suggested long-overdue fiscal reforms that begin to address some of these problems and offer American taxpayers some assurance that the federal oil and gas program is not being administered solely for the benefit of industry, the proposed rule fails to *mention* climate change, let alone attempt to meaningfully address the significant contribution of fossil fuel production on public lands to the climate crisis or the urgency of winding down fossil fuel production in order to avert its worst impacts. It is a scientifically accepted reality that fossil fuel production must end within the foreseeable future to avert the most catastrophic effects of climate change on ecosystems, and by extension on the resilience and intactness of federal public lands, species, other public lands values, and communities, in particular underserved and overburdened communities already suffering disproportionately from a variety of stressors.

While we are acutely aware of the political cross pressures that BLM is subject to, as well as the Inflation Reduction Act's requirement that renewable energy development on public lands and waters be conditioned on continued federal oil and gas leasing, we nonetheless urge BLM to frankly acknowledge the incompatibility of this continued leasing requirement with GHG reduction goals, and to do what it can within the bounds of its "plenary" and "capacious" authorities and responsibilities, in particular those afforded by FLPMA, to address climate change in this and every regulatory action it takes.[19] BLM must not continue to silo the program from the realities of the climate crisis. This will merely exacerbate confusion regarding the administration's approach to climate action, incite further litigation targeting legally vulnerable fossil fuel decisions, fail to set the stage for future action, and propagate further harm. BLM should instead lean into action that will fulfill the agency's core responsibility to serve as the trustee of the public lands system and its "mandate to manage federal lands for multiple use and to provide for the protection of resources on those lands."[20]

We therefore encourage BLM to amplify its vision and ambition as demanded by FLPMA. Ultimately, we urge BLM to adopt a more holistic "lifecycle" approach to the planning for leasing, development, production, and reclamation of federal mineral resources. Such an approach is true to the law and science, better conforms the proposed rule and its implementation with U.S. and international

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[16] BLM Fiscal Year 2022 Oil and Gas Statistics, https://public.wmo.int/en/media/press-release/earth-had-hottest-three-month-period-record-unprecedented-sea-surface.

[17] Report on the Federal Oil and Gas Leasing Program at 4, noting that of the more than 26 million onshore acres currently under lease, nearly 13.9 million or 53% is non-producing. This number likely does not capture the full extent of industry's stockpiling of federal leases, hence the use of "at least."

[18] *See, e.g.*, **Exhibit 5,** Albuquerque Journal, *New Mexico faces a budget abyss if oil and gas goes bust* (Jan. 30, 2023), https://news.yahoo.com/mexico-faces-budget-abyss-oil-045900527.html?guccounter=1.

[19] Solicitor's Opinion M-37039 at 9, https://www.doi.gov/sites/doi.gov/files/m-37039-the-blms-authority-to-address-impacts-of-its-land-use-authorizations-through-mitigation.pdf.

[20] 88 Fed. Reg. 47,562, 47,574 (July 24, 2023).

climate commitments, and would connect the rule more seamlessly with parallel rulemakings. We ask that BLM be cognizant, in this rulemaking, of contemporaneous rulemaking efforts, including BLM's proposed Public Lands Rule,[21] as well as its Waste Reduction Rule,[22] the Council on Environmental Quality's Phase II draft rules for NEPA implementation, and the Environmental Protection Agency (EPA's) methane reduction rule.[23] All of these rulemakings affect BLM's administration of the oil and gas program; the more the proposed rule can be tailored to complement those rules—particularly the proposed Public Lands Rule and Phase II draft regulations—the better the proposed rule will serve to protect non-mineral resources on land overlying BLM mineral estate, and the more legally defensible it will be.

Our recommendations are a logical outgrowth of the BLM's rulemaking efforts, in particular given the context of the other rulemakings referenced above that are now underway, and BLM is presumably (and should be) interested in aligning and harmonizing these various efforts to optimal effect. We thus specifically incorporate by reference the comments members of this group have made or are currently formulating in the context of these and related regulatory proceedings.[24] If such measures are not adopted here or in concurrent rulemakings, we strongly urge the agency to consider them for future rulemakings.

INTERESTS OF GROUPS

Our organizations and members are impacted by oil and gas development's degradation of habitat, injuries to human health and frontline communities, damage to recreational values, and destruction of a livable climate. We are composed of recreationalists, scientists, educators, farmers, ranchers, and other concerned citizens who live, work, recreate, worship, and otherwise rely on the land, air, and water of public lands for their wellbeing.

Badlands Conservation Alliance is dedicated to the restoration and preservation of the badlands and rolling prairie ecosystem comprising western North Dakota's public lands, both state and federal. They provide an independent voice for conservation-minded North Dakotans and others who are appreciative of this unique Great Plains landscape. It is also their mission to ensure that the public lands management agencies adhere to the principles of the laws that guide them and provide for wise stewardship of the natural landscapes with which the citizens of the United States have entrusted them – for this and future generations.

The **Center for Biological Diversity** is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce GHG emissions to protect biological diversity, our environment, and public health. The Center has over one million members and activists, including those who have visited public

[21] 88 Fed. Reg. 19,583, 19586 (April 3, 2023).
[22] Waste Prevention, Production Subject to Royalties, and Resource Conservation, 87 Fed. Reg. 73,588, November 30, 2022.
[23]Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 87 Fed. Reg. 74,702, December 6, 2022.
[24] *See, e.g.* **Exhibit 6,** Comments of the Western Environmental Law Center submitted on behalf of Amigos Bravos, Center for Biological Diversity, Citizens Caring for the Future, Citizens for a Healthy Community, Conservation Voters New Mexico, Montana Environmental Information Center, Sierra Club, Western Watersheds Project, WildEarth Guardians, and Wilderness Workshop, dated July 5, 2023; *see also* **Exhibit 7,** Comments on the Council on Environmental Quality's National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, dated April 10, 2023; various of commenting groups are also currently engaged in the preparation of comments on the CEQ Phase 2 Nepa Regulations, 88 Fed. Reg. 49,924, July 31, 2023.

lands for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing.

Citizens for a Healthy Community (CHC) is a grass-roots organization with more than 500 members formed in 2010 for the purpose of protecting communities (people and their environment) within the air-, water- and food-sheds of Delta County, Colorado from the impacts of oil and gas development. CHC's members and supporters include organic farmers, ranchers, vineyard and winery owners, sportsmen, realtors, and other concerned citizens impacted by oil and gas development. CHC members have been actively involved in commenting on BLM's oil and gas activities.

Friends of the Earth (FoE) is a 501(c)(3) non-profit, membership-based organization with offices located in Berkeley, California and Washington, DC. FoE currently has over 4.7 million activists and over 290,000 members, located across all 50 states and the District of Columbia. FoE is also a member of Friends of the Earth-International, which is a network of grassroots groups in 74 countries worldwide. FoE's primary mission is to defend the environment and champion a more healthy and just world by collectively ensuring environmental and social justice, human dignity, and respect for human rights and peoples' rights. FoE is dedicated to fighting climate change and advocating for clean energy alternatives. FoE's Climate & Energy program directly engages in administrative and legal advocacy to protect the environment and society from climate change, pollution, and industrialization associated with fossil fuel development on public lands and associated greenhouse gas emissions. Key to this work is fighting to reduce GHG emissions and domestic reliance on fossil fuels, including from federally produced fossil-fuels, and advance justly-sourced, renewable energy.

Montana Environmental Information Center (MEIC) is a nonprofit organization founded in 1973 with approximately 10,000 members and supporters. MEIC is dedicated to the preservation and enhancement of the natural resources and natural environment of Montana, particularly the protection of water quality, air quality, and the climate. MEIC is committed to assuring that state and federal officials comply with and fully uphold the laws of the United States and the State of Montana that are designed to protect the environment from pollution. MEIC and its members have intensive, long-standing recreational, aesthetic, scientific, professional, and spiritual interests in the responsible production and use of energy, and the land, air, and waters across the state. MEIC members live, work, and recreate on public lands that are adversely impacted by oil and gas development.

Prairie Hills Audubon Society (PHAS) is a non-profit South Dakota corporation and a 501c3 with its principal place of business in Black Hawk, South Dakota. Their mission is to protect and educate about the environment and their natural heritage. Their membership is located mostly in western SD. Their members use the BLM lands for recreation and care about preserving the biodiversity on BLM lands and about protecting the earth from global warming. PHAS is a chapter of the National Audubon Society. They first started meeting in 1993 and received their certification as a chapter from the National Audubon Society in 1994.

The **Sierra Club** was founded in 1892 and is the nation's oldest grassroots environmental organization. The Sierra Club is incorporated in California, and has over 700,000 members nationwide and is dedicated to the protection and preservation of the environment. The Sierra Club's mission is to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments. The Sierra Club has members that live in, work and use

the lease sale areas for recreation such as hiking, snowshoeing, cross-country skiing, climbing, backpacking, camping, fishing and wildlife viewing, as well as for business, scientific, spiritual, aesthetic and environmental purposes.

Waterkeeper Alliance is a not-for-profit international environmental organization that unites more than 300 Waterkeeper Member Organizations and Affiliates ("Waterkeeper groups") on the frontlines of the global water crisis, patrolling and protecting more than 2.75 million square miles of rivers, lakes, and coastal waterways on 6 continents. Waterkeeper Alliance and Waterkeeper groups are dedicated to defending our fundamental human right to drinkable, fishable and swimmable waters, combining firsthand knowledge of our waterways with an unwavering commitment to the interests and rights of our communities. Waterkeeper Alliance has increasingly engaged in public advocacy and legal action aimed at reducing the water and climate change impacts of fossil fuel extraction, transport and combustion resulting from BLM's administration of the federal oil and gas leasing program throughout the United States. Waterkeeper Alliance and Waterkeeper groups have members, supporters and staff who have visited, and intend to continue to visit, for recreational, scientific, educational, and other pursuits, public lands that have been and may in the future be affected by BLM's oil and gas leasing program.

The **Western Environmental Law Center (WELC)** uses the power of the law to safeguard the lands, waters, wildlife, and communities of the Western U.S. in the face of a changing climate. To advance this mission, WELC employs a distinctive combination of strategic policy advocacy, litigation, coalition and partner building, and communications. WELC has a long-standing interest in the protection of the federal public lands system and action to align the federal public lands oil and gas program within science-based guardrails.

Western Watersheds Project (WWP) is a non-profit environmental conservation group that works to influence and improve public lands management throughout the western United States to protect native species and conserve and restore the habitats they depend on. WWP's primary focus is on the negative impacts of livestock grazing, including harm to ecological, biological, cultural, historic, archeological, scenic resources, wilderness values, roadless areas, Wilderness Study Areas and designated Wilderness. WWP was founded in 1993 and has 1,500 members. WWP covers 250 million acres of public land spanning all of the western states and has field offices in Idaho, Montana, Wyoming, Arizona, Nevada, and Oregon.

WildEarth Guardians (Guardians) is dedicated to protecting and restoring the wildlife, wild places, wild rivers, the and health of the American West. Guardians is a west-wide environmental advocacy organization with thousands of members. Guardians' members live in and regularly use and enjoy public lands, and are interested in their conservation.

NEED FOR ACTION

The science is clear: there is simply no room for continuation of a "business as usual" approach on the federal mineral estate if humanity is to have a meaningful chance of curtailing truly catastrophic warming. Global fossil fuel production must decrease by approximately 6% per year between 2020 and 2030 if we hope to limit warming to 1.5°C.[25] Even this type of managed decline of fossil fuel production

[25] **Exhibit 8,** SEI, IISD, ODI, E3G, and UNEP, *The Production Gap Report: 2020 Special Report* (2021). *See also* **Exhibit 9**, Stockholm Environment Institute, *The Production Gap: The Discrepancy Between Countries' Planned Fossil Fuel Production and Global Production Levels Consistent with Limiting Warming to 1.5°C or 2.0°C* (2019), https://www.sei.org/publications/the-

may be well be insufficient to achieve this goal. According to a recent study, to maintain a coin-flip chance of holding warming at 1.5°C, approximately 60% of global oil and gas must be left in the ground.[26] Even more recently, researchers at the University of Manchester's Tyndall Centre in 2022 published an analysis of phaseout pathways for coal, oil, and gas production compliant with carbon budgets for avoiding 1.5° C of warming. Their analysis finds that for developed nations, including the U.S., in order to maintain a 50% or better chance of avoiding 1.5° C of warming, "coal production needs to fall by 50% within five years and be effectively eliminated by 2030," while oil and gas production must be cut by 74% by 2030 and end by 2035.[27] To maintain a 67% chance of avoiding 1.5° C of warming, the U.S. must end all oil and gas production by 2031.[28]

Thus, for the United States to align its federal onshore oil and gas program with decline curves necessary to avoid 1.5° C of warming, we urge the U.S. Bureau of Land Management (BLM) to enact regulations for the federal onshore oil and gas program that thoughtfully manage a decline of production to near zero by about 2030. Continuing to commit more federal oil and gas deposits to leasing and development, as the proposed rule contemplates, further jeopardizes the world's ability to meet the 1.5° C target.[29] We emphasize that, while the development of oil and gas remains an element of FLPMA's multiple use mandate, the agency holds competing obligations to, *inter alia*, protect "air and atmospheric" values, and an overarching statutory responsibility to manage public lands without "permanent impairment of the productivity of the land and quality of the environment," and to "take any action necessary, whether by regulation or otherwise, to prevent unnecessary or undue degradation of the lands."[30] These mandates do not lock into place oil and gas leasing and production at the expense of other multiple uses or overshadow the role of public lands as part of a mosaic of ecological and biological systems critical to ecosystem resilience. Instead, FLPMA directs BLM to manage public lands and resources to "meet the present and future needs of the American people" while "conform[ing] to changing needs and conditions … tak[ing] into account the long-term needs of future generations."[31]

NEPA animates BLM's imperative, through this rulemaking, to address interwoven climate, ecological, and biological crises and to better serve otherwise underserved and overburdened people and communities. Section 102 of NEPA directs that, "to the fullest extent possible," BLM's statutory mandates, whether provided by FLPMA or the Mineral Leasing Act (MLA) (amongst other "policies, regulations, and public laws of the United States"), "shall be interpreted and administered in accordance with [section 101 of NEPA]."[32] Section 101(a), in turn, provides that:

> [I]t is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all

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production-gap-report/; **Exhibit 10**, SEI, IISD, ODI, E3G, and UNEP. (2021). *The Production Gap Report 2021*, http://productiongap.org/2021report.

[26] **Exhibit 11,** Welsby, D., Price, J., Pye, S. et al. *Unextractable fossil fuels in a 1.5 °C world*. Nature 597, 230–234 (2021) (if 60% of remaining oil and gas is left in situ, we will retain a 50% chance of limiting warming to 1.5°C).

[27] **Exhibit 12,** Calverley, D. and Anderson, K. (2022), *Phaseout pathways for fossil fuel production within Paris-compliant carbon budgets*. Tyndall Centre, University of Manchester.

[28] *Phaseout Pathways*, Exhibit 12. *See also* **Exhibit 13,** United Nations Environment Programme (2022). Emissions Gap Report 2022: The Closing Window — Climate crisis calls for rapid transformation of societies. Nairobi. https://www.unep.org/emissions-gap-report-2022.

[29] **Exhibit 14,** International Institute for Sustainable Development, *Navigating Energy Transitions: Mapping the Road to 1.5° C* at xi, October 2022. Additional development also risks leaving stranded assets, as fields will need to be decommissioned before the end of their lifespan. *Id.*

[30] 43 U.S.C. §§ 1701(a)(8), 1702(c), 1732(b).

[31] 43 U.S.C. § 1702(c).

[32] 42 U.S.C. § 4332(1).

> practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man [sic] and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.[33]

Section 101(b) further directs BLM to use "all practicable means" to:

> (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
>
> (2) assure for all Americans safe, healthful, productive and aesthetically and culturally pleasing surroundings;
>
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
>
> (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
>
> (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
>
> (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.[34]

In other words, NEPA requires that BLM interpret and administer FLPMA and the MLA consistent with Section 101's directive that the agency, distilled to its essence, serve as a "trustee" of the federal public lands system for the benefit of future generations. This is wholly consistent with the distinctive authority conferred to Congress and, by extension through statute, to the agency, by the U.S. Constitution's Property Clause.[35] The Property Clause confers upon Congress the "[p]ower to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."[36] As the Supreme Court of the United States teaches, "while the furthest reaches of the power granted by the Property Clause have not yet been definitively resolved, we have repeatedly observed that '[t]he power over the public land thus entrusted to Congress is *without limitations*.'"[37]

Similarly, as the Interior Solicitor explained in 2016, "[t]he Supreme Court has long recognized that Congress exercises plenary power over the use of and activities on federal property. The capacious scope of this authority reflects the United States' dual role as both proprietor and regulator of federal

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[33] 42 U.S.C. § 4331(a).
[34] 42 U.S.C. § 4331(b).
[35] For a summary of the expansive legal authorities delegated to Interior under FLPMA, as well as BLM's authority to require mitigation of impacts resulting from its land use authorizations, see recently reinstated Solicitor's Opinion M-37039, The Bureau of Land Management's Authority to Address Impacts of its Land Use Authorizations through Mitigation (Dec. 21, 2016), https://www.doi.gov/sites/doi.gov/files/m-37039-the-blms-authority-to-address-impacts-of-its-land-use-authorizations-through-mitigation.pdf.
[36] U.S. CONSTITUTION, Art. IV., Sec. 3, Cl. 2.
[37] *Kleppe v. New Mexico*, 426 U.S. 529, 539 (1976) (emphasis added).

lands."[38] Such "plenary" and "capacious" constitutional power that is, per *Kleppe*, "without limitations," underscores the immense opportunity to center public lands as a cornerstone of conservation and climate action.[39]

From our perch, it is evident that BLM's proposed rule tinkers around the margins of how federal oil and gas is leased and fails to make use of its "plenary" and "capacious" power to align the federal oil and gas system within science-based climate guardrails and thereby satisfy its conservation-centered FLPMA responsibilities. The proposed rule does not address the fundamental tension BLM's narrow focus creates with the interwoven climate, ecological, and biodiversity crises. We therefore urge BLM to amplify its vision and ambition in this rulemaking—consistent with and demanded by the agency's statutory duties and constitutionally derived authority.

The Intergovernmental Panel on Climate Change's (IPCC) sixth assessment report (AR6), including its synthesis of findings, brings into sharp focus the need for amplified vision and ambition.[40] The IPCC Sixth Assessment provided the remaining carbon budget from the beginning of 2020 as 400 $GtCO_2$ for a 67% probability of meeting the 1.5°C limit and 500 $GtCO_2$ for a 50% probability of 1.5°C.[41] At current emissions levels, the world will exceed the global carbon budget for a 50% chance of limiting warming to 1.5°C in just 10 years. The Sixth Assessment Report found that net anthropogenic greenhouse gas emissions during 2010 to 2019 were higher than any previous time in human history.[42] Nationally determined contributions (NDCs) make it likely that we will exceed 1.5°C this century, and recent data on warming from the World Meteorological Organization suggests this threshold will be crossed within the decade.[43] Policies implemented at the end of 2020 are projected to result in higher global GHG emissions than even those projected by NDCs. Projected CO_2 emissions over the lifetime of existing and planned fossil fuel infrastructure exceed the CO_2 emissions in pathways that limit warming to 1.5°C.[44] In pathways that limit warming to 1.5°C with no or limited overshoot, global GHG emissions peak between 2020 and 2025, and then fall to 48% below 2019 level by 2030, reaching net-

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[38] Solicitor's Opinion M-37039 at 9, https://www.doi.gov/sites/doi.gov/files/m-37039-the-blms-authority-to-address-impacts-of-its-land-use-authorizations-through-mitigation.pdf.

[39] "MLA is compatible with FLPMA's multi-faceted balancing of resources and consideration of long-term protection and preservation of the public's resources. Thus, when the BLM authorizes activities on public lands under a particular statute, such as the MLA, the BLM may also exercise its general authority under FLPMA to apply appropriate mitigation to avoid, minimize, or compensate for impacts." Solicitor's Opinion M-37039 at 27.

[40] **Exhibits 15** and **16**, IPCC, 2021: Summary for Policymakers and Technical Summary. **Exhibit 17,** In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [MassonDelmotte et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3−32, doi:10.1017/9781009157896.001; **Exhibit 18**, IPCC, 2022*: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla et al. (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926; **Exhibit 19**, IPCC, 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner et al. (eds.)]. Cambridge University Press. In Press; **Exhibit 20**, IPCC 2023: *Synthesis Report of the IPCC Sixth Assessment Report* [Paola Arias et al. (eds.)], Cambridge University Press.

[41] Intergovernmental Panel on Climate Change, Summary for Policymakers In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021), https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/ at SPM-38, Exhibit 17.

[42] IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla et al. (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.001, at SPM-4, Exhibit 18.

[43] World Meteorological Organization (October 26, 2022), *Greenhouse Gas Bulletin: The State of Greenhouse Gases in the Atmosphere Based on Global Observations through 2021*. https://library.wmo.int/doc_num.php?explnum_id=11352.

[44] *Id.* at SPM-15, 16.

zero by early 2050s. Without strengthening policies beyond those in place at present, GHG emissions are projected to rise beyond 2025, leading to global warming of 3.2°C by 2100.[45] Reducing GHG emissions across the energy sector requires substantial reduction in overall fossil fuel use and the deployment of zero- or low-emission energy sources. The continued installation of unabated fossil fuel infrastructure will 'lock-in' GHG emissions.[46]

As UN Secretary-General António Guterres stated upon the release of the Intergovernmental Panel on Climate Change's (IPCC) 2022 report:

> Climate scientists warn that we are already perilously close to tipping points that could lead to cascading and irreversible climate impacts. But, high-emitting Governments and corporations are not just turning a blind eye, they are adding fuel to the flames. They are choking our planet, based on their vested interests and historic investments in fossil fuels, when cheaper, renewable solutions provide green jobs, energy security and greater price stability…. Climate activists are sometimes depicted as dangerous radicals. But, the truly dangerous radicals are the countries that are increasing the production of fossil fuels. Investing in new fossil fuels infrastructure is moral and economic madness…[47]

At this moment in time, we have very nearly reached the point of no return, not only with respect to the future fossil fuel production the proposed rule would help perpetuate, but more fundamentally regarding our ability to avert the worst impacts of climate change on human beings and the environments we are part of. BLM has neither considered nor addressed whether the proposed rule is consistent with U.S. climate commitments and national policy. We suspect this is because BLM is aware of the science, which clearly establishes that the federal public lands oil and gas program is inconsistent with these commitments and policies, and by extension safe climate for current and future generations. The United States committed in 2021 to reduce the nation's greenhouse gas emissions 50–52% by 2030.[1] President Biden also has recognized the need for action, stating that the "United States and the world face a profound climate crisis. We have a narrow moment to pursue action . . . in order to avoid the most catastrophic impacts of that crisis."[48]

Complementing FLPMA and NEPA's directives, the MLA also authorizes BLM to reduce the rate of oil and gas production over a defined period of time, limiting the amount of extraction and greenhouse gas pollution that would result. The MLA authorizes the Secretary of the Interior to "alter or modify from time to time the rate of prospecting and development and the quantity and rate of production under such a plan."[49] Likewise, nearly all BLM leases for onshore oil and gas contain a clause which states that "Lessor reserves the right to specify rates of development and production in the public interest."[50] According to these authorizations, the Secretary and BLM could set a declining rate of production over time that provides for an orderly phase-out of onshore fossil fuel production.

In light of recent climate disasters, the overwhelming weight of scientific consensus, and strong climate rhetoric from this administration, we request that BLM adopt rules structured in a way that

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[45] *Id.* at SPM-21.
[46] *Id.* at SPM-36.
[47] United Nations Secretary-General, António Guterres (UN Secretary-General) to the press conference launch of IPCC Report (February 28, 2022) (emphasis added), https://media.un.org/en/asset/k1x/k1xcijxjhp.
[48] Exec. Order No. 14008, *Tackling the Climate Crisis at Home and Abroad*, 86 Fed. Reg. 7,619, 7,619 (Jan. 27, 2021). BLM's proposed rule does not meet this moment.
[49] 30 USCA § 226(m).
[50] *See* U.S. Department of the Interior, Offer to Lease and Lease for Oil and Gas, Form 3100-11 (Oct. 2008).

allows for an organized phase-out of federal oil and gas development consistent with emissions reduction curves necessary to maintain a reasonable chance of averting the worst impacts of climate change, including the permanent exceedance of 1.5°C. We recognize that the regulatory and political landscapes within which BLM must operate are constrained in a way that does not allow for immediate phase out of federal fossil fuels. BLM nonetheless possesses considerable discretion to reduce GHG emissions from the federal mineral estate and set the stage for an ultimate and organized phase-out. We strongly urge BLM to exercise that discretion fully.

We have proposed, in the attached comments, an approach to the proposed rule that will allow BLM, for the first time, to take a "lifecycle" approach to the oil and gas program and to the immediate reduction of emissions from both existing and future leases. An ultimate and rapid phase-out of all federal leasing remains the only scientifically defensible approach, and we urge BLM to frankly acknowledge this reality while it does what it can, within current legal and policy constraints, to bring it about.

COMMENT ON SPECIFIC PROVISIONS AND ISSUES

A. The Leasing Framework: Comments and Recommendations on BLM's Legal Authority, Eligible and Available Lands, Preference Criteria, and Surface Use Rights.

1. BLM should explicitly reference its legal authority and duties under FLPMA and NEPA in all authority citations in the proposed rule.

In all authority citations for each part of the proposed rule, e.g., for 43 C.F.R. Parts 3100, 3101, 3160, etc., BLM should include an explicit reference to FLPMA, 43 U.S.C. 1701 *et seq*. and NEPA, 42 U.S.C. 4321 *et seq*. In fact, we are disconcerted that these authority citations do not presently and comprehensively reference FLPMA and NEPA. FLPMA is, of course, BLM's organic statute, providing an overarching framework governing the management of all multiple uses, including oil and gas, and should be referenced in full. NEPA directs that "to the fullest extent possible," all of BLM's applicable "policies, regulations, and public laws of the United States … *shall be interpreted and administered* in accordance with [section 101 of NEPA]."[51] NEPA thus serves as a tool that BLM *must* use to interpret and administer the MLA and should therefore expressly acknowledge in each part of the agency's rule. Referencing these authorities and responsibilities is necessary to properly articulate the legal basis for BLM's rule and to assure the public and reviewing courts that the agency is in fact attempting to comply with its statutory obligations.

2. BLM should adopt a formal definition for "eligible and available," and should clarify its discretion over the timing, location, and offering of leases.

Proposed amendments to Section 3120.11, "Lands Available for Competitive Bidding" are ostensibly designed to "conform this section with language of 30 U.S.C. 226(a) and (b)" and to "better reflect Interior's statutory discretion to identify lands available for oil and gas leasing." We agree that including a reference to "eligibility" in addition to "availability" more accurately reflects the language used in Section 226 of the MLA. However, it does not do so comprehensively and therefore is inadequate to "reflect Interior's statutory discretion to identify lands available for oil and gas leasing."[52] We therefore urge BLM to adopt definitions for the terms "eligible" and "available" that reflect Interior's

[51] 42 U.S.C. § 4332(1) (emphasis added).
[52] 88 Fed. Reg. 47,562, 47,589 (July 24, 2023).

comprehensive discretion to determine whether, when, where, and how to offer leases for sale. Although BLM has consistently used these terms for decades without defining them in regulation, the definitions we suggest adding to Section 3100.5 are consistent with the agency's past practice, internal guidance, and the MLA's plain language. Adopting a formal definition for these terms, even one that largely codifies past approaches, is a predicate to forward-looking action to ensure a fair return for the government and taxpayers from management of publicly owned oil and gas resources. It also better aligns with the agency's nondiscretionary FLPMA duties, and ultimately will reduce uncertainty and litigation over when, where, and how public minerals are offered for lease.

Defining these terms also serves as a predicate to the adoption of, as we recommend, a holistic "lifecycle" approach to the management of the federal onshore oil and gas program, which we discuss in more depth below. Suffice it to say, for now, that such an approach is warranted to address chronic problems that have plagued the federal onshore oil and gas program for decades and to fulfill FLPMA's mandates that BLM provide for the "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment" and "prevent unnecessary or undue degradation."[53]

Specifically regarding BLM's comprehensive discretion, the legal starting point is the MLA's admonition that public lands "*may* be leased" for oil and gas.[54] Courts have repeatedly acknowledged that this permissive language allows BLM broad discretion as to where, when, and, indeed, *whether* to offer leases.[55] The term "eligible and available" was added to the statute with the passage of the Federal Onshore Oil and Gas Leasing Reform Act of 1987. The addition of this term to the MLA was not accompanied by a definition, leaving that task to BLM.

Nonetheless, legislative history indicates that the amendment was in no way intended to cabin the Secretary's existing discretion over when, where, whether, and how to offer leases for sale.[56] Because BLM has consistently applied these terms in accordance with a 1989 Solicitor's Memo,[57] and because courts have upheld that application,[58] we urge BLM to add a functionally equivalent definition to 43 CFR 3100.0-5. The proposed definitions, consistent with those in the Solicitor's Memo and BLM's past practice, would read as follows:

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[53] 43 U.S.C. §§ 1701(a)(8), 1702(c).

[54] 30 U.S.C. § 226(a) (emphasis added).

[55] *See, e.g. Udall v. Tallman*, 380 U.S. 1, 4 (1965) (Secretary retains "discretion to refuse to issue any lease at all on a given tract"); *Haley v. Seaton*, 281 F.2d 620, 625 (D.C. Cir. 1960) (use of word "may" gives Secretary discretion not to lease).

[56] The Federal Onshore Oil and Gas Leasing Reform Act of 1987, Pub. L. No. 100–203, tit. V, subtitle B, 101 Stat. 1330, 1330–256 (1987) was enacted to address concerns over noncompetitive leasing, thereby shortchanging the public. There is no indication whatsoever that Congress intended to limit the Secretary's existing discretion not to lease. **Exhibit 21,** Thomas Sansonetti & William Murray, A Primer on the Federal Oil and Gas Leasing Reform Act of 1987 and its Regulations, 25 Land & Water L. Rev. 375, 388 n.112 (1990).

[57] Memorandum from Office of the Solicitor to BLM Director re: 'Eligible' and 'Available' Land Under the Federal Onshore Oil and Gas Leasing Reform Act of 1987, at 8 (Dec. 15, 1989). The memo defined "eligible" lands as those that are "not barred from leasing by statute or regulation. Lands precluded from leasing, and thus not "eligible," include national parks and wilderness areas, for example. *See* 43 C.F.R. § 3100.0-3 (1988). The memo defined "available" lands as those that "are both "open to leasing in the applicable resource management plan," and "all statutory requirements and reviews have been met, including compliance with the National Environmental Policy Act (NEPA)."

[58] *See Western Energy All. v. Biden*, No. 21-cv-13, 2022 WL 18587039, *9-10 (D. Wyo. Sept. 2, 2022); slip op. at 36-37; *North Dakota v. U.S. Dep't of Interior*, 21-cv-148 (D. N.D. Mar. 27, 2023).

Lands are "eligible" for leasing when they are not barred from leasing by statute or regulation.[59]

Lands are "available" when they are both (a) open to leasing in the applicable resource management plan, and (b) all statutory requirements and reviews have been met, including but not limited to compliance with the National Environmental Policy Act (NEPA).[60]

These definitions clarify that lands are not eligible and available, and quarterly lease sales are not required, unless: (a) the lands are not precluded by statute or regulation from leasing; (b) they are designated as open for leasing in the RMP; and (c) the agency has determined it *wants* to offer the lands after completing NEPA review and fulfilling other nondiscretionary statutory requirements to support its determination. The definitions also provide an express point of contact with BLM's related authorities and responsibilities, including NEPA, as identified above, but also FLPMA, that shape the agency's discretion and provide sideboards on how that discretion may be exercised.

We also encourage BLM to add language to Section 3120.11 clarifying that BLM's discretion applies also to the *timing* of lease sales, empowering BLM to cancel, delay, or modify sales based on the need for full compliance with NEPA analysis, as well as the implications of such analysis relative to BLM's conservation-centered duties. To this end, we suggest the following addition to the first sentence of Section 3120.11 which is consistent with BLM's discretion and responsibilities:

All lands eligible and available for leasing may be offered for competitive auction under this subpart, on a timeline and in a manner to be established by BLM based on its determination of eligibility and availability as defined in this part, and subject to delay, cancellation, or modification based on considerations informing such determination, including compliance with relevant legal requirements to, inter alia, protect other multiple use resources and values, manage lands without permanent impairment, and prevent both unnecessary and undue degradation. Such lands includ~~ing~~ but are not limited to:

Relatedly, we further ask that BLM identify additional exceptions from leasing, whether for lands already in the public domain (43 C.F.R. § 3100.3(a)) or acquired into the public domain (43 C.F.R. § 3100.3(b)), as follows:

43 C.F.R. § 3100.3(a)(2):

"(xiii) Lands identified in the land use plan as unavailable for oil and gas leasing or otherwise determined by the authorized officer to be inappropriate for leasing to protect other multiple use resources and values."

43 C.F.R. § 3100.3(b)(2):

"(xv) Lands identified in the land use plan as unavailable for oil and gas leasing or otherwise determined by the authorized officer to be inappropriate for leasing to protect other multiple use resources and values by the authorized officer."

[59] *See* Memorandum from Office of the Solicitor to BLM Director re: 'Eligible' and 'Available' Land Under the Federal Onshore Oil and Gas Leasing Reform Act of 1987, at 8 (Dec. 15, 1989).
[60] *See id.*

3. BLM should expressly integrate its FLPMA authorities and responsibilities into the rule, clarify how its proposed Land Management Rule applies to the oil and gas leasing process, and define key terms.

We are pleased that the proposed rule explicitly acknowledges BLM's obligations under FLPMA to manage federal lands and minerals in a manner that will not result in permanent impairment, and to take affirmative steps to prevent unnecessary or undue degradation.[61] To improve the proposed rule, and to further the "lifecycle" approach to oil and gas planning, production, and reclamation we urge BLM to employ, the agency should identify and integrate its conservation-centered authorities and responsibilities into the final rule and explain, in the final rule's preamble, how BLM will comply with those conservation-centered authorities and responsibilities. This would provide substantially improved clarity as to whether and how the leasing and development of federal public lands oil and gas resources align with the agency's multiple use management responsibilities.

Insofar as BLM has rules governing leasing, development, reclamation, and other specific operational elements of oil and gas production, the regulatory framework specific to oil and gas is structured and implemented in a way that functionally abdicates BLM's authority over the timing, pace, and magnitude of leasing and development to lessees and operators. BLM, as the agency responsible for overseeing the federal public lands oil and gas program, has relegated itself to a back seat role, and deprived itself of its full authority to proactively plan for and manage public lands in the public interest. Too often, actions by oil and gas companies effectively dictate what BLM perceives to be possible in a planning process, well before that process even gets underway. This is evident, for example, in BLM's approach to planning in New Mexico's Greater Chaco region, where the Farmington field office has thus far proven unable to resolve resource and community conflicts caused by wildly excessive leasing and development. BLM itself alludes to this dynamic in the proposed rule's preamble relative to speculative leasing, explaining that:

> Historically, the BLM has not employed nationwide criteria to inform its selection of sale parcels. The BLM has invested a considerable amount of time and resources on evaluating parcels that the public does not purchase and that lessees do not develop. Between 2013 and 2022, the BLM offered approximately 40.3 million acres and leased approximately 9.5 million acres from competitive lease sales. Even when parcels sell at or above the minimum bid, they are rarely developed or generate royalties for the Federal Government. The GAO found that only about 7 percent of the leases reviewed produced oil and gas in the primary term of the lease. The BLM believes that by directing Federal oil and gas leasing towards areas that are more likely to produce, it can appropriately utilize the BLM's time and resources.[62]

Given this dynamic, BLM field offices are often in a reactive "catch up" mode in response to lessee and operator actions and, in response, use a default "check the box" approach to oversight. This only contributes to speculative oil and gas leasing, chronic and unresolved resource conflicts, haphazard and disorderly full-field development, and the abandonment of oil and gas wells by lessees and operators that harms people and the environment and places the burden of cleanup on the public. Fundamentally, this approach fails to achieve "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment" and, further, causes "unnecessary or undue degradation."[63] It is for this reason that we have been frustrated

[61] 88 Fed. Reg. at 47,563; 47,564; 47,590; 47,637.
[62] 88 Fed. Reg. at 47,565.
[63] 43 U.S.C. § 1702(c), 1732(b).

with BLM's decision to effectively abandon its comprehensive review of the federal public lands oil and gas program to address interwoven climate, ecological, and biodiversity crises and to instead focus on marginally-effective and ultimately insufficient fiscal reforms. It is also for this reason that we urge BLM to better leverage this rulemaking in conjunction with the parallel rulemaking process for the proposed Public Lands Rule. Opportunity still abounds if BLM would but seize it.

In this context, we urge BLM to conceptualize this rulemaking as an opportunity to craft an integrated "lifecycle" regulatory framework that: (1) links together otherwise segmented BLM's planning, leasing, and development stages pertinent to oil and gas into a cohesive and comprehensive whole; and (2) provides guardrails to ensure that the full "lifecycle" of oil and gas leasing and development—from the acquisition of a lease, to exploratory and full-field production and ultimate recovery, to reclamation and restoration—is carried out in the public interest consonant with the agency's FLPMA, NEPA, and other statutory obligations. This "lifecycle" approach can be woven effectively into BLM's existing multi-phased approach to oil and gas management: planning, leasing, permitting, and reclamation.

It is, however, distinctive from the current approach for the above-mentioned reasons that that, distilled to their essence, BLM now employs the multi-phase process in a largely reactive role: BLM makes vast acreages of lands available for leasing with little understanding of the prospective timing, pace, or magnitude of leasing or its impacts. It then reacts to expressions of interest for leases, delving, for the first time in a meaningful fashion, into typically still-speculative site-specific impacts. Then, after lease rights are conferred, BLM reacts to applications for permit to drill, but with its authority constrained by the lease rights it previously conferred and without having explicitly retained its full sweep of authority to condition development as a mechanism to avoid, minimize, and compensate—in that sequence of priority—adverse impacts. At each of these two latter stages, BLM has consistently deprived itself of a coherent regulatory framework identifying clear thresholds beyond which impacts are unacceptable and unlawful. In so doing, it has failed to provide a comprehensible mechanism by which to adhere to the climate and conservation duties required by FLPMA or to link those duties to the MLA's admonition that BLM, in managing oil and gas, "safeguard[] … the public welfare," including by controlling the rate of production and maximum ultimate recovery.[64] Finally, reclamation, if it happens at all, is carried out in piecemeal fashion, divorced from a front-end, proactive set of guardrails that, had it been employed, would have constrained the total adverse impacts caused by the full lifespan of the oil and gas infrastructure, within science- and value-based protective limits.

To help substantiate our alternative, proactive, and holistic "lifecycle" approach, we incorporate by reference our recommendations provided elsewhere in this comment letter, in particular regarding leasing, as well as the comments some of us provided on the proposed Public Lands Rule and other policy-making processes.[65] As a complement to these recommendations and to underscore the importance of addressing not only leasing, but production, we urge BLM to modernize the objectives of 43 C.F.R. Part 3160 as follows:

§ 3160.0–4 Objectives.

"The objectives of these regulations are ~~is~~ to promote the orderly and efficient exploration, development and production of oil and gas and to conserve ecosystem resilience and intact landscapes, prevent permanent impairment, unnecessary degradation, or undue degradation of the lands, and avoid, minimize, or compensate

[64] 30 U.S.C. § 187; 43 U.S.C. §§ 1701(a)(8), 1702(c), 1732(b).
[65] *See* Exhibit 6.

adverse effects to other resource values, land uses or users, federally recognized Tribes, and underserved communities."

It should be evident that the development of oil and gas must align with and adhere to BLM's responsibilities under FLPMA. This rulemaking presents BLM with the opportunity to clarify and explain how these responsibilities show up in the lifecycle of public lands oil and gas leasing, production, retirement, and reclamation. We therefore recommend, similarly, that BLM contextualize the definition of "maximum ultimate economic recovery" in 43 C.F.R. § 3160.0-5 to account for the agency's multiple use responsibilities as follows:

> *Maximum ultimate economic recovery* means the recovery of oil and gas from leased lands which a prudent operator could be expected to make from that field or reservoir given existing knowledge of reservoir and other pertinent facts and utilizing common industry practices for primary, secondary, and tertiary recovery operations and subject to planning, environmental review, and management actions by BLM to manage public lands for multiple use and sustained yield without permanent impairment and to prevent unnecessary or undue degradation of the lands and their resources, including air and atmospheric resources.

Finally, BLM should incorporate key definitions into the proposed rule at Section 3100.5 to address its nondiscretionary obligations under FLPMA or, assuming these definitions are adopted in the final Public Lands Rule, at a minimum cross-reference them in the proposed rule and clearly explain their relevance and relationship to oil and gas in the final rule's preamble. Adopting—and at least incorporating by reference—these suggestions will help to clearly define expectations and obligations for agency staff and for lessees/permittees. We specifically direct BLM to our recommended modifications to the draft Public Lands Rule, previously referenced, attached, and incorporated by reference as Exhibit 6 to these comments. We also reiterate the specific language and explain these recommended definitions below.

a) Mitigation

BLM has already included reference to the mitigation hierarchy in its definition for the proposed Public Lands Rule. We recommend that BLM strengthen the reference and include in the proposed rule a definition to prioritize action that avoids impacts. If impacts cannot be avoided, BLM should actively consider not moving forward with a proposed action, including by considering and choosing the "no action" alternative assessed through NEPA. If, however, the action is permissible despite unavoidable impacts and BLM chooses to move forward, the agency must *then* take affirmative action to minimize, reduce, or eliminate such impacts. Only if impacts cannot be avoided or minimized but the proposed action remains legal and BLM persists in a decision to move forward with the proposal, should BLM consider compensatory action. To this end, we suggest the following definition of mitigation, as set forth in Exhibit 6:

> Mitigation means, in sequence of priority:
>
> > 1) Avoiding the impacts of a proposed action by not taking a certain action or parts of an action;
> >
> > (2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

(3) Rectifying the impact of the action by repairing, rehabilitating, or restoring the affected environment;

(4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(5) Compensating for the impact of the action by replacing or providing substitute resources or environments.

Mitigation shall be applied hierarchically: BLM must first avoid impacts, then minimize impacts, then rectify impacts, and then compensate for any residual impacts from proposed actions.[66]

BLM should mandate, through the mechanism of the proposed Public Lands Rule and either express adoption or incorporation by reference in the proposed rule, use of the mitigation hierarchy for oil and gas leasing and development. The hierarchy should be informed by NEPA analysis done at the planning, leasing, and drilling stages, and would complement the "lifecycle" approach to planning, leasing, and permitting that Commenters propose. To the extent BLM does not apply the hierarchy to a particular oil and gas planning, leasing, or development stage, perhaps in light of questions regarding the foreseeability, scale, and magnitude of development on a lease or the risk of cumulative effects across a resource management planning area caused by various management actions and other vectors of impact, such as climate change, it should expressly retain the authority (for example, following issuance of a revised resource management plan, or of an oil or gas lease) to deny development or to apply the full sequence of the mitigation hierarchy. Such retained authority would be informed by site-specific NEPA analysis completed at the point when particular issues (such as the timing, pace, and magnitude of development) are ripe for decision such that the agency is able to effectively apply the mitigation hierarchy. This retained discretion is discussed further below, in comments addressing leasing preference and denial criteria and proposed changes to Subsections 3120.41(f)-(h), as well as comments addressing surface use rights and proposed changes to Section 3101.12.

b) Permanent Impairment

FLPMA's directive that BLM manage the public lands "without permanent impairment" is a key statutory guardrail governing multiple use authorizations that Congress left to BLM to define. BLM has yet to do so, rendering the legality of its implementation of FLPMA's multiple use mandate uncertain. This should be remedied. Importantly, we take issue with BLM's characterization of this affirmative duty in the draft rule as to "avoid" permanent impairment. BLM is charged with managing public lands for multiple use "*without* permanent impairment."[67] The fact that it may have failed to do so in the past does not justify BLM, now, in circumventing FLPMA's plain language through rulemaking.

The directive to manage public lands without permanent impairment is central to BLM's multiple use mandate. We therefore urge BLM to adopt the following definition in the proposed rule, which mirrors the definition we provided to BLM in comments on the draft Public Lands Rule:

[66] This definition, and those that follow in this subsection, were proposed by commenters to BLM's draft Public Lands Rule as set forth in Exhibit 6. Those comments contain underlining and strikeouts to illustrate the difference between the proposed language and that put forward by BLM in the draft Public Lands Rule. Here, we have provided the definitions proposed in Exhibit 6, but have omitted the interlineations and presented all language as new text to reflect the fact that these definitions would be entirely new to the proposed rule.

[67] 43 U.S.C. § 1792(c) (emphasis added).

Permanent impairment means the adverse impact of a land use plan, implementation plan, resource management authorization, or management action, that:

(1) Permanently or significantly disrupts, impairs, or degrades ecosystem resilience, intact landscapes, the connectivity of ecological structures, processes, attributes, and functions, or scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values;

(2) Impairs or degrades an ecosystem such that it is no longer able to sustain native biodiversity or environmental justice;

(3) Fails to provide for the sustained yield of renewable multiple use resources;

(4) Precludes periodic landscape-scale adjustments of multiple uses to:

(i) Conserve ecosystem resilience;

(ii) Conform to changing needs and conditions determined by consideration of the best available science;

(iii) Provide for the long-term needs of future generations for renewable and non-renewable resources;

(iv) Account for the relative values of resources; or

(v) Further or achieve environmental justice.

c) Resilient Ecosystems

If BLM does not define permanent impairment, it should at the least clarify, in the preamble to the final rule, how the agency will adhere to the mandate to manage the federal onshore oil and gas program "without permanent impairment."

We also urge BLM to mirror the draft Public Lands Rule by including a definition of the term "resilient ecosystems" in the proposed rule (or, as suggested above, to clarify and explain how BLM will manage oil and gas to conserve resilient ecosystems). This concept is particularly relevant to BLM's use of preference criteria in determining where or where *not* to offer leases, particularly in situations where BLM's goals of concentrating development in high-potential areas conflicts with the conservation of important ecosystems. Put simply, oil and gas leasing and development should only be permitted where it will not compromise resilient ecosystems. It should come as no surprise that we are deeply skeptical that *any* leasing and development is appropriate or consistent with the preservation of resilient ecosystems. But, to the degree BLM thinks otherwise, it should at least attempt to ensure that such leasing and development is consistent with the protection of resilient ecosystems. We propose the following definition:

Resilient ecosystems mean ecosystems that have the capacity to maintain and regain their structure, processes, attributes, and function when altered, whether directly, indirectly, or cumulatively, by ecological and environmental stressors such as resource use and management, drought, wildfire, nonnative invasive species, insects, and other disturbances, and to contribute to environmental justice.

d) Restoration

BLM's inclusion of the term "restoration" in its draft Public Lands Rule was a welcome one. We believe the concept of restoration is also relevant to our recommended "lifecycle" approach to the federal public lands oil and gas program. Leases should only be sold and developed if the agency can provide assurance that such development, once it comes to an end, is properly reclaimed and the land restored. Restoration is also relevant to the agency's proposed updates to the program's bonding provisions, as those funds are intended to pay for restoration lease sites, well shut-ins and infrastructure, among other things. As in the attached comments to the draft Public Lands Rule, (Exhibit 6), we suggest BLM include in the proposed rule the following definition, and incorporate this concept into its use of preference criteria for selection of lands appropriate for future leasing:

> *Restoration* means the process or act of conservation that assists in or accelerates the recovery of an ecosystem that has been impaired or degraded. Restoration may entail active intervention in an ecosystem at a landscape or project-level scale to ameliorate harm. It may also involve a prohibition on additional uses or activities or the suspension of ongoing uses or activities that cause impairment or degradation to provide an ecosystem with the opportunity to recover on its own.

e) Unnecessary or Undue Degradation

The directive to "prevent unnecessary or undue degradation" is the "heart" of FLPMA's substantive requirements.[68] Written in the disjunctive, BLM must prevent degradation that is "unnecessary" and, separately, degradation that is "undue."[69] Each of these protective mandates applies to all BLM planning and management decisions.[70] BLM acknowledges the importance of this provision in the proposed rule, as is appropriate, given that it underpins every aspect of BLM's management of public lands for oil and gas development. Nonetheless, and while we understand that FLPMA's directive to prevent unnecessary or undue degradation informs the mitigation hierarchy and the agency's leasing preference criteria, the directive remains undefined and it is not clear to us how BLM determines whether a particular impact causes degradation that is "unnecessary" or "undue" and thus must be prohibited or, at the least, reduced to comply with FLPMA.

Incorporating our proposed definitions for these concepts would clarify how BLM prevents degradation to ensure compliance with FLPMA. In particular, a definition would assist BLM to establish a threshold for climate impacts—something it has yet to do in its rules, land use plans, or NEPA analyses. As in the comments attached hereto as Exhibit 6 on the proposed Public Lands Rule, we recommend BLM adopt separate definitions for the concepts of "unnecessary degradation," and "undue degradation" to reinforce the fact that these concepts exist in the disjunctive, and that each is independently applicable to BLM's land management decisions:

> *Unnecessary degradation* means the adverse impact of a plan, decision, action, or use that:
>
> > (1) Is not needed to accomplish the purpose and need of the plan, decision, action, or use; or

[68] 43 U.S.C. § 1732(b); *Mineral Policy Ctr. v. Norton*, 292 F.Supp.2d 30, 33, 41–43 (D.D.C. 2003).
[69] *Id.* at 41–43.
[70] 43 U.S.C. § 1732(a); *see also*, *Utah Shared Access All. v. Carpenter*, 463 F.3d 1125, 1136 (10th Cir. 2006) (finding that BLM's authority to prevent degradation is not limited to the RMP planning process).

(2) Can be but is not avoided or otherwise mitigated.

Undue degradation means the adverse impact of a plan, decision, action, or use that:

(1) Violates a resource condition goal, objective, threshold, or standard established to conserve resilient ecosystems, intact landscapes, the connectivity of ecological structures, processes, attributes, and functions, or scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, or archeological values;

(2) In the absence of an identified resource goal, objective, threshold, or standard, threatens or causes a reasonably foreseeable resource impact that is either not mitigated or is not feasible to mitigate, and results in excessive or disproportionate harm.

(3) Fails to comply, to the extent consistent with the laws governing the administration of the public lands, with a land use plan, implementation plan, regulation, or standard of other Federal, Tribal, State, or local departments and agencies; or

(4) Is not mitigated within a reasonable time.

4. BLM must ensure that preference criteria help it to meet its statutory obligations.

We support BLM's intent to better acknowledge its multiple use obligations under FLPMA through the use of "preference criteria" described in Section 3120.41 and appreciate BLM's solicitation of comments on how it should incorporate preference criteria that address GHG emissions, and, by association, climate change impacts. We believe this approach has utility and is closely aligned with the "lifecycle" approach we recommend and support. However, the proposed language (in addition to omitting climate criteria) suffers from lack of clarity as to BLM's end goals and objective. These issues can be explained and addressed as follows.

BLM's primary focus, as evidenced by the proposed rule, appears to be the appropriate location of future leases.[71] In particular, the adoption of "nationwide criteria" is intended to address the very real problem of the many thousands of acres of federal mineral estate that is leased but not developed during the primary lease term. This is clearly a twofold problem for taxpayer return because it simultaneously locks up millions of acres of public land for oil and gas at the expense of other multiple uses (in particular new protective management designations or investment in the conservation and restoration of other public lands resources and values, such as water and wildlife), but does not produce royalties.

Thus, the preference criteria direct leasing "towards areas that are more likely to produce," thereby better utilizing agency resources.[72] While this makes sense from a fiscal perspective and generally a land use planning perspective in terms of a "zoning"-style approach to the allocation of different multiple uses, it is inherently inconsistent with the urgent need to reduce the nation's GHG emissions and with the Administration's national and international commitments to do so on rapidly diminishing timelines. It is also inconsistent with the need for amplified action to protect ecosystem resilience and

[71] 88 Fed. Reg. at 47,565.
[72] *Id.*

intact landscapes as a mechanism to address intensifying and adverse cumulative climate, ecological, and biodiversity impacts.

BLM's ostrich-like determination not to address the dissonance between the federal leasing program and the critical need for climate action must end. BLM must lift its gaze to further the administration's climate commitments through a combination of regulatory measures that spark sustained, comprehensive, and long-term action and tangible on-the-ground results that actually align the federal public lands oil and gas program within science-based climate boundaries. By encouraging leasing in areas of high mineral potential, BLM overlooks—at the outset—the climate costs of increasing production on federal lands. While we agree that preference criteria would, from "the outset of the leasing process . . . guide the BLM's decision-making,"[73] such decision-making must be nested within a more holistic "lifecycle" approach that places guardrails on the oil and gas program as a whole or, at the least, on a field office or planning area basis.

The proposed rule, in crafting and implementing preference criteria, must therefore acknowledge climate change and the urgent need to align the GHG emissions caused by the federal public lands oil and gas program within science-based climate guardrails. BLM can best accomplish this by incorporating GHG thresholds into the preference criteria. This can help BLM determine whether and how to move forward with new lease sales. However, as noted in the introduction, preference criteria do little to address the problem of GHG emissions from the development of federal minerals that are already obligated by existing leases. As explained further below in the discussion of surface use rights, BLM must adopt provisions within the proposed rule that address climate costs caused by both existing and future leases. BLM also needs to carefully consider how it will reconcile the conflicting purposes of preference criteria that are designed, on the one hand, to concentrate leasing in areas with the highest development potential and those, on the other, intended to reduce GHG emissions and preserve ecologically intact landscapes and non-extractive uses.

BLM's second rationale for the use of preference criteria is to direct leasing away from "areas with sensitive cultural, wildlife, and recreation resources," given that the lack of programmatic criteria "leads to conflict when leases are offered in areas with sensitive cultural, wildlife, and recreation resources."[74] This goal, while laudable, is undermined by the proposed rule's language, which again risks conflict between BLM's goal of concentrating development in high potential areas and its goal of preserving of non-mineral multiple use resources and values in those very same areas. Just because an area has high development potential should not suggest that the area's non-extractive resources should be sacrificed or harmed. The proposed rule does little to clarify which interests are to prevail in this scenario.

Thus, BLM should clarify how preference criteria will apply and be used when conflicts between resource exploitation and resource conservation inevitably occur. BLM can address this dynamic, and render preference criteria more effective, by expressly identifying what statutory authority BLM staff should look to in such instances. Below, we suggest two mechanisms BLM can use to proactively resolve these potential conflicts that can also help ensure compliance with FLPMA and deliver on Executive Order 14008's commitment that BLM consider, disclose, and do its best to mitigate the climate impacts of its decisions.

First, BLM should adopt and consistently apply the FLPMA-related definitions referenced above as an express element of the preference criteria. While BLM need not *necessarily* adopt those definitions in

[73] *Id.* at 47,565-566.
[74] *Id.* at 47,565.

this rulemaking, we strongly urge it to do so in the draft Public Lands Rule, and, at a minimum, to at least incorporate those definitions by express reference in the current rulemaking. Second, BLM should adopt climate and conservation guardrails, or denial criteria, to guide the application of the preference criteria by BLM staff. We emphasize that, in applying the preference criteria, the decision-making process should not inevitably lead to further leasing (and thus development). This is why guardrails—not just "preference criteria"—are essential: to determine, as a threshold matter, whether any leasing is *inappropriate* given science-based GHG limits and the ecological, biological, and other conservation, human-health, and community-centered resources and values that are present in a given area. Such clarity would prove of immense value to BLM, industry, and other interested parties by prescribing a mechanism for how BLM will reconcile competing multiple use obligations.

Such guardrails would complement existing criteria in Section 3120.41(f) that seek to steer leasing away from areas with important fish and wildlife habitats or connectivity areas, historic properties, sacred sites, and other high-value lands, and lands with recreation and other important uses or resources. Such guardrails can also complement BLM's intent to encourage concentrated development in areas proximate to existing oil and gas infrastructure, so long as climate, health, and environmental justice impacts of existing and foreseeable production are considered before a decision is made to make lands available for lease. When preference criteria are implemented as part of a "lifecycle" approach to governing BLM's planning and implementation of the oil and gas program, they can become an important—but not exclusive—tool for ensuring compliance with FLPMA, Executive Order 14008, and the United States' climate commitments.

We fully support BLM's goals to discourage speculative leasing, reduce surface disturbance, and to better ensure the orderly and efficient management of oil and gas resources within science-based guardrails that conform to the agency's statutory authorities and responsibilities. But this demands that BLM prospectively consider adverse cumulative impacts such as water, air, and noise pollution, GHG emissions, human health and impacts to underserved and overburdened communities, local warming and climate change, fragmented wildlife habitat, and induced seismicity—at the front end of the process, before any irretrievable commitment of federal resources (such as the issuance of a lease), and over the full course of the oil and gas management lifecycle.

a) Recommended modifications to preference criteria.

As currently drafted, the preference criteria risk serving as a tool to carve out and create targeted "sacrifice zones" by concentrating development in areas of high development potential. We have witnessed the challenges of such an approach across the Western U.S. The Greater Chaco and Colorado's North Fork Valley regions provide cogent examples. This approach, implemented in isolation, cannot fulfill BLM's responsibility to conserve ecosystem resilience, intact landscapes, and specific resources and values—in particular "air and atmospheric" values—that are encompassed by FLPMA's multiple use mandate. Instead, it perpetuates the agency's business-as-usual preference for economically-focused resource extraction over conservation values. While we appreciate that BLM is endeavoring to remedy this dynamic by placing conservation and other non-extractive values on an "equal footing" with resource extraction, per the Public Lands Rule, there remains a serious disconnect between the agency's intent and the concrete reality of the federal public lands oil and gas program's climate, environmental, and human impacts.

To address such climate impacts, we recommend BLM identify and include climate thresholds in the preference criteria that are calibrated to align public lands management with U.S. climate commitments by not only reducing emissions, but by eliminating emissions at a scale and in a timeframe capable of ameliorating the climate crisis in accord with the science. Specifically, we recommend the

BLM identify a carbon budget for the federal public lands oil and gas program as a whole and downscale that budget through localized carbon budgets that govern the full "lifecycle" of oil and gas management planning and decision-making for particular field offices, planning areas, or oil and gas-producing basins and fields. This budget would be crafted by reference to U.S. climate commitments and would operationalize BLM's existing work to quantify emissions caused by fossil fuel production on public lands.[75] BLM should accordingly establish and employ a carbon budget for each field office or resource management planning area, nested within a programmatic carbon budget for the federal public lands oil and gas program.

Such an approach would simultaneously solve two problems that have long plagued BLM's environmental analyses for its oil and gas leasing and permitting activities: the lack of any threshold by which the agency can determine the significance of GHG emissions from a particular lease sale or drilling approval (and thereby help determine whether the impacts flowing from such emissions pass muster under FLPMA), and the agency's consistent failure to analyze localized, landscape-scale impacts of climate change and the actions it takes that cause or exacerbate GHG emissions. The inclusion of a carbon-budget-based threshold in the preference criteria will help ensure that BLM's decisions to offer lands for lease are made with an informed understanding of their climate consequences. It will also help the agency's goal of concentrating oil and gas in high-potential areas without increasing local and national GHG emissions in a manner contrary to the United States' climate goals and commitments.

Consistent with this rationale, we suggest proposed Section 3120.41(f) be modified as follows:

> (f) When determining whether the BLM should offer lands specified in an expression of interest at lease sales, the BLM will evaluate the Secretary's obligations to manage public lands for multiple use and sustained yield <u>without permanent impairment</u> and to take any action required to prevent unnecessary or undue degradation of the lands and their resources, <u>including air and atmospheric resources,</u> along with other applicable legal requirements. At a minimum, the BLM will consider:
>
> > (1) Proximity to oil and gas development existing at the time of the BLM's evaluation, giving preference to lands upon which a prudent operator would seek to expand existing operations<u>, to the extent that such expansion can be carried out without contributing to the permanent impairment of the productivity of the land and quality of the environment, will not cause unnecessary or undue degradation, and will not adversely affect the wellbeing of underserved communities impacted by development or living in proximity to such lands</u>;
> >
> > <u>(2) The extent to which cumulative greenhouse gas emissions caused by oil and gas development are aligned with U.S. climate commitments to hold the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to actively pursue efforts to limit the temperature to 1.5 degrees Celsius, including by reference to the applicable carbon budget established for the area at issue;</u>

[75] 2021 BLM SPECIALIST REPORT ON ANNUAL GREENHOUSE GAS EMISSIONS AND CLIMATE TRENDS from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate, https://www.blm.gov/content/ghg/2021/.

~~(2)~~ (3) The presence of important fish and wildlife habitats or connectivity areas, giving preference to lands that would not impair the proper functioning of such habitats or corridors, and giving due consideration to the context and intensity of existing and reasonably foreseeable cumulative impacts and the need to conserve resilient ecosystems and intact landscapes;

~~(3)~~ (4) The presence of historic properties, sacred sites, and other high value leasing lands, giving preference to lands that would not impair the cultural significance of such resources;

~~(4)~~ (5) The presence of recreation and other important uses or resources, giving preference to lands that would not impair the value of such uses or resources; and

~~(5)~~ (6) The potential for oil and gas development, giving preference to lands with high potential for development, if the determination is made that such development will not contribute to the unnecessary or undue degradation of those lands through the accumulation of climate impacts and greenhouse gas emissions, and that such development will not exceed the carbon budget for the area at issue.

In addition to these amendments to the preference criteria, we suggest BLM add two additional subsections, (g) and (h),[76] to assess whether and when lands should *not* be offered for lease. These guardrails or "denial criteria" are designed to ensure that BLM consider localized conditions and not lease lands already subject to various types of adverse impacts unless or until the agency can demonstrate that cumulative impacts from new or additional oil and gas development can and will be substantially addressed through application of the mitigation hierarchy:

(g) Lands are not eligible for leasing, and the BLM may not offer such lands for lease if any of the following conditions exist, except as provided by subsection (h), below:

(1) the carbon budget applicable to the lands has been exceeded;

(2) oil and gas development would cause or contribute to the permanent impairment or the unnecessary or undue degradation of the lands, of ecosystem resilience or of intact landscapes;

(3) the lands are in a location that has already warmed an average of 1.5°C or more;

(4) the lands have experienced severe or extreme drought for five of the last seven years;

(5) the infrastructure providing access to the lands, including roads and bridges, is vulnerable to collapse or buckling due to extreme weather;

(6) the lands are located in a geologic hazard area and the development has the potential to induce subsidence, instability, landslides, or other seismic events;

[76] Currently proposed subsection (g) would be re-labeled as subsection (h).

(7) there is a likelihood that oil or gas development will adversely impact the quantity or quality of a municipality or community's water supply, including source water, cause an exceedance of water quality standards, or impact already impaired water resources;

(8) there is a likelihood that oil or gas development will adversely affect the air quality in a municipality or community, or cause or worsen an exceedance or violation of the National Ambient Air Quality Standards or other air quality standards or regulations;

(9) freshwater withdrawn from the watershed for oil and gas development cannot be returned to the hydrological cycle, resulting in a net loss from the watershed;

(10) the recreation, environmental, ecological, or water resources of the lands are of greater value than that of oil and gas production, as determined by economic valuation tools that account for both use and non-use values;

(h) For lands subject to any of the conditions described in subsection (g), BLM may offer such lands for lease only following a detailed written determination that the adverse effects of oil and gas development can be adequately addressed through application of the mitigation hierarchy. In issuing such written determination, BLM shall:

(1) prepare a mitigation plan that, by stipulation, must be adhered to by the agency or lessee, as appropriate, describing the mitigation measures to be employed and explaining and substantiating how such measures will constrain the adverse effects of oil and gas development within established or required limits;

(2) provide for the implementation of such mitigation plan by any eventual lessee, through stipulations attached to the lease(s);

(3) include in the mitigation plan completion timelines for each stage of mitigation following issuance of the lease(s) and a projected date of completion for the mitigation plan, or, if mitigation is expected to be ongoing, a description of such continuing mitigation measures and criteria for their cessation following the conclusion of reclamation at the end of the lease term; and

(4) retain the authority, by stipulation, to deny surface disturbing or other development activity or to otherwise impose a full range of additional restrictions to address adverse effects not anticipated at the time of lease issuance or, where such effects were anticipated, to address the failure of mitigation measures to constrain such effects within established or required limits.

These guardrails are a necessary adjunct to the preference criteria and provide a reasonable solution to the potential for conflict and confusion created by the proposed rule. They also help to accomplish the coequal treatment of non-extractive and extractive uses of federal public lands that is the

stated goal of BLM's proposed Public Lands Rule. Applied in combination with the preference criteria, they will help BLM comply with its statutory requirements and, by extension, U.S. climate commitments.

5. BLM's authority to manage production and Surface Use Rights Under Section 3101.12.

As discussed *supra*, incorporation of climate criteria into the proposed rule's preference criteria addresses future leasing; it fails, however, to accomplish any prospective reduction of GHG emissions from the many thousands of acres of BLM mineral estate currently leased but as yet undeveloped or now subject to production. By clarifying the scope of surface use rights conferred to a lessee and BLM's retained oversight authority and responsibilities, the agency can better address emissions impacts and, further, align oil and gas development with the agency's overarching responsibility to—pursuant to the agency's proposed Public Lands Rule—conserve ecosystem resilience and intact landscapes.[77] On this point, we note that the core premise of the proposed public lands rule—to "put conservation on an equal footing with other uses,"[78] such as oil and gas—serves as an implied concession by BLM that extractive uses, in particular oil and gas, have thus far been managed (and perceived) as a dominant use.

We propose several modifications to the scope of lease surface use rights.

First, BLM should clearly define the scope of surface use rights to protect and further the public interest, as demanded by the MLA. This approach is consistent, as discussed at length *supra*, with BLM's responsibility under FLPMA to manage federal lands and minerals for multiple use without permanent impairment, and to prevent both unnecessary or undue degradation. This can be accomplished, in part, by identifying that "reasonable measures" are determined from within the framework of the "public welfare," and not based solely on what is determined to be "reasonable and prudent" according to the operator or lessee.

Second, as a structural matter, we recommend that BLM break out each of the categories of constraints on surface use rights (stipulations, nondiscretionary statutes, NEPA, and additional reasonable measures) to improve 43 C.F.R. § 3101.12's clarity.

Third, we urge BLM to strike "specific" as a modifier of which "nondiscretionary statutes" serve as the basis of additional, post-lease restrictions on surface use rights. A statute is either nondiscretionary or not, regardless of its specificity. Moreover, many statutes, including FLPMA, have important non-discretionary provisions, yet are either qualitative in nature or otherwise general enough to provide BLM with discretion as to *how* (but not whether) it implements and adheres to those provisions. BLM should expressly retain the authority to impose restrictions on development consistent with those nondiscretionary duties, including when the agency does have a measure of flexibility in determining how precisely those duties are satisfied.

Fourth, and finally, BLM should amend its proposed Section 3101.12 to make clear that the agency retains its full authority to condition development and production on leases after the lease issues to respond to findings of site-specific NEPA analyses or changing conditions between the time a lease issues and when it is developed. It is critical that a more general sale-wide analysis at the leasing stage should not proscribe BLM's ability to impose drilling-stage restrictions at the APD stage. This is particularly important in situations where leasing-stage analysis cannot provide an accurate forecast of the number of wells, site-specific impacts, or other development-related circumstances that only come to

[77] 88 Fed. Reg. 19583 (April 3, 2023).
[78] 88 Fed. Reg. 19583, 19584.

light at the drilling stage. BLM must, in this situation, retain discretion to impose measures to address those circumstances and impacts.[79]

Based on these considerations, we propose the following changes to Section 3101.12:

> "A lessee will have the right to use only 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 applicable requirements, including:
>
> ~~(a) s~~Stipulations attached to the lease~~;~~;
>
> ~~(b) r~~Restrictions deriving from ~~specific,~~ nondiscretionary statutes, rules, or the applicable land use plan~~;~~;
>
> (c) Restrictions identified through compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to avoid, minimize, or compensate for impacts that were either not addressed or were not reasonably foreseeable at the time of lease issuance or whose evaluation was expressly deferred to the site-specific proposal stage; and
>
> (d) ~~s~~Such additional and reasonable measures as may be required and detailed by the authorized officer to avoid, minimize, or ~~mitigate~~ compensate adverse impacts to other resource values, land uses or users, federally recognized Tribes, and underserved communities. Such reasonable measures may include, but are not limited to, relocation or modification to siting or design of facilities, timing of operations, specification of interim and final reclamation measures, and specification of rates of development and production in the public interest. Modifications that are consistent with lease rights include, but are not limited to, requiring relocation of proposed operations by more than 800 meters and prohibiting new surface disturbing operations for a period of up to 90 days in any lease year."

For similar reasons, and to harmonize the proposed rules with our comments, we also recommend the following revisions to proposed 43 C.F.R. §§ 3101.13, 3101.14, which govern stipulations:

> **43 C.F.R. § 3101.13**:
>
> "(a) The BLM shall identify stipulations as conditions of lease issuance, ~~may consider~~ to conserve ecosystem resilience and intact landscapes, manage public lands without permanent impairment, prevent both unnecessary and undue degradation, and avoid, minimize, or compensate adverse effects to multiple use resource values, land uses or users, federally recognized Tribes, and underserved communities. In doing so, the authorized officer must consider the sensitivity and importance of potentially affected resources and any uncertainty concerning the present or future condition of those

[79] *See, e.g. New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 718 (10th Cir. 2009)(assessment of "all reasonably foreseeable" impacts must occur as early as possible, but is a fact-specific inquiry, and circumstances may dictate that some site-specific analysis cannot occur until APD stage).

resources and will assess whether a resource is adequately protected by stipulation without regard for the restrictiveness of the stipulation on operations."

43 C.F.R. § 3101.14:

"(c) After lease issuance, if a lessee does not accept an additional or modified stipulation, that additional or modified stipulation is not binding on the lessee and is without effect. When a stipulation is required by the relevant Resource Management Plan~~,~~ or surface management agency land management plan~~, and was inadvertently omitted~~, to comply with a nondiscretionary legal requirement, or to address an adverse effect that was not reasonably foreseeable at the time of lease issuance or whose analysis was otherwise expressly deferred to the site-specific proposal stage, a lessee's failure to sign and accept changes in the stipulations when requested by the authorized officer ~~may~~ will subject the lease to cancellation."

Regarding our third recommendation—to expressly link the scope of surface use rights to management, planning, and environmental review requirements, whether through stipulation, restriction, or reasonable measure—BLM, pursuant to FLPMA, must "provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions… tak[ing] into account the long-term needs of future generations."[80] "[C]hanging needs and conditions" salient to "future generations" include those emerging from interwoven climate, ecological, and biodiversity crises and the implications of these crises to public lands. Those long-term needs must, in turn, be understood relative to the agency's ultimate imperative: to provide for the "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment."[81] This imperative is also reflected in the "sustained yield" mandate which obliges BLM to take the long view and to satisfy the multiple use mandate "in perpetuity."[82] Resource management planning is FLPMA's engine, providing BLM with its most important opportunity to reconcile tensions intrinsic to multiple use management, and serving a primary point of engagement for Tribal, state, and local governments, public lands stakeholders, and the public at large. BLM should therefore make it crystal clear that a lessee's surface use rights are subject to a land use plan's terms, including terms provided for by land use plans either revised or amended *after* a lease is issued.

Regarding NEPA, a lessee's investment-backed expectations are delimited by the scope of NEPA analysis prepared for the lease and any subsequent analyses relevant to that lease, in particular regarding site-specific impacts and the consideration of alternatives to address such site-specific impacts. As the U.S. Court of Appeals for the Tenth Circuit explained in *New Mexico ex rel. Richardson v. BLM*, reconciling decades of case law regarding the point at which site-specific NEPA analysis was required, "[l]ooking to the standards set out by regulation and by statute, assessment of all 'reasonably foreseeable' impacts must occur at the earliest practicable point, and must take place before an 'irretrievable

[80] 43 U.S.C. § 1702(c).
[81] 43 U.S.C. § 1701(a)(8).
[82] 43 U.S.C. § 1702(h) (emphasis added). "The term cautions against managing public lands for the short-term expediencies of the day, and, as the Supreme Court has explained, 'requires the BLM to control depleting uses over time, so as to ensure a high level of valuable uses in the future.' [citing Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 58 (2004).] Because the term 'sustained yield' expressly incorporates principles of 'multiple use,' its reference to perpetually maintained 'output' accounts for impacts to both developable resources, such as timber for harvest, and environmental resources, such as watersheds and wildlife. Principles of sustained yield, like principles of multiple use, do not elevate certain uses over others, but rather, delegate discretion to the BLM to manage public lands in the best interests of the American people today, tomorrow and into the future." Solicitor's Opinion M-37039 at 8–9.

commitment of resources' is made."[83] This is sensible as there are a host of situations, often at the leasing stage, where the timing, pace, and magnitude of development is unknown and, therefore, a hard look at impacts is infeasible to underpin action to avoid, minimize, or compensate harm. In these situations, BLM must retain the full sweep of its authority to identify and impose alternatives and mitigation measures to avoid, minimize, or compensate harm throughout authorization of specific development projects presented to the agency that "ripen" issues for site-specific analysis and the identification of potential impacts.

It is only where BLM's NEPA analysis is site-specific (whether prepared before a lease is executed or, as is more typically the case, later, when BLM reviews an application for permit to drill) and development is, on that basis, approved, that the lessee obtains defensible investment-backed expectations. Where site-specific NEPA analysis has not been completed, the lessee's rights remain contingent on the agency's compliance with NEPA. This does not infringe on the lessee's rights because NEPA compliance is nondiscretionary and a lessee is therefore on notice that any "right" to drill is subject to NEPA's mandate to take a hard look at site-specific impacts and to consider reasonable alternatives and mitigation—i.e., relevant here, action to avoid, minimize, or compensate impacts—prior to the point of commitment.[84] As the standard lease form already provides, "[r]ights granted [by an oil and gas lease] are subject to applicable laws," including NEPA.[85] This dynamic should be made clear in the BLM's definition of "surface use rights."

Recognition that leases are contingent on NEPA analysis avoids predetermined decisions to allow development based on flawed expectations held by a lessee that it will be allowed to conduct operations in a manner that violates or otherwise undermines conformance with federal law.[86]

Subjecting oil and gas leases to FLPMA and NEPA also reflects the statutory directive that BLM oversees oil and gas development on the public lands not only to ensure safe and fair development of the mineral resource, but to more fundamentally "safeguard[] … the public welfare."[87] This directive underpins a key conceptual point derived from the MLA, FLPMA, and NEPA: that management of the federal mineral estate is carried out to further the *public interest*. Just because, for example, an oil and gas lessee believes its approach to lease development is reasonable and prudent does not mean that such an approach is in the public interest. Necessarily, an oil and gas company is driven by its bottom-line profit motive, not the public interest. It is the agency's responsibility to ensure that the public interest is not overlooked. Insofar as development of federal oil and gas resources is carried out by private interests, such interests are subordinate to and cabined by the full sweep of BLM's authorities and responsibilities, including FLPMA and NEPA.

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[83] 565 F.3d 683, 718 (10th Cir. 2009) (citations omitted).
[84] 565 F.3d 683, 718.
[85] BLM Form 3100-11 (October 2008).
[86] *See, e.g., Davis v. Mineta*, 302 F.3d 1104, 1112 (10th Cir. 2002) (rejecting highway project decision where "defendants prejudged the NEPA issues"); *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000) (rejecting action that agency had committed beforehand in writing to support because a NEPA analysis "must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made"); *N. Cheyenne Tribe v. Hodel*, 851 F.2d 1152, 1157 (9th Cir. 1988) ("bureaucratic rationalization and bureaucratic momentum are real dangers, to be anticipated and avoided by [federal agencies]"); *Mont. Wilderness Assoc. v. Fry*, 408 F. Supp. 2d 1032, 1037 (D. Mont. 2006) ("[T]he public's interest in the NEPA process will be degraded if the process is reduced to a series of hurdles to be cleared en route to a predetermined result"); *Idaho ex rel. Kempthorne v. U.S. Forest Serv.*, 142 F. Supp. 2d 1248, 1261 (D. Idaho 2001); *see also* 43 U.S.C. § 1732(b) (requiring that BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.").
[87] 30 U.S.C. § 187.

This principle reflects longstanding judicial precent. "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."[88]

Federal onshore oil and gas lease rights are therefore, as we have illustrated above, conditional and contingent rights amounting to no more than an "opportunity" to develop a lease if the lease otherwise meets the requirements of federal law. This is why, for example, the Supreme Court explained that offshore oil and gas leases subject to 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."[89] The scope of onshore oil and gas lease rights is even more constrained, given BLM's more expansive discretion and responsibility in overseeing the onshore federal mineral estate. In *Conner v. Burford*, for example, the Ninth Circuit described the right acquired by the lessee of a no-surface occupancy federal onshore oil and gas lease as a "right of first refusal"; "What the lessee really acquires with an NSO lease is a right of first refusal, a priority right …."[90]

Accordingly, the holder of federal mineral lease has, at most, an exclusive, but conditional and contingent right to develop oil and gas that may be found on the leasehold. That grant of rights is subject to BLM's retained duties and authorities to, *inter alia*, fulfill FLPMA's multiple use mandate through the protection of non-mineral multiple uses such as "air and atmospheric" values; balance resource use and impacts with resource protection through planning and "without permanent impairment of the productivity of the land and quality of the environment"; and, "by regulation or otherwise," to "take any action necessary prevent unnecessary or undue degradation of the lands."[91] The modern (1984 and following) standard lease form, currently Form 3100-11 (October 2008), echoes this dynamic in providing that "[r]ights 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." It is for these reasons, incidentally, that BLM can and should review its lease stipulations as a mechanism to achieve FLPMA's promise of public lands management "without permanent impairment" and to otherwise prevent unnecessary or undue degradation.

We take the time here to emphasize that a lessee's rights are subject to regulations and orders issued *after* a lease is conferred. 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."[92] The very price of a federal oil and gas lease—historically at rock bottom bid prices which started at $2.00 per acre and similarly low annual rental fees of $1.50 per acre that are far cheaper than oil and gas leases on state or private lands—underscores the capaciousness of BLM's retained duties

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[88] *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 the MLA affords "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*, 373 U.S. at 481 (1963) (citing H.R.Rep. No. 398, 66th Cong., 1st Sess. 12-13).

[89] *Mobil Oil Exploration and Producing Southeast, Inc. v. United States*, 530 U.S. 604, 621 (2000) (emphasis added).

[90] 836 F.2d 1521 (9th Cir. 1988).

[91] 43 U.S.C. §§ 1701(a)(8), 1712, 1732(b).

[92] *U.S. v. Locke*, 471 U.S. 84, 104 (1985).

and authorities. As the Federal Circuit has explained, the price of a federal fossil fuel lease must be accounted for in assessing the scope of an agency's retained authorities and whether there has been an alleged taking of a lessee's property right (or, as addressed below, whether there has been a breach of lease terms):

> In this case, which involves a business engaged in a highly regulated industry, the plaintiff's reasonable investment-backed expectations are an especially important consideration in the takings calculus. A party in Rith's position necessarily understands that it can expect the regulatory regime to impose some restraints on its right to mine coal under a coal lease. The leases themselves notified Rith of the uncertainty of obtaining permits to mine, and the low price that Rith paid for the leases may well reflect the widely understood risk that Rith would not be permitted to extract as much coal as it hoped from the leased properties. The likelihood of regulatory restraint is especially high with regard to possible adverse environmental effects, such as potentially harmful runoff from the mining operations, which have long been regarded as proper subjects for the exercise of the state's police power.[93]

It is long settled that well operators have no reasonable expectation in certain types of actions, regardless of what they may otherwise desire. For example, in a 1900 case, the Supreme Court upheld a state law prohibiting venting of natural gas for more than two days.[94] 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."[95] Natural gas waste, the court found, was a proper subject for regulation, and waste regulation did not cause a taking even if it destroyed the economic viability of a well.

Notably, the vehicle for a claim that investment-backed expectations have been frustrated—a takings claim—would likely fail at the outset. Takings law has limited application to claims against the government for alleged violation of oil and gas leases; contract law applies instead.[96] In the contract context, the government has broad authority to change a lessee's expectations where public resources are concerned. The question, generally, is not whether the government can impose new burdens on a contracting party, but whether it must pay to do so.[97] Here, however, an answer to this question is not required, as BLM acts well within the scope of lease terms in imposing new requirements via regulations promulgated under the authority of existing applicable statutory frameworks.[98] Importantly, onshore oil and gas leases provide even more expansive authority regarding future regulation than the offshore oil and gas leases at issue in *Mobil Oil* and *Century Exploration*.

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[93] *Rith Energy, Inc. v. United States*, 270 F.3d 1347, 1351 (Fed. Cir. 2001) (emphasis added).
[94] *Ohio Oil Co. v. Indiana*, 177 U.S. 190 (1900).
[95] *Id.* at 199, 211 (the takings theory "has limited application to the related rights of party litigants when those rights have been voluntarily created by contract. In such instances, interference with such contractual rights generally gives rise to a breach claim not a taking claim.")
[96] *See, e.g., Sun Oil Co. v. United States*, 572 F.2d 786, 818 (1978).
[97] *Mobil Oil Exploration*, 530 U.S. 604 (2000).
[98] BLM form 3100-11 (standard onshore oil and gas lease makes rights subject to "regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease"); *Mobil Oil Exploration*, 530 U.S. at 621 (2000) (in context of offshore oil and gas leases, lessees' rights are subject to regulations promulgated under the authority of existing applicable statutory frameworks, as contemplated by the leases); *Century Exploration New Orleans, LLC v. United States*, 745 F.3d 1168 (Fed. Cir. 2014) (applying *Mobil Oil* to find no contract breach).

B. Comment on the Proposed Bonding Provisions

We are generally strongly supportive of BLM's proposed bonding provisions. The following comments explain our support and offer suggestions for improvement of the bonding provisions in the proposed rule.

1. The need for amendments to BLM's bonding rules for oil and gas leases.

Bonding plays an important role in ensuring that wells are promptly and fully plugged and remediated, and that taxpayers and local communities are not burdened with the clean-up costs or the negative effects of living, working, or recreating in proximity to unplugged wells. Bonding thus serves as a crucial element of our recommended "lifecycle" approach to public lands oil and gas management. To achieve these purposes, bond amounts must be set at levels equivalent to the actual costs of plugging and remediation.[99] The bond amounts in BLM's current rules do not achieve this, as they are set at levels far below actual costs and have not been updated in more than half a century.

In 2019, Congress asked the Government Accountability Office (GAO) to review the status of oil and gas bonding for federal lands. The resulting report (1) described the value of bonds for oil and gas wells in 2018 compared to 2008, and (2) examined the extent to which BLM's bonds ensure complete and timely plugging and remediation.[100]

The GAO found that bonds held by BLM have not provided sufficient financial assurance to ensure timely plugging and remediation.[101] For example, bonds generally do not reflect reclamation costs[102] because most bonds are set at their regulatory minimum values, and these minimums have not been adjusted since the 1950s and 1960s to account for inflation.[103] Additionally, these minimums do not account for variables such as the number of wells they cover or other characteristics that affect reclamation costs, such as well depth or location.[104] As a result of its findings, the GAO recommended that BLM take steps to adjust bond levels to more closely reflect expected reclamation costs.[105] BLM concurred with this recommendation.[106]

We applaud BLM's attention in the proposed rule to the critical issue of raising bond amounts for oil and gas leases, as identified by the GAO's 2019 report. While we support many of the proposed changes, additional amendments are necessary to fully address the flaws in the current rules.

A properly implemented bonding system with bond amounts set at levels equivalent to the full cost of plugging and remediating all covered wells ensures that abandoned well sites will be cleaned up in a timely manner, as required by the MLA, 30 U.S.C. § 226(g). Bonding systems that set bonds at

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[99] *See* 30 U.S.C. § 226(g) (Mineral Leasing Act requirement that an "adequate" bond be established before operators begin preparing land for drilling "to ensure the complete and timely reclamation" and "restoration" of the leased tract of land) (emphasis added).
[100] Government Accountability Office, Bureau of Land Management Should Address Risks from Insufficient Bonds to Reclaim Wells (Sept. 2019), https://www.gao.gov/assets/gao-19-615.pdf.
[101] GAO Report at 14.
[102] GAO defines "reclamation" to mean "all of the actions and costs to reclaim a well, including well plugging and surface reclamation, and to restoring any lands or surface waters adversely affected by oil and gas operations." GAO Report at 1.
[103] *Id.*
[104] *Id.* at 16-17.
[105] *Id.* at 24.
[106] *Id.* at 31 (App'x II, Comments from the Department of the Interior).

appropriate levels achieve this in two ways. First, they create economic incentives for operators to promptly complete plugging and remediation themselves. Second, they ensure that regulators have access to adequate resources to complete plugging and remediation in the event the operator either cannot or will not do the work.

BLM appropriately recognizes this dynamic in the preamble to the proposed rule, noting that "[t]he existing lease bond amount of $10,000, established in 1960, no longer provides an adequate incentive for companies to meet their reclamation obligations, nor does it cover the potential costs to reclaim a well should this obligation not be met. This current bond requirement increases the risk that taxpayers will cover the cost of reclaiming wells in the event the operator refuses to do so or declares bankruptcy."[107]

It is crucial that BLM update its regulations to adopt policies, like appropriate bonding, that encourage prompt plugging and remediation of oil and gas wells because uncapped wells are ongoing sources of harmful pollution. Documented threats to human health and the environment posed by unplugged wells include air pollution, contamination of water wells, contamination of surface and ground water, emissions of potent greenhouse gases, and explosions from migration of gas into buildings and residences.[108] Abandoned wells can leak volatile organic compounds ("VOCs") such as benzene, toluene, and hexane, and dangerous methane gas (among other chemicals).[109] Benzene is widely understood to be a carcinogen. According to the U.S. EPA's "Integrated Risk Information System," "benzene is characterized as a known human carcinogen for all routes of exposure based upon convincing human evidence as well as supporting evidence from animal studies.[110]

While bonding is an important feature of regulatory oversight for any industry where a lessee or permittee assumes clean-up obligations, it is particularly important for industries like oil and gas extraction that are inherently subject to boom and bust cycles. Subject to fluctuations in international commodity prices, the oil and gas industry is prone to a pattern of drilling lots of new wells when prices are high, and then experiencing bankruptcies, idlings, and abandonments when prices drop.[111] Effective bonding protects against these trends by encouraging operators to plug wells promptly in order to free up capital dedicated to servicing the bonds, and by ensuring that regulators are able to complete clean-up in the event of abandonment by operators. Adequate bonding also frees regulators to take appropriate enforcement actions against operators without fear that such actions will lead to additional well abandonments with unfunded clean-up obligations.

2. Commenters support several key provisions of BLM's proposed amendments to bonding requirements.

a) Raising minimum bond amounts.

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[107] 88 Fed. Reg. at 47580.

[108] **Exhibit 22,** Dominic C. DiGiulio et al., *Chemical Characterization of Natural Gas Leaking from Abandoned Oil and Gas Wells in Western Pennsylvania*, 8 ACS OMEGA 19443 (2023), https://pubs.acs.org/doi/pdf/10.1021/acsomega.3c00676; **Exhibit 23,** Josh Woda, et al., *Methane concentrations in streams reveal gas leak discharges in regions of oil, gas, and coal development*, 737. SCIENCE OF THE TOTAL ENVIRONMENT, 140105 (2020), https://www.sciencedirect.com/science/article/abs/pii/S0048969720336251?fr=RR-2&ref=pdf_download&rr=7f521def4fba2bc4

[109] DiGiulio et al., Exhibit 22.

[110] **Exhibit 24,** "Benzene," U.S. EPA's "Integrated Risk Information System, https://iris.epa.gov/static/pdfs/0276_summary.pdf.

[111] GAO Report at 1.

Commenters fully support BLM's assessment that current bond amounts are far too low. In the preamble to the proposed rule, BLM states that, "[a]fter reviewing the costs to plug orphaned wells, the BLM determined the cost to plug a well and reclaim the surface ranges from $35,000 to $200,000, with an average cost of $71,000."[112] BLM is correct both in its estimate of the average plugging cost, and also in the recognition that costs can vary widely and that the upper range can be many times the average costs.

BLM's estimate of the average cost to plug an individual well is consistent with estimates from other reliable sources. For example, Ohio regulators determined that "the average total cost to plug a well is about $77,000."[113] Pennsylvania regulators recognized that "DEP has seen an average cost to plug a well of around $68,000 but costs will vary depending on geographic location, depth, and several other factors."[114] The Pennsylvania regulator determined that plugging costs can range "from approximately $10,000 per well on the low-end to as high as $800,000 or even greater per well, depending on complications encountered during the plugging process. It is also apparent in the agency's historical data that costs are dependent on location, depth, and the number of wells per contract, with some influences from other factors."[115]

Outside experts reviewing large data sets have reached similar conclusions. A peer-reviewed study titled "Decommissioning orphaned and abandoned oil and gas wells: New estimates and cost drivers" looked at the costs of cleaning up "[m]ore than 7,500 wells across 3,997 contracts" and found that "full decommissioning (i.e., plugging and remediation) costs average $76,000 across states."[116] That study further found that "[i]n rare cases, costs are on the order of $1,000 per well, while in others, they exceed $1 million per well. This wide range reflects the variety of conditions that may exist at well sites."[117]

However, as discussed further below, given the potential for individual leases to contain multiple wells, we have some concerns with BLM's approach in its proposed rule to use its individual well plugging estimate to set the individual lease minimum bond amount at only $150,000. Such an approach virtually guarantees less-than-adequate bonding for any lease with more than two wells. Commenters are also concerned with BLM's proposed continued reliance on blanket bonding in the form of statewide bonds.

b) Elimination of nationwide bonding and unit operator's bonds.

We fully support BLM's proposal to eliminate nationwide bonding and unit operator bonding. For nationwide bonding, BLM found that:

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[112] 88 Fed. Reg. at 47581.
[113] **Exhibit 25,** https://ohioauditor.gov/auditsearch/Reports/2022/Ohio_Department_of_Natural_Resources_22_Performance-Franklin_FINAL.pdf
[114] **Exhibit 26,** https://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/AbandonedOrphanWells/IIJA/PA_HANDLING_OF_IIJA_FOR_OA_WELLS.docx.
[115] *Id.*
[116] **Exhibit 27,** Raimi D., Krupnick A. J., Shah J.-S., Thompson A. (2021). Decommissioning orphaned and abandoned oil and gas wells: New estimates and cost drivers. Environmental Science & Technology, 55(15), 10224–10230. https://doi.org/10.1021/acs.est.1c02234.
[117] *Id.*

> BLM currently manages 241 nationwide bonds; however, only 129 nationwide bonds cover existing wells or liability. For the nationwide bonds with wells, each nationwide bond, on average, covers 295 wells; however, the nationwide bonds cover a median number of 35 wells per bond. The nationwide bonds covering existing wells averaged $198,000 per bond. Compared to statewide bonds, nationwide bonds cover more wells and averaged lower amounts per bond.[118]

We agree with this assessment.

> BLM further determined that:
>
> BLM believes the increased administrative burden related to managing nationwide bonds has caused nationwide bonds to lag behind statewide bonds for bond increases and reviews. Overall, the BLM believes the elimination of nationwide bonds would result in prompt adjustments to bond amounts with changing circumstances of the bonded parties' operations.[119]

We agree with this assessment.

Finally, BLM requested comment on the question of "the appropriate minimum amount for a nationwide bond, if it opts to retain the nationwide bonding provision."[120] Commenters strongly encourage BLM to eliminate of nationwide bonding. Commenters do not believe any nationwide bonding option can fulfill the purposes of incentivizing operator reclamation and ensure the availability of adequate funds to allow regulators to complete reclamation. This is because any nationwide bonding approach would result in per-well bond amounts far below the actual costs of plugging and remediation.

For unit operator bonding, BLM found that "BLM has less than 20 active unit operator's bonds nationwide."[121] BLM determined that eliminating unit operator bonding would be appropriate because "eliminating and replacing the unit operator's bond, which is already treated and managed like statewide bonds, would bring efficiencies to the program."[122] We support BLM's proposal to eliminate unit operator bonding.

i. Phase-in Timing

We support BLM's proposed phase-in period for individual, state, and nationwide bonds of 1, 2, and 3 years, respectively.[123]

We fully agree with BLM that "[t]he phase-in period should be as short as possible to account for the large number of inadequate bonds and the associated taxpayer exposure."[124] We also agree with BLM's proposal to "start with individual bonds as these are usually smaller operations with an increased risk of bankruptcies."[125] We strongly urge BLM not to change the

[118] 88 Fed. Reg. at 47581-47582.
[119] 88 Fed. Reg. at 47582.
[120] *Id.*
[121] 88 Fed. Reg. at 47582.
[122] *Id.*
[123] 88 Fed. Reg. at 47582.
[124] *Id.*
[125] *Id.*

priority order for the phase-in period. BLM must also commit to not providing any extensions to these phase-in deadlines.

ii. Removal of letters of credit and CDs as allowable instruments.

We support BLM's proposal to eliminate the option for operators to satisfy bonding requirements through use of certificates of deposits (CDs) or letters of credit (LOCs).[126] BLM states that it "is proposing to remove CDs because they are difficult to manage: the face of these instruments do not include the BLM's required language that Secretarial approval is required prior to redemption of the CD by any party. The BLM is proposing to remove LOCs because the BLM has found it is difficult for banks to include the BLM's requirements in LOCs."[127] Bonding instruments are only effective if they are enforceable and if BLM has total confidence that it will be able to access the bonded funds should it prove necessary to do so. For those same reasons, and as discussed in more detail below, commenters also urge BLM to strengthen proposed requirements for surety bond providers.

iii. Surface owner protection bonds.

We support BLM's proposal to add a new provision related to surface owner protection bonds in order to consolidate all bonding provisions in one place.[128] We agree it is appropriate to include this bonding requirement together with other bonding requirements. In the proposed rule, BLM also requests supporting documentation and comments on whether the final rule should change the minimum bond amount for surface owner protection bonds. We strongly urge BLM to take this opportunity to increase the amount of surface owner protection bonds to reflect the actual costs of surface remediation.

Currently, "[t]he surface owner protection bond may be a personal or surety bond and must be not less than $1,000."[129] This minimum bond amount must be raised to at least $10,000 per well to support adequate remediation. In addition, the impacts covered under the surface owner protection bond must be expanded beyond "the reasonable and foreseeable damages to crops and tangible improvements."[130] Actual surface impacts may be much more extensive, and landowners must be compensated for these additional impacts. Additional impacts considered should include (but not be limited to) soil condition and stability, terrain contouring, other plant and wildlife impacts, and potentially hazardous atmospheres near the well.

3. BLM should make additional changes to the existing and proposed bonding requirements.

a) BLM should adopt well-specific full cost bonding (Alternative 3).

We encourage BLM to adopt a bonding approach that relies on individual, well-specific full cost bonding rather than minimum bond amounts. Given the wide variability in remediation costs, such an

[126] 88 Fed. Reg. at 47580.
[127] *Id.*
[128] 88 Fed. Reg. at 47582.
[129] *Id.* at 47627.
[130] *Id.*

approach is the only way to ensure that all wells are either remediated by the operator, or that funds are available to BLM to complete the work at no added cost to the public.

We are concerned that BLM considered, but rejected, a full cost bonding approach. In the proposed rule BLM acknowledges that:

> The third alternative considered adjusting the bond to cover the full plugging and reclamation cost of all Federal onshore operations covered by the bond. In this alternative, the BLM would allow the operator to use either a statewide bond or an individual bond; however, the operator would be required to submit a bond rider for each additional well drilled to ensure the bond amount covers the full cost for plugging and reclamation for all wells covered by the bond. In this instance, the BLM estimated an average lease/individual bond of $994,000 would cover 14 wells and an average statewide bond of $4,686,000 would cover 66 wells.[131]

BLM apparently rejected this alternative because it "concluded that implementing the third alternative would require increased staffing at the field and state offices to manage increased workload surrounding the additional bond riders. In addition, it is expected that the BLM's application for permit to drill processing time would slow down due to waiting for additional bond riders."[132]

Not only does this rationale buck statutory mandates to require "adequate" bond amounts,[133] it fails to offset the additional burden and hardship placed on taxpayers and the public from abandoned, unremediated wells. BLM also failed to adequately consider a potential solution to these problems: imposing additional or increased lease fees to cover the cost of hiring additional staff to manage any increased workload.

It has already been well established that BLM's current approach to reviewing bond adequacy does not work. In its September 2019 report, "Bureau of Land Management Should Address Risks from Insufficient Bonds to Reclaim Wells," the GAO found that:

> *BLM has a policy for reviewing the adequacy of bonds but has not been able to consistently secure bond increases when needed, and this policy has not resulted in bonds that would be adequate to reclaim most wells.* BLM's bond adequacy review policy calls for field office staff to review oil and gas bonds at least every 5 years to determine whether the bond amount appropriately reflects the level of potential risk posed by the operator. However, according to BLM documentation, its offices did not secure about 84 percent of the proposed bond increases in fiscal years 2016 and 2017. BLM officials at one field office and one state office noted it is difficult to secure increases from bond reviews when firms are already in difficult financial situations. In November 2018, BLM updated its bond adequacy review policy and called for the agency to focus on securing bond increases from operators that show the highest risk factors. BLM's updated policy more explicitly lays out steps to secure bond increases, including that BLM should not approve new applications to drill from an operator while waiting for a bond increase. The new policy also gives BLM officials discretion to not pursue a bond increase after considering other priorities demanding staff time and workload. *It is unclear whether the update will improve BLM's ability to secure bond*

[131] 88 Fed. Reg. at 47580.
[132] *Id.*
[133] 30 U.S.C. § 226(g),

increases, as it may not address the underlying challenge of attempting to increase bonds from operators who are already in a difficult financial position.[134]

GAO further determined that:

BLM has not obtained bond increases for the majority of instances in which its reviews identify that increases are needed. Instead, most bonds are at their regulatory minimum values, which are not sufficient to cover reclamation costs incurred by BLM. Without adjusting bond levels to more closely reflect expected reclamation costs—such as by considering the effects of inflation, the number of wells covered by a single bond, and the characteristics of those wells—BLM faces ongoing risks that not all wells will be completely and timely reclaimed, resulting in additional orphaned wells.[135]

Taken together, these GAO findings confirm that BLM cannot continue to rely on a system based on setting minimum bond amounts and then rely on the conceit that it will make periodic adjustments, which "for the majority of instances," does not happen.

First, this approach suffers from the very same limitation identified by BLM as its rationale for not adopting a full cost bonding approach: lack of adequate staffing. BLM cannot have it both ways. If it intends to rely on a minimum-bond-and-periodic-adjustment strategy, it must acknowledge that it has historically been unable to adjust bonds in practice, and that minimum bond amounts must therefore be set at higher initial levels. On the other hand, if the minimum-bond-and-periodic-adjustment approach is viable, then so too would be a full cost bonding approach, as we advocate for here. BLM's past failure to seek such bond increases has put public health, safety, and the environment at risk, and allowed industry to operate without adequate bonds to cover all wells. This constitutes yet another government subsidy to extractive industries at the expense of the public interest.

Second, GAO's report highlights the risk of relying on future periodic bond adjustments. GAO recognized that "it is difficult to secure increases from bond reviews when firms are already in difficult financial situations."[136] This is because when regulators know that an existing bond is too low, they will be more hesitant to take any additional actions—including raising bond amounts—that they fear could lead to well abandonment. The best way to avoid this dynamic is to ensure that initial bond amounts most closely reflect the *actual* costs of remediation. Such an approach requires well-specific full cost bonding.

b) BLM should eliminate all forms of blanket bonding (including statewide bonding).

In the proposed rule, BLM expresses its intent to eliminate two forms of blanket bonding: nationwide bonds and unit operator bonds.[137] As discussed above, we fully support these eliminations. But the proposed rule would retain an additional form of blanket bonding by allowing the continued use of statewide bonds. We strongly urge BLM to also eliminate statewide bonding.

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[134] GAO Report at pp. 18-19, (*emphasis added*).
[135] GAO Report at pp. 23-24 (emphasis added).
[136] GAO Report at 19.
[137] 88 Fed. Reg. at 47581-47582.

All forms of blanket bonding are inadequate to meet the dual purposes of bonding requirements: 1) incentivizing operator reclamation, and 2) ensuring the availability of adequate funds to allow regulators to complete reclamation. This is because blanket bonding inherently and always results in per-well bond amounts far below the actual costs of plugging and remediation.

BLM has proposed to increase the minimum statewide bond amount to $500,000.[138] BLM also recognizes that the average statewide bond covers only 66 wells.[139] This amounts to a per-well bonded amount of only $7,576, or approximately 10% of the $71,000 that BLM has determined to be the average cost of well plugging.[140] Such a small amount cannot provide an incentive to well operators to promptly plug their wells. Nor will it provide necessary funds for remediation should the well operator go out of business. And because bankruptcy occurs at the operator level, rather than the individual-well level, BLM must consider the risk of operator default when evaluating the appropriateness of relying on any form of blanket bonding. Thus, when a blanket-bonded operator goes out of business, regulators assume clean-up obligations for an even greater number of wells.

Should BLM still desire the administrative convenience of a more comprehensive bond option, BLM must at a minimum set the statewide bond amount at a level adequate to both incentivize plugging by the operator and to ensure BLM has adequate funds to complete the plugging of all of that operator's wells. That would require a minimum statewide bond amount of at least $4,686,000 to cover the costs of plugging and remediating the average number of wells covered by statewide bonds, i.e., 66 wells, at a cost of $71,000 per well (BLM's determination of the average cost of well plugging). Thus, appropriate statewide bond amounts would be nearly ten times larger than BLM's current proposal of $500,000.

c) BLM should incorporate automatic adjustments tied to inflation indices.

In its proposed rulemaking, BLM requests comment on "whether it should propose to adjust the minimum bond amounts by inflation."[141] We strongly believe that BLM must provide for automatic increases to minimum bond amounts to keep pace with inflation and ensure that bond amounts will continue to incentivize operator remediation, and ensure funds are available to BLM to complete remediation where necessary.[142] BLM cannot risk a repeat of the present situation, where the agency failed to adjust minimum bond amounts for more than half a century.

d) BLM should impose more stringent criteria for sureties.

We request that BLM impose more stringent criteria on surety bond providers. BLM's proposed rule, like the existing rule, allows operators to satisfy bonding obligations by providing either a surety or personal bond.[143] For surety bonds, the bond "must be issued by qualified surety companies approved by the Department of the Treasury (see Department of the Treasury Circular No. 570)."[144] We recommend

[138] 88 Fed. Reg. at 47,581.
[139] *Id.*
[140] *Id.*
[141] 88 Fed. Reg. at 47580.
[142] *See also* GAO Report at 14, 24.
[143] 43 CFR § 3104.1.
[144] *Id.* at § 3104.1(b).

that BLM require additional criteria for sureties in order to ensure that bonded amounts will actually be available to the regulator if and when the operator defaults.

BLM has already recognized in the proposed rule the need to ensure bonding mechanisms are reliable. For example, BLM has proposed eliminating CDs and LOCs because those instruments do not conform to BLM requirements regarding redemption of the instruments.[145] For the same reasons, BLM must address the fact that existing requirements, including the criteria for listing on Department of the Treasury Circular No. 570, fail to provide adequate assurances that approved surety bond providers are able to pay out the full amount of the bonds they provide. We thus strongly recommend that BLM adopt additional criteria that (1) consider a surety's existing aggregate risk when determining whether that surety qualifies for certification, and (2) impose an underwriting limitation on the aggregate risk of all bonds issued by a surety.

Currently, Treasury rules for sureties impose a "limitation of risk" on a per-bond basis, but do not include any limits on aggregate risk based on the total number and value of bonds already issued by that surety provider. Some surety providers may therefore be dramatically over-exposed to risk for an industry prone to bankruptcies and boom-bust cycles. This leads to an elevated risk that one or more sureties may themselves go out of business, eliminating the purported protections afforded by all of the bonds issued by those sureties, and exposing BLM—and taxpayers—to full liability for covering those costs of clean up.

e) BLM should require bonding or equivalently stringent criteria for allowing well idling.

Idle wells have created a public health, environmental, and fiscal crisis. While operators are legally and financially responsible for properly plugging these wells and restoring the surface to its previous state, there is no deadline imposed by which to do so. As a result, industry avoids plugging and cleanup by perpetually idling wells, which are often orphaned to the BLM to remediate at public expense. In the proposed rule, BLM acknowledges that historical data "indicate[] that such wells are at an increased risk of becoming orphaned."[146]

We support BLM's proposal to amend definitions for "shut-in" and "temporarily abandoned" wells, as well as new reporting requirements for operators to identify such wells to BLM. The proposed operator reporting requirements for these idled wells would aid BLM in obtaining accurate accounting of idled wells. We also note, as discussed more below, that adequate bonds should be required for temporarily abandoned wells to disincentivize the current trend of perpetually idling wells rather than plugging and completing clean up and remediation, and to support such remediation if operators are unable or unwilling to do so.

f) BLM should disincentivize operators from maintaining wells perpetually as shut-ins.

We support the proposed rule's requirement that operators notify the BLM of a well's shut-in status and shut-in date within 90 days of well shut-in. We also support requirements for hard deadlines for plugging and remediation of future idled wells within 4 years of reporting shut-in status. Additionally, we suggest that BLM prioritize plugging and remediation of idled wells sooner than 4 years for those wells in low-income communities and communities of color, or which are in or near habitat for sensitive

[145] 88 Fed. Reg. at 47580.
[146] 88 Fed. Reg. at 47,595.

species. In order to address the disproportionate burdens unreclaimed wells place on communities of color, low-income communities, and Tribal and indigenous communities in the form of adverse human health and environmental impacts, we recommend that BLM use the Climate and Economic Justice Screening Tool.[147] The Department of Interior recently recommended that states use this tool to prioritize remediation of hazardous orphan well sites in overburdened and underserved communities when applying for Formula Grants for orphaned well clean up under the Bipartisan Infrastructure Law.[148]

Furthermore, we support the BLM's proposal to require justification from operators who seek 1-year extensions beyond the 4-year default period for plugging and remediation of idled wells. However, BLM must enact and enforce strict standards to ensure that the 1-year extension process for wells which operators demonstrate future beneficial use does not become a mere rubber stamping of extensions, perpetuating the current practice of continually idling wells rather than requiring their closure, cleanup, and remediation. BLM should set strict standards for evaluating what qualifies as a demonstration of beneficial future use that would justify granting a 1-year extension to the idled well status. For example, we note that unspecified potential future use for carbon storage should not qualify as a beneficial future use of an idled well where there is no specific carbon storage project as yet identified, and where the operator has not yet completed transfer of the Class II well to Class VI status, as required for carbon storage. The BLM should establish strict requirements such as these, and other appropriate requirements, for operators seeking extensions of the idled well period.

g) Temporarily abandoned wells should be subject to bond requirements.

We agree that "temporary abandonment should trigger a bond review."[149] While we support the proposed rule's changes to the definition of "temporarily abandoned" wells to require detailed submissions to justify temporary abandonment of greater than 30 days, a mere justification and approval by the regulator is not adequate to disincentivize well abandonment or perpetual idling by operators.

First, saddling already understaffed BLM field offices with additional duties to review the adequacy of the operator's "justification for [] abandonment" of temporarily abandoned wells merely perpetuates a system that has historically failed to prevent well abandonment. BLM already has a well review policy that calls for field offices to, among other things, periodically review all inactive wells to determine whether they are capable of producing oil or gas or have a future beneficial use and, if not, have operators submit plans to reclaim the wells.[150]

Second, by not requiring bonds for idled wells, such as temporarily abandoned wells, BLM would create a perverse incentive for operators to maintain operation or potential future use of wells which they would otherwise close and remediate, undermining the Biden administration's directive to respond to the climate emergency and advance environmental justice, by extending oil and gas extraction

[147] https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5; *see also* the Addendum to the Interim Implementation Guidance for the Justice40 Initiative, M-21-28, on using the Climate and Economic Justice Screening Tool (CEJST) (M-23-09) dated January 27, 2023, which provides supplemental guidance to Federal agencies on using the CEJST tool.
[148] https://www.doi.gov/sites/doi.gov/files/state-formula-grant-guidance-07.07.2023.pdf.
[149] 88 Fed. Reg. at 47,595
[150] Bureau of Land Management, *Instruction Memorandum 2012-181* (Sept. 5, 2012), https://www.blm.gov/policy/im-2012-181.

rather than phasing down fossil fuel use, and perpetuating the adverse health and safety impacts of such wells to frontline communities.[151]

h) Bond transfers.

i. BLM must maintain and enforce predecessor liability requirements to prevent operators from evading reclamation obligations through lease transfers.

We support BLM's proposed clarifying amendments to section 3106.72 relating to the "[c]ontinuing obligation of an assignor or transferor." This section states that "the assignor or transferor will continue to be responsible for lease obligations that accrued before the approval date, whether or not they were identified at the time of the assignment or transfer," including "responsibility for plugging wells and abandoning facilities drilled, installed, or used before the effective date of the assignment or transfer."[152] It is critically important that BLM maintain and enforce policies such as this to prevent solvent operators from using lease transfers to evade reclamation obligations by passing those obligations on to insolvent successors.

This, along with the inadequate bonding levels, contributes to a perverse incentive structure whereby lessees and operators do not plan for and hold sufficient capital to clean up oil and gas infrastructure. Instead, once production and the economic viability of a well declines, a lessee may sell their assets to a poorly capitalized company. This lets the assignor or transferor avoid clean-up costs, freeing up capital that is invested in the acquisition and development of new wells or distributed to shareholders as dividends. Meanwhile, the assignee or transferee, whose business model may be geared to finding value in marginal or low-producing wells by cutting corners, is at a higher risk of bankruptcy, creating heightened risk of adverse impacts and shifting clean-up costs onto the public's shoulders.

In addition to providing for predecessor liability, BLM should also institute policies to identify successors or transferees who may lack the resources to complete all reclamation and other clean up obligations they may assume via the lease transfer.

ii. BLM should require a bond adequacy review as a condition of any lease transfer.

While Commenters appreciate BLM's attention, in the proposed amendments to section 3106.60 ("Bond Requirements"), to the need to ensure replacement bonds are in place at the time of lease transfer, Commenters urge BLM to clarify and strengthen the proposed language.

BLM's proposed amendments would require an assignee, transferee, or new operator to provide a bond covering lease obligations "to the same extent" as the assignor's or transferor's bond.[153] Although Commenters assume BLM intended this language to provide only a necessary minimum floor for the replacement bond, it could be read as precluding a bond adequacy review that could result in a higher bond. Instead, BLM should phrase this requirement as: "to the same extent as the assignor's or transferor's bond, or to a greater amount if deemed necessary following a bond adequacy review."

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[151] *See* President Joe Biden, *Tackling the Climate Crisis at Home and Abroad*, Exec. Order No. 14,008, (Jan. 27, 2021).
[152] 88 Fed. Reg. at 47630.
[153] 88 Fed. Reg. at 47585, 47630.

In order to ensure the adequacy of bonds at the time of lease transfer, BLM should also adopt additional requirements expressly requiring bond adequacy review at the time of transfer. Such a rule should require the assignor or transferor to furnish BLM with information on the number, type, and depth of all wells existing under the lease to be transferred, and should require BLM to use this information—and any other relevant information—to assess whether the existing bond amount is adequate to ensure prompt and complete reclamation of all existing wells, as well as any new wells that may be drilled by the assignee or transferee.

C. Comment on Health and Environmental Justice Issues.

As with climate, the proposed rule suffers from a critical flaw with respect to health and environmental justice: it presumes and enables the indefinite continuation of oil and gas leasing and drilling. As discussed *supra*, any additional oil and gas extraction perpetuates adverse climate and health risks and impacts and is fundamentally incompatible with advancing environmental and climate justice. Indeed, a 2022 review of literature on health impacts of fracking by Physicians for Social Responsibility ("PSR") concluded that:

> In sum, the vast body of scientific studies now published on hydraulic fracturing in the peer-reviewed scientific literature confirms that the climate and public health risks from fracking are real and the range of environmental harms wide. *Our examination uncovered no evidence that fracking can be practiced in a manner that does not threaten human health directly or without imperiling climate stability upon which human health depends.*
>
> The rapidly expanding body of evidence compiled here is massive, troubling, and cries out for decisive action. Across a wide range of parameters, the data continue to reveal a plethora of *recurring problems that cannot be sufficiently averted through regulatory frameworks. The risks and harms of fracking are inherent in its operation. The only method of mitigating its grave threats to public health and the climate is a complete and comprehensive ban on fracking. Indeed, a fracking phase-out is a requirement of any meaningful plan to prevent catastrophic climate change.*[154]

However, we recognize that interim harm-reduction measures, such as setback distances, conditions of approval, or leasing stipulations are essential to a just transition, and are necessary to protect community and ecosystem health and advance environmental justice, now and for future generations. Those who are breathing polluted air or drinking contaminated water, or living with multigenerational legacies of extraction and pollution, need strong setback requirements and other "reasonable measures"[155] to reduce or eliminate risks and impacts here and now. To that end, we offer more detailed comments below regarding how the rule can better advance environmental justice, protect public health and mitigate, minimize, or, wherever possible, avoid adverse risks and impacts, particularly for those in frontline or "underserved communities."[156] But ultimately, any "reasonable measures" to

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[154] **Exhibit 28,** Physicians for Social Responsibility and Concerned Health Professionals of NY, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking, 8th Edition (2022) (emphasis added).

[155] *See* 88 Fed. Reg. 47573.

[156] BLM cites Executive Order 14035, "Diversity, Equity, Inclusion and Accessibility in the Federal Workforce" (EO 14035) for its definition of "underserved community:" "[t]he term 'underserved communities' refers to populations sharing a particular characteristic, as well as geographic communities, who have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life." BLM also cites EO 14008 interim CEQ

mitigate or avoid harm must be *part of*—not a *substitute for*— a just transition away from oil and gas extraction.

1. Background.

a) Environmental and Climate Justice.

According to the U.S. EPA's widely-used definition, "environmental justice" is "the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, in the development, implementation, and enforcement of environmental laws, regulations, and policies."[157] BLM defines environmental justice similarly in its own Instruction Memorandum 2022-059 and accompanying FAQ.[158]

Executive Order 12898 on environmental justice requires each Federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[159] Even more recently, President Biden's January 27, 2021 "Executive Order on Tackling the Climate Crisis at Home and Abroad" (EO 14008) updated EO 12898 and explicitly recognized the inexorable links among climate, health, and environmental justice, and the corresponding need to address all of them in concert, with a whole-of-government approach.[160] In the proposed rule, BLM acknowledges EO 14008 and its requirement that agencies "[develop] programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[161]

Guidance for its definition of "community" as "either a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions." *See* Proposed Rule at 88 Fed. Reg. 47573.

[157] *See* U.S. Environmental Protection Agency, *Environmental Justice*, www.epa.gov/environmentaljustice.

[158] Bureau of Land Management, IM 2022-059, "Environmental Justice Implementation" (September 20, 2022) https://www.blm.gov/policy/im2022-059; *see also* Bureau of Land Management, 2022. Addressing Environmental Justice in NEPA Documents: Frequently Asked Questions. U.S. Department of the Interior, Bureau of Land Management, Socioeconomics Program, Washington, D.C. ("Environmental justice (EJ) is the fair treatment and meaningful involvement of all potentially affected people—regardless of race, color, national origin, or income—when we in the federal government develop, implement, and enforce environmental laws, regulations, and policies.").

[159] Exec. Order No. 12,898, 59 Fed. Reg. 32 (Feb. 11, 1994), https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf.

[160] *See* Executive Order 14008, 86 Fed. Reg. 7619-7633, Tackling the climate crisis at home and abroad (January 27, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/. Section 201 (Policy), for example, recognizes the threat to public health posed by the climate crisis and the need to "deliver environmental justice in communities all across America." Another part of the EO is expressly dedicated to "Securing Environmental Justice and Spurring Economic Opportunity," and Section 219 expands on the language of EO 12898, directing agencies to make environmental justice part of their mission, to expressly include climate, cumulative impacts, and "accompanying economic challenges." Section 221 creates the "White House Environmental Justice Advisory Council" (WHEJAC), which has since submitted draft recommendations to CEQ on an environmental justice screening tool and on updates to EO 12898.

[161] 88 Fed. Reg. 47573

While we use the term "environmental justice" in these comments, our intent is to encompass both environmental and climate justice.[162] The IPCC's recent Sixth Assessment Report (AR6) underscores the importance of climate justice and outlines its main components, including generational justice, stating:

> The term climate justice, while used in different ways in different contexts by different communities, generally includes three principles: distributive justice which refers to the allocation of burdens and benefits among individuals, nations *and generations*; procedural justice which refers to who decides and participates in decision-making; and recognition which entails basic respect and robust engagement with and fair consideration of diverse cultures and perspectives.[163]

FLPMA's definition of multiple use includes several clauses that embody climate justice concepts. Public lands must be managed to "best meet the present and future needs of the American people" through "judicious use of the land" such that there is "sufficient latitude for periodic adjustments in use to conform to changing needs and conditions" and "a combination of balanced and diverse resources uses that takes into account the long-term needs of future generations for renewable and non-renewable resources."[164] Multiple use is also defined to provide for "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and quality of the environment with consideration given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."[165]

Through resource management planning, BLM must "consider present and potential uses of the public lands," "consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values" and "weigh long-term benefits to the public against short-term benefits."[166] NEPA Section 101(b) reinforces FLPMA's prospective role in achieving environmental justice, directing BLM to use "all practicable means" to "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."[167]

b) Environmental Justice and Health.

Health and environmental justice are inexorably linked. BLM's discussion of "underserved communities" in the proposed rule suggests that the agency recognizes this. BLM states:

> These underserved communities can be impacted as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of

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[162] While this section and the subsequent section of these Comments focus on human health and the human dimensions of environmental and climate justice, commenters note that the broader principles of "environmental and climate justice" and a "just transition" should include ecological considerations and take into account impacts not only on human communities but also non-human animals and ecosystems, including but not limited to impacts on endangered or threatened species and their habitats.

[163] *See* IPCC, 2021: Summary for Policymakers and Technical Summary at 13, *see especially* B.1.4 and B.1.7, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf, Exhibits 15 and 16; *id.* at 9 (emphasis added).

[164] 43 U.S.C § 1702(c).

[165] 43 U.S.C § 1702(c).

[166] 43 U.S.C. §§ 1712(c) (5), (6), and (7).

[167] 42 U.S.C. § 4331(b).

> positive environmental, health, economic, or social conditions within these populations or places. The term ["underserved community"] describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities."[168]

Indeed, cumulative health risks and impacts can arise not only from multiple pollutant exposures, and cumulative pollution exposures over time, but also from compounding structural, social, and economic factors, many of which are rooted in systemic inequities and injustices. Researchers have begun to apply a growing body of evidence documenting how social and environmental stressors lead to health inequities and cumulative impacts,[169] specifically in the oil and gas drilling context.[170]

2. Specific Health and Environmental Justice Considerations for the Proposed Rule.

We appreciate that BLM acknowledges the potential for disproportionately high, adverse, and cumulative impacts of leasing and drilling on "underserved communities" and environmental justice.[171] We also appreciate BLM's acknowledgment of its authority to require reasonable measures to avoid, minimize, or mitigate those impacts.[172] However, the proposed rule fails to ensure such health, environmental justice, and community protections. As discussed above, the rule enables continued oil and gas extraction. And in the proposed rule, BLM problematically retains discretion *not* to implement "reasonable measures" to avoid, minimize, or mitigate adverse impacts. We do appreciate that BLM asks how the rule can better achieve the agency's "intent to give preference to leasing parcels where development would have less impacts on nearby communities."[173] But, as discussed further below, BLM's proposal to prioritize leasing in high-development-potential areas could *exacerbate* adverse impacts on some frontline communities—particularly cumulative impacts.

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[168] 88 Fed. Reg. 47573-74.

[169] *See, e.g.,* **Exhibit 29**, Rachel Morello-Frosch et al., *Understanding the Cumulative Impacts of Inequalities in Environmental Health: Implications for Policy*, 30 HEALTH AFFAIRS 879 (May 2011) (Identifying four key concepts underlying the emerging knowledge about cumulative impacts of environmental and social stressors: "First, health disparities between groups of different racial or ethnic makeup or socioeconomic status are significant and persistent, and exist for diseases that are linked to social and environmental factors. Second, inequalities in exposures to environmental hazards are also significant and persistent, and are linked to adverse health outcomes. Third, intrinsic biological and physiological factors—for example, age—can modify the effects of environmental factors and contribute to differences in the frequency and severity of environmentally related disease. And fourth, extrinsic social vulnerability factors at the individual and community levels—such as race, sex, and socioeconomic status—may amplify the adverse effects of environmental hazards and can contribute to health disparities."). In addition, the U.S. EPA and numerous states have called for, and developed guidance on, cumulative impact analyses, including cumulative risk assessments and health impact assessments (HIAs), that analyze multiple environmental stressors in conjunction with social stressors, environmental justice considerations, and social determinants of health. *See, e.g.*, U.S. ENVIRONMENTAL PROTECTION AGENCY, FRAMEWORK FOR CUMULATIVE RISK ASSESSMENT (May), https://www.epa.gov/sites/default/files/2014-11/documents/frmwrk_cum_risk_assmnt.pdf.

[170] *See, e.g.,* **Exhibit 30**, Susan Kinnear et al., *The Need to Measure and Manage the Cumulative Impacts of Resource Development on Public Health: An Australian Perspective* (May 15, 2013); *See also* **Exhibit 31**, Jill Johnston & Lara Cushing, *Chemical Exposures, Health, and Environmental Justice in Communities Living on the Fenceline of Industry*, 7 Current Environmental Health Reports, 48-57 (2020).

[171] 88 Fed. Reg. 47573.

[172] *Id.*

[173] 88 Fed. Reg. 47590.

a) Setbacks and "Reasonable Measures" to Mitigate or Avoid Adverse Health and Environmental Justice Impacts.

BLM requests comments on "the proposed distance standard for reasonable measures" — specifically, the proposed 800-meter minimum distance for relocating proposed operations due to resource concerns, including concerns regarding adverse health impacts and impacts to "underserved communities."[174] We appreciate the clarification in the proposed rule that 800 meters, or approximately 0.5 miles, is a floor, not a ceiling, for the distance by which proposed operations can be relocated to mitigate or avoid adverse health and environmental justice impacts.[175] Likewise, we appreciate that the proposed rule allows BLM to prohibit surface-disturbing operations for a *minimum* of 90 days to mitigate or avoid adverse impacts.

However, in addition to the recommendations regarding the scope of surface rights provided above, we are concerned that the proposed rule does not address adverse *sub*surface impacts and risks that could result from the drilling of laterals up to three miles. Setbacks or relocation distances should take these subsurface impacts into account, instead of focusing only on surface disturbance in relation to the wellpad. Indeed, some experts have called for a minimum distance of three miles from critical infrastructure to account for such additional risks and impacts and raised concerns about groundwater impacts.[176] Moreover, BLM still has ample leeway *not* to implement these harm-mitigation or avoidance measures at all.

To better protect health and honor the Biden Administration's stated commitment to environmental and climate justice—and BLM's own stated desire to minimize impacts of leasing on nearby communities—the rule should include at least some circumstances under which such harm-mitigation or avoidance measures are *required*. For example, drilling operations should not be allowed within a certain radius (ideally, at least one mile) of schools or residences. We also urge the agency to exercise its authority under 30 U.S.C. § 187 and other applicable law to set an even stronger "floor" for the proposed distance standard in this rule—ideally, at least one mile, with a framework for requiring greater distances under certain circumstances or to account for subsurface laterals— consistent with the principles, health and science literature, and findings discussed below.

An extensive and ever-growing body of peer-reviewed research has shown what people living near oil and gas operations already know firsthand—that proximity to drilling and fracking operations and other oil and gas facilities is linked to adverse health risks and impacts. These risks and impacts are discussed in further detail throughout this section, and in the accompanying exhibits, but in general, they include (but are not limited to):

- Reproductive harms – including birth defects, low birth weight, preterm births, and miscarriages;
- Respiratory health effects – including asthma, lung disease, breathing difficulty, and, most recently, increased vulnerability to COVID-19;

[174] 88 Fed. Reg. 47574.
[175] *Id.*
[176] *Fracking-induced earthquakes prompt call for buffer zones around Site C dam*, The Narwhal, Ben Parfitt, March 21, 2019. https://thenarwhal.ca/fracking-induced-earthquakes-buffer-zones-site-c-dam/.

- Eye, skin, and throat irritation and rashes;
- Cardiovascular effects – including higher blood pressure and other indicators of, or precursors to, heart disease;
- Possible disruption of the endocrine system (a system of glands producing hormones that regulate a variety of functions in the body, including metabolism, growth and development, reproduction, sleep, and mood);
- Cancer (lung cancer and other types of cancer);
- Motor vehicle injuries and fatalities, and other health and safety risks associated with increased vehicle traffic (and the air pollutants it emits) from oil and gas development;
- Injuries and fatalities from explosions, fires, spills, and leaks; and
- Trauma and psychological stress.

One excellent, frequently updated, and easy-to-use resource for keeping up with this growing body of peer-reviewed research is the Physicians, Scientists, and Engineers for Healthy Energy ("PSE Healthy Energy") database, the Repository for Oil and Gas Energy Research, or "ROGER."[177] ROGER is an extensive repository of peer-reviewed literature, "a near-exhaustive collection of bibliographic information, abstracts, and links to many of [sic] journal articles that pertain to shale and tight gas development."[178] This database is organized into several categories, and for the "Health" category alone, there are over 260 studies listed, including several recent studies from 2019-2023. BLM should avail itself of this invaluable resource to inform reasonable mitigation measures and establish a minimum distance standard that protects those in frontline communities and accounts for cumulative risks and impacts and environmental justice.

We emphasize that there is no singular "safe" or "ideal" oil and gas setback distance that is completely protective of everyone's health and safety for every impact or risk. The distance that is necessary to protect health and safety depends on several factors. Factors that could influence what setback distance is necessary to protect public health and safety include:

- What health and safety outcome (or outcomes), risks and effects are at issue (e.g. the minimum or ideal distance necessary to protect against asthma might be different than the distance required to protect against birth defects).
- What the setback is "to" and "from." For example:
    - A greater setback distance may be needed from certain residences to account for cumulative exposures, or from schools to account for the added risks and impacts associated with early childhood or prenatal exposure to oil and gas.
    - Is the setback measured from an oil and gas well, a pipeline, or another facility or piece of equipment? The setback necessary to protect people from air pollutant emissions

[177] *See* Physicians, Scientists, and Engineers for Healthy Energy ("PSE Healthy Energy"), "The ROGER Citation Database," https://www.psehealthyenergy.org/our-work/shale-gas-research-library/.
[178] *Id.*

from a well is probably different than the distance needed to protect people from a pipeline explosion or spill.

- Local geography, topography, and wind conditions.

Even though there is no one-size-fits-all setback distance, researchers and health professionals have been able to draw some conclusions about the relationship between proximity to oil-and-gas facilities and activities and various health risks and outcomes. On this basis, they have made recommendations about setback distances as they relate to various health outcomes or populations. For example, multiple peer-reviewed papers have identified adverse health effects and risks arising from exposure to unconventional oil and gas drilling operations, even within a large radius of residences—potentially up to ten miles.[179] One of these studies found that babies whose mothers lived in close proximity to multiple oil and gas wells were 30% more likely to be born with heart defects than babies born to mothers who did not live close to oil and gas wells.[180] Another study found higher rates of adverse birth outcomes among mothers residing in rural areas within 10 km (6.21 miles) of oil and gas wells.[181]

Other adverse health impacts documented among residents living near drilling and fracking operations include increased reproductive harms, asthma attacks, higher rates of hospitalization, ambulance runs, emergency room visits, self-reported respiratory problems and rashes, motor vehicle fatalities, trauma, and drug abuse. Moreover, one recent study found that fracking and drilling near people's homes "drives stress experiences that go beyond the mere presence of industrial land uses in neighborhoods," and identified two key institutional barriers driving negative mental health impacts for people living near UOG [unconventional oil and gas] production – namely: 1) uncertainty, due to inaccessible, transparent information about environmental and public health risks and 2) powerlessness to meaningfully impact regulatory or zoning processes.[182] In turn, "these institutional barriers make UOG production a chronic stressor – which can be more insidious, negative, and, significantly, can generate longer- term mental health impacts such as self-reported depression."[183]

Accordingly, some health experts have called for a one-mile minimum distance between drilling facilities and schools, hospitals, and occupied dwellings in light of the heightened health risks of residing within close proximity to unconventional oil and gas drilling sites.[184] Many others call for setbacks of

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[179] *See, e.g.,* **Exhibit 32**, Lisa M. McKenzie *et al.*, *Birth Outcomes and Maternal Resident Proximity to Natural Gas Development in Rural Colorado*, 122 ENVIRONMENTAL HEALTH PERSPECTIVES 412 (April 2014) [Hereinafter McKenzie et al., *Birth Outcomes*) (Finding an increased risk of congenital heart and neural tube defects in babies born to mothers living within 10 miles of a natural gas well); **Exhibit 33**, Janet Currie *et al., Hydraulic Fracturing and Infant Health: New Evidence from Pennsylvania*, 3 SCIENCE ADVANCES e1603021(Dec. 13, 2017) (Finding evidence of negative health effects of in utero exposure to fracking sites within 3 km, or about 1.86 miles, of a mother's residence, with the largest health impacts seen within 1 km, or about 0.62 miles); **Exhibit 34**, Ellen Webb *et al., Potential Hazards of Air Pollutant Emission from Unconventional Oil and Natural Gas Operations on the Respiratory Health of Children and Infants*, 31 REV. ENVIRONMENTAL HEALTH 225-243 (Jun. 1, 2016), at 236 [hereinafter Webb et al.] (Noting that many unconventional oil and gas setback rules, for setbacks of 1000 feet or less, do not adequately protect health, especially children's respiratory health, that "the majority of municipal setback ordinances are not supported by empirical data," and calling for a one-mile minimum for setbacks between drilling facilities and schools, hospitals, and occupied dwellings).

[180] *See* McKenzie *et al.*, *Birth Outcomes*, *supra* Exhibit 32.

[181] **Exhibit 35,** Kathy V. Tran et al., *Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006–2015 Births*, 128 Environmental Health Perspectives, 067001 (2020).

[182] *See* **Exhibit 36**, Stephanie A. Malin, *Depressed democracy, environmental injustice: Exploring the negative mental health implications of unconventional oil and gas production in the United States*, 70 Energy Research & Social Science, 101720 at 2 (2020).

[183] *Id.*

[184] *See* Webb *et al.*, *supra* Exhibit 34.

even greater distances. One study found adverse health impacts at distances of six miles.[185] Another study found increased risk of congenital heart and neural tube defects in babies born to parents living within 10 miles of natural gas wells.[186] Even larger setbacks may not protect against certain health hazards, especially for people already facing disproportionate health risks due to cumulative social, structural, and environmental factors, or for children and the elderly. For example, a 2016 study and Health Impact Assessment ("HIA") in Maryland's Marcellus Shale Basin found that, even with a setback of 2000 feet from residential property as a "mitigating factor," Air Quality was a fracking-related hazard of High concern for its potential negative health impacts after taking into account additional evaluation criteria, such as presence of "vulnerable populations," duration and frequency of exposure, and likelihood and severity/magnitude of health effects.[187]

Collectively, these findings underscore the need for a just transition away from oil and gas altogether. They also suggest that, if stipulations, restrictions, and the proposed "reasonable measures" to address health, environmental justice, and other impacts are to be effective, they should be strengthened—both by increasing the minimum distance BLM can require for relocation of operations, and by incorporating a framework under which such measures *must* be implemented in certain circumstances.

b) Minimizing impacts of leasing on nearby communities.

BLM also asks how the rule can better achieve the agency's "intent to give preference to leasing parcels where development would have less impacts on nearby communities."[188] We discuss preference (and denial) criteria in further detail elsewhere in these comments. However, we are concerned that BLM's proposal to give leasing preference to areas with high development potential[189] could in fact have *adverse* environmental justice impacts. Polluting facilities and activities tend to be disproportionately sited in already-overburdened communities.[190] For example, a recent analysis of oil and gas development in California found that 14 percent of the state's population totaling 5.4 million people live within a mile of

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[185] Tran et al., *Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006–2015 Births*, Exhibit 35.

[186] Mckenzie et al., *Birth Outcomes*, *supra*, Exhibit 32.

[187] *See, e.g.*, **Exhibit 37**, *Meleah* D. Boyle et al., Hazard Ranking Methodology for Assessing Health Impacts of Unconventional Natural Gas Development and Production: The Maryland Case Study, 11 PLOS ONE e0145368 (Jan. 4, 2016) [Hereinafter Boyle et al.](Assigning setback effectiveness a "positive" value of 1 if it is anticipated to minimize health effects, and a "negative" value of 2 if it is not anticipated to minimize health effects, in evaluating the "hazard rankings" for a variety of unconventional natural gas drilling impacts. Notably, there is no "zero" value by which setbacks eliminate health risks or health effects. And, for effects related to water quality, seismic activity, social determinants of health, healthcare infrastructure, cumulative exposures/risks, and occupational health and safety, the authors determined that, at least in that study area (Marcellus Shale in Maryland), setbacks were not anticipated to minimize or mitigate health risks at all. *See* Table 3); *see also* **Exhibit 38**, Counselor HIA-KBHIS Committee, A Cultural, Spiritual, and Health Impact Assessment of Oil Drilling Operations in the Navajo Nation Area of Counselor, Torreon, and Ojo Encino Chapters (July 15, 2021) (Setbacks discussed at pp. 10-11; harmful air pollutant emissions, local air monitoring results, and variables affecting exposures and impacts discussed at pp. 13-23).

[188] 88 Fed. Reg. 47590.

[189] *Id.*

[190] *See, e.g.,* **Exhibit 39,** Raul Lejano et al. (2022) *The Hidden Disequities of Carbon Trading: Carbon Emissions, Air Toxics, and Environmental Justice*. Front. Environ. Sci. Vol. 8 Article 593014 doi: 10.3389/fenvs.2020.593014, citing **Exhibit 40,** Carpenter, A., and Wagner, M. (2019). *Environmental justice in the oil refinery industry: a panel analysis across United States counties*. Ecol. Econ. 159, 101–109; *see also* Rachel Morello-Frosch et al., *Understanding the Cumulative Impacts of Inequalities in Environmental Health: Implications for Policy*, 30 HEALTH AFFAIRS 879 (May 2011), Exhibit 29.

at least one oil and gas well. More than a third of these residents, totaling 1.8 million people, also live in areas most burdened by other environmental pollution.[191]

Further, the climate change impacts of oil and gas activity are felt far beyond the source of greenhouse gas (GHG) emissions, and they, too, tend to fall most heavily on people and communities already overburdened by environmental, social, and structural inequities and harms.[192] Concentrating oil and gas leasing and drilling operations in certain areas will not reduce these GHG emissions and their corresponding impacts on health, climate, and environmental justice. Oil and gas wells also emit air toxics like benzene, dioxin, and ammonia, that can profoundly harm human health, even in small concentrations.[193]

Even "short-term" or seemingly "minor" emissions and exposures from any one project can have devastating cumulative and long-term effects, particularly when combined with exposures to other pollution sources, from legacy oil and gas wells to coal-fired power plants to toxic waste dumps.[194] Further concentrating new leasing and development in already-overburdened areas will exacerbate exposures to harmful pollutants and contribute to adverse, disproportionate, and cumulative risks and impacts.[195] By encouraging the concentration of oil and gas leasing and operations in already underserved and overburdened-communities, the proposed rule risks creating or worsening "sacrifice zones"[196] and *increasing* adverse impacts to communities, contrary to BLM's stated intent.

We also emphasize the importance of just and equitable development and implementation of the rule overall, and of related BLM planning, leasing, and permitting decisions. BLM should proactively solicit the knowledge, experience, and voices of those in frontline and "underserved" communities and ensure that these communities' perspectives are meaningfully incorporated into and actively shape planning and decision-making. This demands that BLM shift away from transactional public involvement periods to more durable, trust- and respect-based relationships with communities that is forged over time. In any event, where available, BLM should take into account community-driven and localized

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[191] **Exhibit 41,** NRDC [Natural Resources Defense Council], Drilling in California: Who's At Risk? October 2014. *See* EDF, New Mexico Oil and Gas Data tool, https://www.edf.org/nm-oil-gas/, (interactive tool/map available by clicking "explorer" tab) for one excellent resource for mapping proximity of homes to wells, along with other environmental-justice-relevant data, specifically in New Mexico. We recommend that BLM use this and other available tools for taking a hard look at localized cumulative health risks and impacts and environmental justice impacts.

[192] *See, e.g.,* EPA. 2021. Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts. U.S. Environmental Protection Agency, EPA 430-R-21-003, https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.

[193] Lejano et al 2020, Exhibit 39, citing **Exhibit 42,** Walch, Ryan (2018). *The effect of California's carbon cap and trade program on co-pollutants and environmental justice: evidence from the electricity sector.* Environment PM 2, 440–448.

[194] For example, even short-term exposure to ozone causes multiple negative respiratory effects, from inflammation of airways to more serious respiratory effects that can lead to use of medication, absences from school and work, hospital admissions, emergency room visits, chronic obstructive pulmonary disease ("COPD"), and even premature death. *See, e.g.*, **Exhibit 43,** National Research Council, *Link Between Ozone Air Pollution and Premature Death Confirmed,* (April 2008), http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12198. *See also* National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65292 (Oct. 26, 2015*). See also* Morello-Frosch et al., Exhibit 29; Lejano et al., Exhibit 39.

[195] *See* Morello-Frosch et al., Exhibit 29.

[196] *See* National Research Council (U. S.) Study Committee on the Potential for Rehabilitating Lands Surface Mined for Coal in the Western United States (1974), *Rehabilitation potential of western coal lands,* Cambridge, MA: Ford Foundation Energy Policy Project / Ballinger Pub. Co. pp. 85–86. ISBN 978-0-88410-331-8, https://archive.org/details/rehabilitationpo0000nati (designating certain areas, including part of the Greater Chaco, as "sacrifice zones").

health impact assessments (for example, the Counselor HIA-KBHIS) and relevant local health and demographic data as part of that just process.

3. Process Dynamics.

The "meaningful involvement" of those most affected by a proposed project, agency action or decision–particularly those experiencing historic and ongoing burdens of environmental exposures and impacts—is a key component of environmental justice. And it is essential to crafting the strongest possible rule and implementing it justly, equitably, and effectively. Existing U.S. federal law and policy, and BLM's own Instruction Memorandum on environmental justice, set minimum standards for what constitutes meaningful engagement by federal agencies with those in frontline and "environmental justice" communities, sovereign Tribal nations, and the broader public, and we urge the BLM to adhere to those standards in its relevant actions and decision-making.[197]

However, these minimum standards do not guarantee truly just processes or outcomes. We thus recommend that BLM abide by the following frameworks and guiding principles, and refer to the following additional recommendations and resources with respect to environmental and climate justice, meaningful involvement, meaningful Tribal consultation, and engagement with those in frontline communities:

- The Jemez Principles for Democratic Organizing[198]
- The White House Environmental Justice Advisory Council (WHEJAC) Recommendations[199]
- Executive Order 12898 on Environmental Justice[200]

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[197] *See, e.g.,* 40 C.F.R. § 1506.6 ("public involvement" provisions of the CEQ implementing regulations for the National Environmental Policy Act); 36 C.F.R. §§ 800.1-800.16 (regulations governing consultation and other components of Section 106 of the National Historic Preservation Act ("NHPA"); IM 2022-059.

[198] **Exhibit 44,** Jemez Principles for Democratic Organizing. Published online 1996, https://www.ejnet.org/ej/jemez.pdf. In December of 1996, the Southwest Network for Environmental and Economic Justice hosted a meeting in Jemez, New Mexico with the goal of "hammering out common understandings between participants from different cultures, politics, and organizations," and participants adopted the 6 "Jemez Principles" for Democratic Organizing. While the Jemez Principles often guide and help lay ground rules for relationships and processes among (and within) those in community-based groups, other NGOs, and coalitions, these principles have also guided the process surrounding the development, drafting, public comment, and revision of recently-introduced legislation, such as the Environmental Justice for All Act, H.R. 1705. https://www.congress.gov/bill/118th-congress/house-bill/1705/text?s=1&r=11. These principles could similarly contribute to more just, equitable processes, policies, and programs related to rule development and implementation. But, because they were originally drafted by and for frontline organizers, by their very nature they cannot simply be applied in a "top-down" way by BLM or other federal agencies. They can, however, help BLM develop a framework for engaging more meaningfully, equitably, and intersectionality with those in frontline and "environmental justice" communities, in rule development and implementation and otherwise.

[199] White House Environmental Justice Advisory Council (WHEJAC) Final Recommendations, https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf; *Id* at 79, 80, 81 (defining environmental justice, just treatment, and meaningful participation).

[200] https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf. https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf.

- Executive Order 14008, Tackling the Climate Crisis at Home and Abroad—in particular, Sections 219-223 related to environmental justice[201]

- Executive Order 13175, Consultation and Coordination With Indian Tribal Governments[202]

- Comments submitted by Environmental Defense Fund et al. to the Office of Information and Regulatory Affairs (OIRA) June 6, 2023, *Comments on Guidance Implementing Section 2(e) of the Executive Order of April 6, 2023 (Modernizing Regulatory Review)*, and the additional sources cited therein, including sources from frontline groups and environmental justice leaders, regarding best practices for community engagement and meaningful public participation.[203]

We also offer some concrete suggestions for facilitating, and removing barriers to, meaningful involvement and meaningful Tribal consultation in BLM meetings and comment processes related to this rule and its implementation (and in general), particularly for those in frontline communities. Barriers to meaningful involvement that BLM should keep in mind may include, but are not limited to:

- Language barriers, with no translator or interpreter.

- Difficulty with transportation to meetings, hearings, etc. (due to distance/time required for travel, lack of access to a personal vehicle and/or reliable, affordable public transportation).

- Lack of reliable internet for accessing and reviewing proposed rules and other relevant materials, submitting comments electronically, or attending virtual meetings/hearings.

- Prioritization of written comments over spoken word.

- Lack of appropriate translation and interpretation.

- Lack of information publicized via linguistically and culturally relevant, widely-accessible channels.

- Child care obligations/difficulty finding child care.

To help address these barriers, BLM should implement the following measures:

- Offer simultaneous interpretation and translation in the appropriate languages in all public meetings and, to the fullest extent possible, written documents and materials;

- Hold meetings in places that are accessible to members of frontline communities (this means accessible locations, and accessible facilities etc. for those individuals with

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[201] https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on- tackling-the-climate-crisis-at-home-and-abroad/.

[202] https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/26/memorandum-on-tribal-consultation-and-strengthening-nation-to-nation-relationships.

[203] **Exhibit 45,** Comments submitted by Environmental Defense Fund et al. to the Office of Information and Regulatory Affairs (OIRA) June 6, 2023, *Comments on Guidance Implementing Section 2(e) of the Executive Order of April 6, 2023 (Modernizing Regulatory Review)*, and the additional sources cited therein.

disabilities, the elderly, those without access to transportation, and those with child care needs);

- Provide opportunities for written and oral comment in a variety of fora;
- Provide linguistically and culturally appropriate and accessible public notice of opportunities for public comment and involvement; and
- Ensure that public comment periods allow sufficient time–including for those who do not engage with federal agencies regularly/as part of their jobs–for accessing, reviewing, and responding to relevant documents and materials.

If BLM ignores or excludes the very people and communities who are most affected by its decisions, the agency is not only denying *them* the fair treatment and meaningful involvement fundamental to environmental justice, but also depriving itself, and the general public, of invaluable knowledge and expertise that would enable better-informed and more transparent decision-making. Such informed decision-making requires extensive, meaningful public involvement throughout an agency's decision-making process—not just "input" on predetermined agendas.[204] Indeed, "environmental justice is not merely a box to be checked."[205]

CONCLUSION

In sum, we appreciate this opportunity to contribute to BLM's rulemaking effort. While we largely welcome the fiscal reforms contemplated by the proposed rule, BLM can and should go much farther to address interwoven climate, ecological, and biodiversity crises as well as the harm shouldered by underserved and overburdened communities. BLM should take this opportunity to address the complications and contradictions inherent in perpetuating the federal public lands oil and gas program in the face of these crises. Such a frank reckoning will serve the public interest far better than BLM's current, siloed approach. BLM has effectively created a framework with the proposed rule that allows for the incorporation of these issues without substantial changes to the rule's content or structure. Implemented in a manner consistent with other proposed rules, including BLM's draft Public Lands Rule, the proposed rule has great potential to ensure that BLM can implement the federal onshore oil and gas program in a manner that is protective of the government, taxpayers, frontline communities, and the environment.

The approach outlined in these comments, combined with the specific changes suggested to a subset of provisions, represents a holistic "lifecycle approach" that fits squarely within the existing rule structure BLM has proposed. It is predicated on the untenability of a "business as usual" approach. BLM should, in effect, pair the fiscal reforms contained in the proposed rule with mutually-reinforcing climate and conservation-centered reforms.

We welcome questions and further conversation.

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[204] 40 C.F.R. § 1506.6; *see also* White House Environmental Justice Advisory Council (WHEJAC) Final Recommendations, at 79, 80, 81 (defining environmental justice, just treatment, and meaningful participation), https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf.

[205] *Friends of Buckingham v. State Air Pollution Control Board, 947 F.3d 68, 92 (4th Cir. 2020)* 947 F.3d at 92.

Appendix A, Exhibits[1]

Exhibit 1, *Earth had hottest three-month period on record, with unprecedented sea surface temperatures and much extreme weather.* World Meteorological Organization News Release September 6, 2023, *available at* https://public.wmo.int/en/media/press-release/earth-had-hottest-three-month-period-record-unprecedented-sea-surface.

Exhibit 2, *Global temperatures set to reach new records in next five years*, World Meteorological Organization, May 17, 2023. *Available at*: https://public.wmo.int/en/media/press-release/global-temperatures-set-reach-new-records-next-five-years#:~:text=There%20is%20a%2066%25%20likelihood,be%20the%20warmest%20on%20record

Exhibit 3, Letter to Secretary Haaland, "Recommendations for Scope and Criteria for Review of the Federal Fossil Fuel Programs," April 14, 2021.

Exhibit 4, Merrill, M.D., Sleeter, B.M., Freeman, P.A., Liu, J., Warwick, P.D., and Reed, B.C., Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14: U.S. Geological Survey Scientific Investigations Report 2018–5131, 31 (2018).

Exhibit 5, Albuquerque Journal, *New Mexico faces a budget abyss if oil and gas goes bust* (Jan. 30, 2023).

Exhibit 6, Comments of the Western Environmental Law Center submitted on behalf of Amigos Bravos, Center for Biological Diversity, Citizens Caring for the Future, Citizens for a Healthy Community, Conservation Voters New Mexico, Montana Environmental Information Center, Sierra Club, Western Watersheds Project, WildEarth Guardians, and Wilderness Workshop, dated July 5, 2023.

Exhibit 7, Comments on the Council on Environmental Quality's National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, dated April 10, 2023.

Exhibit 8, SEI, IISD, ODI, E3G, and UNEP, *The Production Gap Report: 2020 Special Report* (2021).

Exhibit 9, Stockholm Environment Institute, *The Production Gap: The Discrepancy Between Countries' Planned Fossil Fuel Production and Global Production Levels Consistent with Limiting Warming to 1.5°C or 2.0°C* (2019), https://www.sei.org/publications/the-production-gap-report/.

Exhibit 10, SEI, IISD, ODI, E3G, and UNEP. (2021). The Production Gap Report 2021, http://productiongap.org/2021report.

Exhibit 11, Welsby, D., Price, J., Pye, S. et al. *Unextractable fossil fuels in a 1.5 °C world.* Nature 597, 230–234 (2021) (if 60% of remaining oil and gas is left in situ, we will retain a 50% chance of limiting warming to 1.5°C).

[1] *Exhibits sent via FedEx, Tracking ID: 784066368456*

Exhibit 12, Calverley, D. and Anderson, K. (2022), *Phaseout pathways for fossil fuel production within Paris-compliant carbon budgets*. Tyndall Centre, University of Manchester.

Exhibit 13, United Nations Environment Programme (2022). Emissions Gap Report 2022: The Closing Window — Climate crisis calls for rapid transformation of societies. Nairobi. https://www.unep.org/emissions-gap-report-2022.

Exhibit 14, International Institute for Sustainable Development, *Navigating Energy Transitions: Mapping the Road to 1.5° C* at xi, October 2022. Additional development also risks leaving stranded assets, as fields will need to be decommissioned before the end of their lifespan. *Id.*

Exhibit 15 and **16**, IPCC, 2021: Summary for Policymakers and Technical Summary.

Exhibit 17, In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [MassonDelmotte et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3−32, doi:10.1017/9781009157896.001.

Exhibit 18, IPCC, 2022*: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [P.R. Shukla et al. (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.

Exhibit 19, IPCC, 2022: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner et al. (eds.)]. Cambridge University Press. In Press.

Exhibit 20, IPCC 2023: *Synthesis Report of the IPCC Sixth Assessment Report* [Paola Arias et al. (eds.)], Cambridge University Press.

Exhibit 21, Thomas Sansonetti & William Murray, A Primer on the Federal Oil and Gas Leasing Reform Act of 1987 and its Regulations, 25 Land & Water L. Rev. 375, 388 n.112 (1990).

Exhibit 22, Dominic C. DiGiulio et al., *Chemical Characterization of Natural Gas Leaking from Abandoned Oil and Gas Wells in Western Pennsylvania*, 8 ACS OMEGA 19443 (2023), *available at* https://pubs.acs.org/doi/pdf/10.1021/acsomega.3c00676.

Exhibit 23, Josh Woda, et al., *Methane concentrations in streams reveal gas leak discharges in regions of oil, gas, and coal development*, 737. SCIENCE OF THE TOTAL ENVIRONMENT, 140105 (2020), *available at* https://www.sciencedirect.com/science/article/abs/pii/S0048969720336251?fr=RR-2&ref=pdf_download&rr=7f521def4fba2bc4.

Exhibit 24, "Benzene," U.S. EPA's "Integrated Risk Information System, available at https://iris.epa.gov/static/pdfs/0276_summary.pdf (last visited August 22, 2023).

Exhibit 25,
https://ohioauditor.gov/auditsearch/Reports/2022/Ohio_Department_of_Natural_Resources_22_Performance-Franklin_FINAL.pdf.

Exhibit 26,
https://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/AbandonedOrphanWells/IIJA/PA_HANDLING_OF_IIJA_FOR_OA_WELLS.docx.

Exhibit 27, Raimi D., Krupnick A. J., Shah J.-S., Thompson A. (2021). Decommissioning orphaned and abandoned oil and gas wells: New estimates and cost drivers. Environmental Science & Technology, 55(15), 10224–10230. https://doi.org/10.1021/acs.est.1c02234.

Exhibit 28, Physicians for Social Responsibility and Concerned Health Professionals of NY, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking, 8th Edition (2022).

Exhibit 29, Rachel Morello-Frosch et al., *Understanding the Cumulative Impacts of Inequalities in Environmental Health: Implications for Policy*, 30 HEALTH AFFAIRS 879 (May 2011).

Exhibit 30, Susan Kinnear et al., *The Need to Measure and Manage the Cumulative Impacts of Resource Development on Public Health: An Australian Perspective* (May 15, 2013), Available at https://www.intechopen.com/books/current-topics-in-public-health/the-need-to-measure-and-manage-the-cumulative-impacts-of-resource-development-on-public-health-an-au (https://www.intechopen.com/books/current-topics-in-public-health/the-need-to-measure-and-manage-the-cumulative-impacts-of-resource-development-on-public-health-an-au.

Exhibit 31, Jill Johnston & Lara Cushing, *Chemical Exposures, Health, and Environmental Justice in Communities Living on the Fenceline of Industry*, 7 Current Environmental Health Reports, 48-57 (2020).

Exhibit 32, Lisa M. McKenzie *et al.*, *Birth Outcomes and Maternal Resident Proximity to Natural Gas Development in Rural Colorado*, 122 ENVIRONMENTAL HEALTH PERSPECTIVES 412 (April 2014) [Hereinafter McKenzie et al., *Birth Outcomes*).

Exhibit 33, Janet Currie *et al., Hydraulic Fracturing and Infant Health: New Evidence from Pennsylvania*, 3 SCIENCE ADVANCES e1603021(Dec. 13, 2017).

Exhibit 34, Ellen Webb *et al., Potential Hazards of Air Pollutant Emission from Unconventional Oil and Natural Gas Operations on the Respiratory Health of Children and Infants*, 31 REV. ENVIRONMENTAL HEALTH 225-243 (Jun. 1, 2016), at 236.

Exhibit 35, Kathy V. Tran et al., *Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006–2015 Births*, 128 Environmental Health Perspectives, 067001 (2020).

Exhibit 36, Stephanie A. Malin, *Depressed democracy, environmental injustice: Exploring the negative mental health implications of unconventional oil and gas production in the United States*, 70 Energy Research & Social Science, 101720 at 2 (2020).

Exhibit 37, *Meleah* D. Boyle et al., Hazard Ranking Methodology for Assessing Health Impacts of Unconventional Natural Gas Development and Production: The Maryland Case Study, 11 PLOS ONE e0145368 (Jan. 4, 2016).

Exhibit 38, Counselor HIA-KBHIS Committee, A Cultural, Spiritual, and Health Impact Assessment of Oil Drilling Operations in the Navajo Nation Area of Counselor, Torreon, and Ojo Encino Chapters (July 15, 2021).

Exhibit 39, Raul Lejano et al. (2022) *The Hidden Disequities of Carbon Trading: Carbon Emissions, Air Toxics, and Environmental Justice*. Front. Environ. Sci. Vol. 8 Article 593014 doi: 10.3389/fenvs.2020.593014.

Exhibit 40, Carpenter, A., and Wagner, M. (2019). *Environmental justice in the oil refinery industry: a panel analysis across United States counties*. Ecol. Econ. 159, 101–109.

Exhibit 41, NRDC [Natural Resources Defense Council], Drilling in California: Who's At Risk? October 2014.

Exhibit 42, Walch, Ryan (2018). *The effect of California's carbon cap and trade program on co-pollutants and environmental justice: evidence from the electricity sector*. Environment PM 2, 440–448.

Exhibit 43, National Research Council, *Link Between Ozone Air Pollution and Premature Death Confirmed,*
(April 2008), available at:
http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12198.

Exhibit 44, Jemez Principles for Democratic Organizing. Published online 1996.

Exhibit 45, Comments submitted by Environmental Defense Fund et al. to the Office of Information and Regulatory Affairs (OIRA) June 6, 2023, *Comments on Guidance Implementing Section 2(e) of the Executive Order of April 6, 2023 (Modernizing Regulatory Review)*, and the additional sources cited therein.