

**Center for Biological Diversity, Citizens for Clean Energy, Earthjustice, Friends of the Earth,
Grand Canyon Trust, Montana Environmental Information Center, Sierra Club, Southern Utah
Wilderness Alliance, Utah Physicians for a Healthy Environment, Wilderness Workshop,
Western Environmental Law Center, WildEarth Guardians**

October 5, 2021

Hon. Debra Haaland
Secretary of the Interior
United States Department of the Interior
1849 C Street NW
Washington, DC 20240

Exhibits mailed to:
National Coal Program Review
Thomas Huebner
BLM Wyoming State Office
5353 Yellowstone Road
Cheyenne, WY 82009

Re: Comments on BLM's Notice of Intent to Conduct a Review of the Federal Coal Leasing Program

**Comments submitted via email: BLM_HQ_320_CoalProgramReview@blm.gov
Exhibits submitted to BLM via U.S.P.S.**

Dear Secretary Haaland,

On behalf of Center for Biological Diversity, Citizens for Clean Energy, Earthjustice, Friends of the Earth, Grand Canyon Trust, Montana Environmental Information Center, Sierra Club, Southern Utah Wilderness Alliance, Utah Physicians for a Healthy Environment, Western Environmental Law Center, WildEarth Guardians, and Wilderness Workshop and our millions of members and supporters, we appreciate the opportunity to comment on the Bureau of Land Management's (BLM's) upcoming review of the federal coal leasing program. We urge to you to take strong and immediate action to curb the devastating climate, public health, and environmental justice impacts of the federal coal program. President Biden has promised strong climate action, in line with scientific consensus on the need to rapidly phase out fossil fuels from the world's economies. To fulfill that promise, BLM must end the practice of leasing publicly owned lands and minerals to fossil fuel companies that have no intention of paying for the climate damage they cause. Any other approach to managing the federal coal program would amount to a deliberate choice to exacerbate the climate crisis and extend the human suffering it has already inflicted on families and communities in the United States and elsewhere.

In a recent speech to the United Nations, President Biden laid out the choice facing world leaders: “Will we meet the threat of challenging climate — the challenging climate we’re all feeling already ravaging every part of our world with extreme weather? Or will we suffer the merciless march of ever-worsening droughts and floods, more intense fires and hurricanes, longer heatwaves and rising seas?”¹ If the Biden administration is serious about tackling climate change, it cannot continue to lease publicly owned lands and minerals to fossil fuel companies. A business-as-usual approach to coal leasing on public lands would consign millions of Americans to losing their homes and communities to precisely that “merciless march” of rising seas, tropical storms, and devastating wildfires.

It has been more than six years since then-Interior Secretary Sally Jewell promised Americans “an open and honest conversation” about the federal coal leasing program.² Because the Trump administration rescinded the coal leasing moratorium that Secretary Jewell put in place and cancelled the programmatic environmental impact statement (PEIS) process that was underway, we are still waiting for that conversation. Any review of the federal coal program must recognize that today we are in a climate crisis, that the world’s leading scientists tell us we must reduce and then eliminate greenhouse gas emissions as rapidly as possible. And further, continuing the choice to lease publicly owned lands and minerals to fossil fuel companies is incompatible with U.S. climate objectives, contrary to the public interest, and would lock in decades of climate pollution at the very moment we must take strong action to reduce emissions. As President Biden noted when pausing oil and gas leasing, “[t]here is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory.”³

The administration’s strong words on climate change must be met with meaningful action to dramatically reduce emissions as quickly as possible. Since Secretary Jewell initially paused federal coal leasing, new data, updated climate science, and real-world experiences have demonstrated that we cannot afford further inaction. Armed with this new information, the Biden administration must not simply return to coal policies of the Obama administration but must go further than President Obama in protecting public health and the climate from the impacts of coal leasing. The six years since the 2015 Paris Agreement have been the six hottest on record.⁴ The most recent Intergovernmental Panel on Climate Change report, *Climate*

¹ White House, *Remarks by President Biden Before the 76th Session of the United Nations General Assembly* (Sept. 21, 2021), (“Biden Remarks”) <https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/09/21/remarks-by-president-biden-before-the-76th-session-of-the-united-nations-general-assembly/>. Attached as Exhibit 1.

² U.S. Department of the Interior, Press Release, *Secretary Jewell Launches Comprehensive Review of Federal Coal Program* (Jan. 15, 2016), available at <https://www.doi.gov/pressreleases/secretary-jewell-launches-comprehensive-review-federal-coal-program>. Attached as Exhibit 2.

³ President Biden, Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, 86 Fed. Reg. 7619 (Jan. 27, 2021) (“E.O. 14008”), available at <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>. Attached as Exhibit 3.

⁴ National Oceanic Atmospheric Administration, *More Near Record Warm Years Are Likely on the Horizon* (last updated Jan. 29, 2021), <https://www.ncei.noaa.gov/news/projected-ranks> (last visited Sept. 27, 2021). Attached as Exhibit 4.

Change 2021: The Physical Science Basis, considered five greenhouse gas (GHG) emission scenarios ranging from very low to very high and concluded that warming of at least 1.5 °C – the goal of the 2015 Paris Agreement – *is likely unavoidable under every scenario*.⁵

Over the last five years, the pace and severity of storms has increased dramatically, with real world experiences in the United States matching the urgency in the scientific literature. According to the National Oceanic Atmospheric Administration, since 1980, the U.S. has averaged eight separate billion dollar storms a year; but since 2016 we have averaged more than 16 distinct billion dollar storms annually.⁶ According to the California Department of Forestry and Fire Protection, six of the seven largest wildfires in California’s history have occurred *since the start of 2020*.⁷ The wildfires this year in the western U.S. burned an area larger than Delaware and Rhode Island combined, impacting air quality in states as far away as Vermont and Maine.⁸

Against this backdrop, our millions of members and supporters urge President Biden and Secretary Haaland to take the strongest action possible to guard against the climate crisis. This requires the Biden administration to make a choice to leave fossil fuels in the ground. To reduce our emissions as President Biden has promised – to 50 percent below 2005 levels by 2030 and to net zero by 2050⁹ – there is no more room for continued fossil fuel development, and certainly none on federal lands.

Below, we identify key aspects of the federal coal program that must be addressed, and identify the analytic tools the agency should use to analyze the environmental, public health, and environmental justice impacts of federal coal leasing. In addition to addressing the scope of the upcoming review, we also outline specific, time-critical steps the Biden administration can take – right now – now to curb the climate impacts of the federal coal program. These steps, beginning with a pause on *all* new leases and lease modifications during the review, are well-supported by BLM’s prior, extensive analyses and need not wait for further evaluation in a

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis*, Summary for Policy Makers, at SPM-18 (2021)

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (last visited September 27, 2021) (“IPCC, AR 6, Summary for Policy Makers”). Summary for Policy Makers. Attached as Exhibit 5.

⁶ National Oceanic Atmospheric Administration, *Billion Dollar Weather and Climate Disasters: Overview*, <https://www.ncdc.noaa.gov/billions/> (last visited Sept. 25, 2021). Attached as Exhibit 6.

⁷ Cal Fire, *Top 20 Largest California Wildfires* (last updated Sept. 27, 2021), https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf. Attached as Exhibit 7.

⁸ Aya Elamroussi, *Wildfires have burned a combined area the size of Delaware and Rhode Island – and then some*, (July 28, 2021), <https://www.cnn.com/2021/07/28/weather/western-wildfires-wednesday/index.html> (last visited September 26, 2021). Attached as Exhibit 8.

⁹ White House, *Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies* (Apr. 22, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/> (last visited September 27, 2021) (White House Fact Sheet”). Attached as Exhibit 9.

comprehensive review. Each of these near-term steps would benefit American taxpayers, protect the climate and public lands, and ensure that BLM’s decisions regarding the federal coal program do not conflict with the Biden administration’s clear climate agenda.

I. BLM’s 2017 Scoping Report and Preceding Public Process Provide a Solid Foundation for Coal Program Reforms.

BLM has already engaged in substantial public process and analyses that lay the groundwork for essential near-term reform of the federal coal program with the goal of phasing out federal coal-production altogether. BLM’s further review of the program should acknowledge and draw on that process and information gathered. Importantly, not only can this administration pick up where the Obama administration left off, this administration must accelerate the pace of reform to meet the necessity of immediate greenhouse gas emissions reductions to avert the worst-case climate-change scenario.

A. Secretarial Order 3338, its Reversal, and Federal District Court Litigation Challenging the Trump-Era Coal-Leasing Policy.

Previous public processes and analyses provide a strong foundation for BLM’s further action and review. Beginning in the summer of 2015, then-Secretary of the Interior Sally Jewell held public listening sessions on the federal coal program, which generated around 94,000 public comments.¹⁰ As a result of that process, as well as evolving science and policy considerations, Secretary Jewell on January 15, 2016 issued Secretarial Order 3338 (“SO 3338”), which directed BLM to prepare a programmatic EIS (“PEIS”) to evaluate regulatory reforms to help the Interior Department meet its obligation “to ensure conservation of the public lands, the protection of their scientific, historic, and environmental values, and compliance with applicable environmental laws,” as well as its “statutory duty to ensure a fair return to the taxpayer.”¹¹ Under SO 3338, BLM was required to consider in the PEIS, at a minimum: (a) how, when, and where to lease coal; (b) fair return to the American public for federal coal; (c) the climate change impacts of the federal coal program, and how best to protect the public lands from climate change impacts; (d) the externalities related to federal coal production, including environmental and social impacts; (e) whether lease decisions should consider whether the coal would be for export; and (f) the degree to which federal coal fulfills the energy needs of the United States.¹²

While commencing a programmatic review of federal coal leasing, Secretary Jewell determined it was appropriate to suspend new coal leasing while the comprehensive review was underway to avoid “locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than

¹⁰ U.S. Dep’t of Interior, Federal Coal Program, Programmatic Environmental Impact Statement – Scoping Report, Volume I at ES-3 (Jan. 2017) (“2017 Scoping Report”). Volume I attached as Exhibit 10.

¹¹ Secretarial Order No. 3338, Discretionary Programmatic Environmental Impact Statement to Modernize the Federal Coal Program (Jan. 15, 2016). Attached as Exhibit 11.

¹² *Id.* at 7-8.

optimal.”¹³ Although mining under existing leases would continue, the moratorium prevented BLM, subject to certain exceptions, from processing new lease applications. In explaining the need for the moratorium, Secretary Jewell stated, “[g]iven the serious concerns raised about the federal coal program and the large reserves of undeveloped coal already under lease to coal companies, it would not be responsible to continue to issue new leases under outdated rules and processes.”¹⁴

In March 2016, BLM invited public comments as part of the NEPA “scoping” process for the PEIS “to assist the BLM in identifying and refining the issues and policy proposals to be analyzed in depth and in eliminating from detailed study those policy proposals and issues that are not feasible or pertinent.”¹⁵ BLM also took the first step toward engaging tribal nations affected by federal coal leasing, including the Northern Cheyenne Tribe, by sending letters inviting government-to-government consultation.¹⁶ During the spring and summer of 2016, BLM held public meetings and accepted more than 200,000 public comments on the impacts of and alternatives to federal coal leasing.¹⁷

On January 11, 2017, BLM released a report detailing the agency’s initial conclusions based on its review of the public comments and expert analyses. The 2017 Scoping Report concluded “that modernization of the Federal coal program is warranted.”¹⁸ Specifically, “[t]he three general areas requiring modernization are: fair return to Americans for the sale of their public coal resources; impact of the program on the challenge of climate change and on other environmental issues; and efficient administration of the program in light of current market conditions including impacts on communities.”¹⁹ Consistent with SO 3338, the 2017 Scoping Report retained the moratorium on most new coal leasing during the review process.²⁰

Just over two months later, following the inauguration of President Trump, newly confirmed Secretary of the Interior Ryan Zinke on March 29, 2017 signed Secretarial Order 3348 (“SO 3348”), terminating the ongoing PEIS process and ending the moratorium. The same day, the Northern Cheyenne Tribe and conservation organizations—including many of the organizations submitting these comments—challenged the government’s action under the National Environmental Policy Act (“NEPA”) and the Administrative Procedures Act in the U.S. District Court for the District of Montana.

¹³ *Id.* at 8.

¹⁴ Q&A: Department of the Interior Federal Coal Reforms, at 4 (Jan. 15, 2016). Attached as Exhibit 36.

¹⁵ Notice of Intent, 81 Fed. Reg. 17,720, 17,727 (Mar. 30, 2016); 40 C.F.R. § 1501.7 (scoping is “an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action”).

¹⁶ See 2017 Scoping Report, at 3-5.

¹⁷ *Id.* at 4-3.

¹⁸ *Id.* at ES-4.

¹⁹ *Id.*

²⁰ SO 3338, at 8-9; 2017 Scoping Report, at 6-52.

On April 19, 2019, the court sided with the plaintiffs, ruling that the government violated its NEPA obligations by failing to engage in any environmental review of SO 3348. *Citizens for Clean Energy v. U.S. Dep't of Interior*, 384 F. Supp. 3d 1264 (D. Mont. 2019). The court concluded that the plaintiffs raised “a substantial question as to whether the project may cause significant environmental impacts,” and “[t]he Zinke Order constitutes a major federal action sufficient to trigger NEPA.” *Id.* at 1279 (citation omitted). Although the court did not direct BLM to perform any specific type of NEPA analysis, the court recognized that “[i]f Federal Defendants determine that an EIS would not be necessary ... Federal Defendants must supply a ‘convincing statement of reasons’ to explain why the Zinke Order’s impacts would be insignificant.” *Id.* at 1282 (citation and quotation omitted).

In response to the Court’s order, BLM in February 2020 finalized a short environmental assessment (“EA”).²¹ In the EA, BLM expressly disavowed any analysis of the consequences of opening all federal public land to coal leasing. Specifically, the EA stated that “[t]he BLM considered, but did not analyze in detail, the effects resumption of normal leasing procedures would have on leasing and evaluation of its potential effects because this issue does not relate to the purpose and need or inform a question of significance.”²² Instead, the EA considered the environmental impacts of just four coal leases issued between March 2017 (when the Zinke Order terminated the moratorium) and March 2019 (when BLM presumed the moratorium would have ended in the absence of the Zinke Order).²³ For those four leases, the EA evaluated the environmental effects of issuing the leases “between 1 and 11 months earlier than they could have been in the absence of the Zinke Order.”²⁴ BLM did not evaluate any future impacts of federal coal leasing or reform options to avoid or mitigate those impacts. Based on the EA, on February 26, 2020, BLM issued a “Finding of No Significant Impact” (“FONSI”), concluding BLM’s environmental review process.

Because the February 2020 EA did not evaluate the future impacts of federal coal leasing, the Northern Cheyenne Tribe and conservation organizations—along with the state attorneys general for California, New Mexico, New York, and Washington—filed a supplemental complaint challenging the Department and BLM’s 2017 decision to resume federal coal leasing. In their summary judgment brief filed in May 2021, the plaintiffs argued that BLM’s EA violated NEPA and urged the court to remedy the violation by reinstating the coal-leasing moratorium.

The litigation is presently stayed until January 13, 2022, while BLM undertakes the present review. Before that time, BLM must decide whether to pursue and defend the Trump-

²¹ DOI, BLM, *Lifting the Pause on the Issuance of New Federal Coal Leases for Thermal (Steam) Coal*, Environmental Assessment (Feb. 25, 2020), at https://eplanning.blm.gov/public_projects/nepa/122429/20013717/250018737/Lifting_the_Pause_for_Coal_Final_EA.pdf. Attached as Exhibit 12.

²² *Id.* at 14.

²³ *Id.* at 18.

²⁴ *Id.* at 14.

era coal-leasing policy or commence the necessary reforms to make such defense unnecessary.²⁵

B. BLM’s Preliminary Analysis Supports Critical Coal-Program Reforms.

As discussed more fully in the sections that follow, BLM’s own prior analyses documented in the 2017 Scoping Report support critical reforms to the federal coal program to avoid or reduce harm from new and existing leases, and evolving climate science and policy only underscore the need for urgent action. BLM said about its 2017 Scoping Report that it “is the result of the BLM’s review and consideration of the materials and analyses received through the listening sessions, public scoping process, or otherwise available. Based on this review, it appears that modernization of the Federal coal program is warranted.”²⁶ Two primary areas Federal Defendants singled out as “requiring modernization” were: (1) addressing the “impact of the program on the challenge of climate change;” and (2) adopting measures to ensure a “fair return to Americans for the sale of their public coal resources.”²⁷ Further, “there is a need for program reform to better protect the nation’s other natural resources (e.g., air, water, and wildlife).”²⁸ While the Scoping Report identified numerous potential reform options, the sum of the report supports increasing the royalty rate for existing leases, basing any new leasing on a carbon budget that reflects national climate policy and evolving science, and developing funding and programs to assist communities that may experience economic impacts from a transition away from coal.²⁹

Importantly, while BLM’s prior analysis supports near-term reforms, it is equally clear that failure to act expeditiously is not an option. In 2017, BLM stated that “[climate] assessments and observed changes make it clear that reducing emissions of greenhouse gases across the globe is necessary in order to avoid the worst impacts of climate change, and underscore the urgency of reducing emissions now.”³⁰ Phasing out federal coal production is a necessary step toward meeting this imperative, where BLM acknowledged both that “reducing greenhouse gas emissions from coal use worldwide is critical to addressing climate change” and “the Federal coal program is a significant component of overall US coal production.”³¹ To ensure that federal coal policy aligns with federal climate policy, as well as BLM’s prior analysis, we urge BLM to commence needed reforms.

²⁵ Interior Secretary Deborah Haaland in April 2021 issued an order purporting to revoke the Zinke Order; however, the Interior Department clarified that it was not reinstating the moratorium or discontinuing coal leasing. Secretarial Order 3398 (April 16, 2021), at https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3398-508_0.pdf. Attached as Exhibit 13. Thus, the impacts of the Trump administration’s 2017 decision to revoke the moratorium and continue leasing remain in effect and BLM may continue to issue new leases.

²⁶ 2017 PEIS Scoping Report, at ES-4.

²⁷ *Id.*

²⁸ *Id.* at 6-4.

²⁹ *Id.* ES-9 to ES-11 (describing “Possible Option Combination Package #3”).

³⁰ 2017 PEIS Scoping Report, at 5-52.

³¹ *Id.* at 6-4.

II. BLM Should Take Immediate Steps to Address Harm from Federal Coal Leasing That Do Not Require the Completion of BLM’s Planned Review of the Federal Coal Program.

BLM has ready tools to reduce the negative impacts of federal coal production immediate, with the target of phasing out federal coal production altogether as necessary to avert the most catastrophic impacts of climate change. As discussed above, BLM has a solid foundation for immediate coal program reforms to reduce or eliminate the climate and non-climate impacts of federal coal production preliminarily analyzed in the 2017 Scoping Report and vetted through the preceding public processes. While we support BLM’s further review of aspects of the program—including the consideration of the program’s greenhouse gas emissions as a component of all such emissions from federal fossil fuels—BLM can and should take actions in the near term to reduce the climate change impacts of federal coal production at the same time it studies longer-term measures to eliminate those impacts. Thus, we urge the BLM to take the following immediate actions that do not require additional study in a comprehensive review:

1. Pause all new leases and lease modifications during the upcoming review;
2. Cancel all leases illegally approved under the Trump Administration and invalidated by federal courts, including the Alton coal lease in Utah;
3. Incorporate the social cost of carbon and social cost of methane into the royalty rate for existing federal coal leases as they come up for 10-year renewals;
4. Deny all pending and future requests for royalty relief as improper fossil fuel subsidies.

A. The Secretary Should Pause Federal Coal Leasing as an Interim Step Toward Ending Leasing.

Consistent with the Secretary’s clear statutory and regulatory authority, we urge the Secretary to immediately pause federal coal leasing as an interim step to ending all fossil fuel leasing. As discussed below, pausing federal coal leasing is essential to prevent locking in harmful and avoidable climate and non-climate impacts from mining and burning federal coal even while the Administration works on a longer-term plan to winding down the federal coal-leasing program.

Continuing to lease coal from public lands is fundamentally incompatible with the urgent action required to combat climate change. Indeed, the systemic flaws in the federal coal program that prompted the Obama Administration in 2016 to impose a moratorium and review of the coal program still persist today: leasing publicly-owned coal is inconsistent with U.S. climate commitments, which have only grown stronger under President Biden; coal leases fail to ensure a fair return for American taxpayers; and coal mining from public lands continues to impose significant public health and climate externalities on the American people.³² Unfortunately, the Obama administration ran out of time to make enduring changes to address these problems and, just one year into the study of needed reforms, then-Secretary Zinke rescinded the moratorium.³³

In April 2021, Secretary Haaland issued Order (SO) 3398 purporting to revoke the Zinke Order.³⁴ SO 3398 identified the Zinke Order (among others) as inconsistent with the policies set forth President’s Executive Order 13990, entitled “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,” and required the Assistant Secretary to submit a report within 60 days (i.e., by June 15, 2021) identifying a plan and timeline to reverse or amend the policies embodied in the Zinke Order.³⁵ To date, however, all of the harm done by the Zinke Order – namely, lifting the moratorium and allowing mine expansions such as Alton to go forward – still exists. From March 2017 through today, BLM continues to lease public coal. And to our knowledge, the Assistant Secretary for Land and Minerals Management has not yet complied with the direction to prepare a plan for reversing or amending the Trump administration’s coal-leasing policy.

Consistent with BLM’s prior analysis and the direction in SO 3398 and EO 13990, the Secretary should pause new leasing as an immediate first step toward addressing the harm of federal coal-leasing. Further, in reinstating a coal-leasing pause, the Secretary should eliminate the exceptions in Section 6 of Secretary Jewell’s order, and thereby preclude emergency leasing, 43 C.F.R. § 3425.1-4, and leases for which a record of decision previously issued but was vacated by a federal court. Failing to eliminate these exceptions at this point would unacceptably and unnecessarily lock in harmful impacts from a significant amount of federal coal, and would ignore the recent science that has emerged since 2016 demonstrating the urgency of the climate crisis.

The Secretary has clear statutory and regulatory authority to immediately pause, and eventually end, federal coal leasing. Under the Mineral Leasing Act of 1920, 30 U.S.C. § 181 et seq., and the Federal Coal Leasing Amendments Act of 1976 (“FCLAA”), Public Law 94-377, 90 Stat. 1083 (Aug. 4, 1976) (codified at 30 U.S.C. § 181 et seq.), the Secretary of the Interior has broad authority to administer the federal coal-leasing program. *See* 30 U.S.C. § 201(a)(1). Pursuant to this authority, the Secretary of the Interior has significant discretion to establish

³² SO 3338, *supra* note 11.

³³ Secretarial Order 3348, “Concerning the Federal Coal Moratorium” (Mar. 29, 2017). Attached as Exhibit 14.

³⁴ SO 3398, *supra* note 25.

³⁵ *Id.*

the terms of federal coal leases. Each lease shall include “provisions ... necessary to insure the sale of the production of such leased lands to the United States and to the public at reasonable prices, for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare.” 30 U.S.C. § 187. Further, each lease must set annual rents and royalties, require diligent development, and “include such other terms and conditions as the Secretary shall determine.” *Id.* § 207(a), (b)(1). Federal coal leases have an initial duration of twenty years, and are renewable for ten-year terms thereafter. *Id.* § 207(a); 43 C.F.R. § 3451.1(a)(1). “[R]entals and royalties and other terms and conditions of the lease will be subject to readjustment at the end of its primary term of twenty years and at the end of each ten-year period thereafter if the lease is extended.” 30 U.S.C. § 207(a); *see also* 43 C.F.R. § 3451.1(a)(1) (“All leases issued after August 4, 1976, shall be subject to readjustment at the end of the first 20-year period and, if the lease is extended, each 10-year period thereafter.”).

In addition to the Secretary’s broad discretion regarding how to lease coal, the law conveys to the Secretary discretion end federal coal leasing. The FCLAA provides that the Secretary “is authorized” to identify tracts for leasing and thereafter “shall, in his discretion ... from time to time, offer such lands for leasing” 30 U.S.C. § 201; *see also WildEarth Guardians v. Salazar*, 859 F. Supp. 2d 83, 87 (D.D.C. 2012) (“Under the [FLCAA], the Secretary is *permitted* to lease public lands for coal mining operations after conducting a competitive bidding process” (emphasis added)). Further, the Secretary has discretion to reject lease applications on the grounds that “leasing of the lands covered by the application, for environmental or other sufficient reasons, would be contrary to the public interest.” 43 C.F.R. § 3425.1-8(a)(3).

Federal public lands coal is a “leasable” mineral sold under the Mineral Leasing Act, which provides that “[d]eposits of coal . . . and lands containing such deposits owned by the United States . . . shall be subject to disposition in the form and manner provided by this chapter.” 30 U.S.C. § 181. The Mineral Leasing Act further explicitly authorizes the Secretary to prescribe all “necessary and proper rules and regulations” to implement the provisions of the Act. 30 U.S.C. § 189. Moreover, as amended in 1976, the Mineral Leasing Act explicitly provides that leasing is discretionary:

The Secretary of the Interior is authorized to divide any lands subject to this Act which have been classified for coal leasing into leasing tracts of such size as he finds appropriate and in the public interests and which will permit the mining of all coal which can be economically extracted in such tract and thereafter he shall, in his discretion, upon the request of any qualified applicant or on his own motion, from time to time, offer such lands for leasing and shall award leases thereon by competitive bidding.

30 U.S.C. § 201(a)(1). As this provision has been interpreted by the courts, the Secretary is “permitted,” but not required, to lease particular tracts for coal mining, and is delegated “sweeping authority” to implement that statutory authority. *WildEarth Guardians v. Salazar*, 783 F. Supp. 2d 61, 63 (D.D.C. 2011) (*quoting Indep. Petroleum Ass’n of Am. v. DeWitt*, 279 F.3d

1036, 1040 (D.C. Cir. 2002). As the U.S. Supreme Court affirmed just a decade after Congress passed the Mineral Leasing Act, the statute “goes no further than to empower the Secretary to execute leases.” *United States ex rel McLennon v. Wilbur*, 283 U.S. 414, 419 (1931) (MLA); see also *W. Energy All. v. Salazar*, 709 F.3d 1040, 1044 (10th Cir. 2013) (Secretary has “considerable” discretion in leasing decisions).³⁶

Indeed, BLM must be guided by its statutory mandate to administer federal coal leasing in a manner that protects the Nation’s “environmental, air and atmospheric, [and] water resource[s],” 43 U.S.C. § 1701(a)(8), takes into “account the long-term needs of future generations,” and considers “the use of some land for less than all of the resources” to accomplish these objectives. *Id.* § 1702(c). To that end, BLM’s rules require that, “[a]n application for a lease shall be rejected in total or in part if the authorized officer determines that ... leasing of the lands covered by the application, for environmental or other sufficient reasons, would be contrary to the public interest.” 43 CFR § 3425.1-8. In other words, coal leasing must not occur *unless* it is in the public interest.

There is not just explicit authority, but also historical precedent, for the Secretary to impose a coal leasing moratorium as an exercise of discretion over public property. Beginning in the early 1970s, under the pre-1976 “preference right” coal leasing scheme, speculation on coal leases was widespread. Even prior to the enactment of the 1976 Coal Leasing Amendments and SMCRA, the Department of the Interior recognized widespread problems, and in 1973, the then Secretary issued Order No. 2952, which provided:

In the exercise of my discretionary authority under Section 2(b) of the Mineral Leasing Act, as amended (30 U.S.C. § 201(b)), I have decided not to issue prospecting permits for coal under that section until further notice and to reject pending applications for such permits in order to allow the preparation of a program for the more "orderly" development of coal resources upon the public lands of the United States under the Mineral Leasing Act, with proper regard for the protection of the environment.

Accordingly, no prospecting permits for coal under Section 2(b) of the Mineral Leasing Act, *supra*, shall be issued until further notice. All pending applications for such permits shall be rejected. . . .

United States Department of the Interior, Secretarial Order 2952 (Feb. 1973); see also *Krueger*, 539 F.2d at 237.

³⁶ A federal district court in Louisiana recently held, without analysis, that because the Mineral Leasing Act and the Outer Continental Shelf Lands Act (“OCSLA”) do not explicitly authorize a pause on oil and gas leasing, any such pause is contrary to law, and further, that a pause is effectively a substantive rule that must be subject to notice and comment. See *Louisiana v. Biden*, Case No. 2:21-CV-00778 (W.D. LA, June 15, 2021). The court’s decision is contrary to many decades of case law and agency practice, is currently on appeal, and should not guide BLM’s actions related to coal leasing.

During the 1973 moratorium, the Interior Department undertook a series of national and local EISs for coal leasing. Lease applicants challenged the moratorium, alleging that the 1973 moratorium failed to implement the policy of the Mining and Minerals Policy Act of 1970, 30 U.S.C. § 21a, to “foster and encourage the development of coal resources.” The U.S. Court of Appeals for the District of Columbia rejected this argument, finding that:

The Secretary had the right, before receiving or approving applications, to order a pause for refreshment of his judgment by further investigation, public input, comprehensive consideration, and rulemaking directed toward the hopefully better implementation of the Mineral Leasing Act in light of NEPA and other significant factors.

Krueger v. Morton, 539 F.2d 235, 239 (D.C. Cir. 1976). Thus, the court upheld the moratorium as a valid exercise of “discretionary judgment concerning the manner of executing powers entrusted to the Secretary” (under the pre-1976 MLA) pending the last programmatic review of the coal program. *Id.* at 240.

Further, in reviewing that earlier programmatic EIS, the court in *NRDC v. Hughes* held that NEPA obligated Interior to consider the alternative of no new national coal leasing program whatsoever. *NRDC v. Hughes*, 437 F.Supp. 981, 990-91 (D.D.C. 1977) (requiring DOI to address “the threshold question as to whether the proposed [coal leasing] policy is even necessary”); see also *Hunter v. Morton*, 529 F.2d 645, 649 (10th Cir. 1976) (holding that 1973 coal leasing moratorium, S.O. 2952, was committed to agency discretion).

In sum, as an interim step to winding down the federal coal-leasing program, the Secretary should immediately pause all new coal leasing to prevent the unnecessary expansion of harm from the mining and burning of federal coal.

B. The Secretary Should Cancel Unlawfully Approved Leases.

In addition to pausing new leases, the Secretary should use its authority to cancel existing coal leases that federal courts have remanded to BLM based on inadequate NEPA compliance. See 43 C.F.R. § 3108.3(d) (leases may be cancelled if “improperly issued”). These include the recently remanded lease for the Alton coal mine in Utah, see *Utah Physicians for a Healthy Env’t v. BLM*, No. 2:19-cv-00256-DBB, 2021 WL 1140247, at *1 (D. Utah Mar. 24, 2021), and all leases for which a federal court may in the future find BLM’s NEPA review to have been unlawful.

In July 2018, by way of a lease by application approval, BLM approved an expansion of the Alton coal mine a few miles from the entrance to Bryce Canyon in Utah. The approval authorized expansion of an existing mine onto more than 2,000 acres of public land and mineral estate, which would mean an additional roughly 16 years of strip mining yielding 30 million tons of coal. In March 2021, the Federal District Court in Utah invalidated BLM’s EIS based on its

failure to adequately consider the indirect and cumulative climate impacts of the mine expansion. In particular, the court criticized BLM's failure to provide a balanced analysis of the cost of the 72 million tons of greenhouse gas emissions associated with the additional mined coal, as compared with the purported economic benefits that were heavily emphasized in the FEIS. On remand, BLM should correct its climate analysis and exercise its authority to cancel the Alton coal lease.

The mine expansion, by BLM's own admission, could result in the loss of the southernmost population of Greater Sage-Grouse in North America. More than 200,000 public comments opposed the expansion – more than any other coal mine (that we're aware of) in U.S. history – and at one time the National Park Service, Fish & Wildlife Service, and Hopi Tribe all urged BLM to select the No Action alternative. New USGS research, released March 31, 2021, confirmed that Greater Sage-Grouse leks (breeding grounds), in particular those at the periphery of the range, are at significant risk in the coming decades.³⁷

On remand, BLM must correct its faulty analysis of costs and benefits, and in doing so should reconsider the authorization and deny it. Of first order, the Administration is required by the court's decision to replace the skewed and misleading emphasis on purported economic benefits of the project with a clear-eyed comparison of those limited benefits side-by-side with the enormous economic costs associated with the project's greenhouse gas emissions. In doing so, the Administration should employ the Social Cost of Carbon, which, as Secretary Haaland recently affirmed "can be a useful measure to assess the climate impacts of greenhouse gas emissions changes for Federal proposed actions, in addition to rulemakings."³⁸ Using this Administration's interim social cost of carbon of \$52/ton, as listed for 2021 carbon dioxide emissions in the recent interim social cost technical support document, the 72 million tons of carbon dioxide emissions that would result from mining and burning Alton coal over a 16-year period would cause a staggering \$3.7 billion in climate damages.³⁹ Those harms, of course, are paid by the public – not the mining company. This Administration can and should deny the mine lease authorization to avoid these harms – as well as the severe potential harm to the affected Greater Sage Grouse population and other significant impacts of putting an enormous strip mine on the doorstep of a popular national park.

In addition to cancelling all unlawfully issued leases, BLM should re-evaluate coal-leasing levels in the Buffalo and Miles City Resource Management Plans which, under the Trump

³⁷ USGS, New Research Highlights Decline of Greater Sage-Grouse in the American West, Provides Roadmap to Aid Conservation (Mar. 31, 2021), https://www.usgs.gov/news/new-research-highlights-decline-greater-sage-grouse-american-west-provides-roadmap-aid?qt-news_science_products=1#qt-news_science_products. Abstract attached as Exhibit 15.

³⁸ Secretarial Order 3399, Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process, sec. 5(b) (Apr. 16, 2021), https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf. Attached as Exhibit 16.

³⁹ Interagency Working Group, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide (February 2021), https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf. Attached as Exhibit 17.

administration, failed to consider the reduction or elimination of coal leasing in the Powder River Basin. In 2018, the District of Montana held that BLM violated NEPA in part by refusing to consider any alternative that reduced the amount of coal available for leasing in the Powder River Basin in Montana and Wyoming under the Buffalo and Miles City Resources Management Plans (RMPs). *WORC v. BLM*, No. 16-21-GFF-BMM, 2018 WL 1475470 (D. Mont. 2018). “BLM’s failure to consider any alternative that would decrease the amount of extractable coal available for leasing rendered inadequate the Buffalo EIS and Miles City EIS in violation of NEPA.” *Id.* at *9. In particular, the Court directed BLM to go through a revised coal screening process to consider climate change impacts of alternatives. *Id.* at *15.

In November 2019, BLM finalized Records of Decision for revised NEPA analysis for both the Buffalo and Miles City RMPs, but again refused to consider reduced coal leasing alternatives, reasoning again that its analysis was constrained to the specific resource considerations enumerated in the coal screening process, which exclude climate.⁴⁰

BLM’s litigation position, if upheld by the court, would create a significant new legal hurdle to BLM’s future revision of RMPs to limit leasing to minimize climate impacts from coal production from public minerals. To avoid such an unnecessary constraint on BLM’s discretion, BLM should request a voluntary remand from the court to re-open the NEPA process to analyze alternatives that reduce and eliminate federal coal leasing in the Buffalo and Miles City field offices. Such analysis should fully analyze the impacts of coal production from federally controlled mineral reserves in line with recent direction from the Biden Administration, and Department of the Interior in particular, with respect to incorporation of social costs of carbon in NEPA reviews.

C. Incorporate the Social Cost of Carbon and Social Cost of Methane into Coal Lease Royalties for Renewed Leases.

Immediate action is necessary not only to prevent new leases, but also to ensure that existing leases do not create disfavored subsidies for coal development through unreasonably low royalty rates. In the 2017 PEIS Scoping Report, BLM summarized analysis by the Council of Economic Advisors that royalty rates in existing leases are significantly lower than those necessary to generate a fair return to American taxpayers,⁴¹ and thus constitute a significant subsidy for coal mining on federal lands.

BLM has an opportunity to eliminate the coal royalty subsidy on a large number of existing leases and, at the same time, reduce climate emissions from federal coal production.⁴² More than 100 federal coal leases will come up for a 10-year renewal during President Biden’s

⁴⁰ BLM, Buffalo Field Office, Supplemental Environmental Impact Statement, at 3-14 (2019); BLM, Miles City Field Office, Supplemental Environmental Impact Statement, at 3-13 (2019).

⁴¹ 2017 PEIS Scoping Report, at 6-8.

⁴² *Id.* at 6-15 (noting that initial analysis demonstrated that increasing federal coal royalty rates would reduce overall coal consumption).

first term, including 15 between June 1 and the end of 2021 and another 35 in 2022.⁴³ BLM should exercise its authority to modify royalty rates in renewed leases by incorporating the social cost of carbon and methane to account for climate externalities and the true cost of such leases to the American public.⁴⁴ BLM has clear authority to adjust royalties for renewed leases. Federal regulations require the Department to provide prior notice to the lessee of any adjustments, but do not otherwise limit BLM's authority to adjust lease terms.⁴⁵

In April 2016, researchers at Harvard University and Vulcan Philanthropies released a paper that utilized the Integrated Planning Model to analyze the market and climate impacts of incorporating a "carbon adder" into federal coal royalties.⁴⁶ Their findings indicated that, in the absence of downstream regulation of coal-combustion carbon emissions, incorporating the Interagency Working Group's social cost of carbon into federal coal royalty rates could achieve roughly three-quarters of the emissions reductions that such downstream regulation may accomplish. The analysis also finds that in a scenario where downstream regulation is effected, incorporating the social cost of carbon into federal coal royalties would result in a slight up-tick in mining non-federal coal reserves, but this substitution would be tempered by a shift to electricity generation by gas and renewables.⁴⁷ Under both scenarios (with and without downstream regulation), the modeling conducted as part of the study revealed that adding the social cost of carbon into federal coal royalties would increase revenue to the federal government and states even while reducing the total amount of coal mined and GHGs emitted from the electric sector.⁴⁸ Further, as the White House Council of Economic Advisors recognized, even if carbon dioxide emissions from coal combustion are completely internalized through downstream regulation on coal combustion (which remains to be seen), BLM may achieve additional emissions-reductions benefits by requiring coal producers to internalize the climate costs of coal-bed methane emissions that are released during mining.⁴⁹

Royalty adjustments are essential to meeting climate goals and avoiding ongoing subsidies of coal mining that contravene this Administration's announced policy, and need not await the broader reviews of fossil fuel royalty policies currently ongoing at the Department of Interior's Office of Natural Resources Revenue (ONRR) and in the ongoing review of the oil and

⁴³ See list of federal coal leases and renewal dates. Attached as Exhibit 18.

⁴⁴ 30 U.S.C. § 207(a) ("royalties and other terms and conditions of the lease will be subject to readjustment at the end of its primary term of twenty years and at the end of each ten-year period thereafter if the lease is extended."); *Accord* 43 C.F.R. § 3451.1 ("All leases issued after August 4, 1976, shall be subject to readjustment at the end of the first 20-year period and, if the lease is extended, each 10-year period thereafter."). BLM recognized the significant environmental, health, and climate externalities of the federal coal program in its 2017 PEIS Scoping Report, at 5-46 to 5-52.

⁴⁵ 43 C.F.R. § 3451.1(c)(1)-(2).

⁴⁶ Todd Gerarden and James Stock, *Federal Coal Program Reform, the Clean Power Plan, and the Interaction of Upstream and Downstream Climate Policies* (April 2016). Attached as Exhibit 19.

⁴⁷ *Id.* at 3.

⁴⁸ *Id.*

⁴⁹ White House, *The Economics of Coal Leasing on Federal Land: Ensure a Fair Return to Taxpayers*, at 28 (2016). Attached as Exhibit 20.

gas leasing process.⁵⁰ Thus, we urge BLM to incorporate the appropriate climate costs into royalties for renewed coal leases.

D. Deny Requests for Coal Mine Royalty Rate Reductions.

BLM must also deny all pending requests for federal coal lease royalty rate reductions in accordance with new federal climate policy and existing BLM regulations that strictly limit the availability for these requests. Rejection of royalty rate reduction requests is necessary under Executive Order 14008, which instructed federal agencies to identify and eliminate fossil fuel subsidies to the extent allowed by federal law.⁵¹

Royalty rate reductions are permitted under BLM's regulations.⁵² The Federal Coal Leasing Amendments Act of 1976 and implementing regulations amended the Mineral Leasing Act to require a royalty rate of not less than a 12.5% royalty rate on the sale of coal from surface mines, and not less than 8% for coal from underground mines.⁵³ However, in 2013 the Government Accountability Office found that actual rates are far lower in many states: 12.2% in Wyoming, 11.6% in Montana, 11.6% in Utah, and 5.6% in Colorado, reflecting significant reductions below the statutory rates.⁵⁴ BLM may reduce royalty rates "for the purpose of encouraging the greatest ultimate recovery of Federal coal, and in the interest of conservation of Federal coal and other resources, whenever in [its] judgment it is necessary to promote development, or if he finds that the Federal lease cannot be successfully operated under its terms."⁵⁵ However, such discretionary rate reductions contradict the Biden Administration's policies regarding fossil fuel subsidies and stated goal of reducing greenhouse gas emissions from federal fossil fuels.

Nonetheless, BLM has in recent months contravened the Administration's climate policies by reducing royalty rates for several large coal mines on federal land. BLM reduced royalty rates for two Arch Resources coal mines in Colorado and Wyoming and for Desert Power Electric Cooperative's Deserado mine in Colorado, apparently without any environmental review.⁵⁶ As a result, these mining companies are now paying lower royalties

⁵⁰ See Executive Order No. 14008 (directing the Department of Interior to examine whether to incorporate climate damages into fossil fuel royalties); ONRR, 2020 Valuation Reform and Civil Penalty Rule: Delay of Effective Date; Request for Public Comment, 86 Fed. Reg. 9288 (Feb. 12, 2021) (seeking comment on whether to "consider science on the source and impacts of climate change in setting royalty and revenue management policy."). Attached as Exhibit 21.

⁵¹ Executive Order No. 14008, sec. 209 (directing agencies to identify existing subsidies and to "take steps to ensure that, to the extent consistent with applicable law, Federal funding is not directly subsidizing fossil fuels.").

⁵² 43 C.F.R. § 3473.3-2(e); see also *id.* § 3485.2(c)(1) (same).

⁵³ 30 U.S.C. § 207(a); 43 C.F.R. § 3437.2-2(a)(1)-(2).

⁵⁴ Government Accountability Office, *Coal Leasing: BLM Could Enhance Appraisal Process, More Explicitly Consider Coal Exports, and Provide More Public Information*, at 25 (Dec. 2013). Attached as Exhibit 22.

⁵⁵ 43 C.F.R. § 3485.2(c)(1).

⁵⁶ Chris D'Angelo, "Team Biden Quietly Approved a Fat Subsidy for One of America's Top Coal Suppliers," Mother Jones (Aug. 6, 2021), <https://www.motherjones.com/environment/2021/08/biden-administration-interior-subsidy-arch-resources-coal-mining/>. Attached as Exhibit 23.

than they were under the Trump administration based on apparent findings that such royalty rate reductions were appropriate to foster greater coal development. While the Biden Administration has unfortunately already granted these requests, numerous requests for royalty rate reductions are currently pending before BLM, including some for the largest mines reliant on federal coal in Wyoming's Powder River Basin.

We understand that royalty rate reduction requests are subject to review by the Assistant Secretary for Lands and Minerals Management's office.⁵⁷ Given the clear direction from Executive Order 14008 to eliminate fossil fuel subsidies, BLM and the Department of the Interior should deny all requests for coal mine royalty relief.

III. BLM Must Analyze the Climate Impacts of the Federal Coal Leasing Program in Light of the Looming Climate Crisis.

Despite its long history, BLM has *never* analyzed the climate impacts of the federal coal leasing program as a whole – not in any of the prior comprehensive reviews, the last of which occurred in the 1980s, not in any of the NEPA reviews for Resource Management Plans, and not in reviewing any individual coal leases. As federal coal managed by BLM accounts for up to 40 percent of all coal burned in the U.S. to generate electricity, analysis of the choice to lease public lands for coal leasing is long overdue. BLM has an obligation to be honest with the American people about the choices it makes in its stewardship of public lands, and the environmental and climate consequences of those choices.

Below we identify five key priorities for the climate analysis of BLM's upcoming review:

- (1) BLM must acknowledge that continued federal coal leasing undermines the Biden administration's clean energy and climate goals, and that further federal coal leasing is not required to meet U.S. energy needs.
- (2) We are in the midst of a global climate crisis, and BLM's environmental baseline must reflect that. BLM must disclose that recent climate science, which has emerged since the 2017 PEIS scoping report, shows that greenhouse gas emissions must be cut further, and reduced faster, than previously understood in order to avoid massive human suffering from climate disruption.
- (3) BLM must use the scientific tools available to analyze climate impacts, including carbon budgets and the social cost of carbon and methane.
- (4) The Biden administration has recognized that climate change is an environmental justice issue, which will impact low-income and communities of color the hardest in the United States. BLM cannot avoid that any decision to continue the federal coal leasing program will exacerbate those unequal impacts; it would be a deliberate decision by our federal government to inflict climate harms – such as wildfires,

⁵⁷ Letter from Laura Daniel-Davis to Bureau Directors (Mar. 19, 2021) (stating that Directors "shall continue to provide" royalty requests to the Office of the Assistant Secretary for Land and Minerals Management for review "prior to taking a final action" on such requests). Attached as Exhibit 24.

flooding, and storm surges – on environmental justice communities.

- (5) BLM must acknowledge that its choices for fossil fuel leasing on public lands and waters matters – basic economic principles tell us that those choices impact the price and use of fossil fuels, which compete with wind, solar, storage, and efficiency in the marketplace, and dramatically affect the amount of greenhouse gasses emitted by the U.S. electricity sector.

A. Continued Federal Coal Leasing Conflicts with the Biden Administration’s National Greenhouse Gas Reduction Targets and is Not Necessary to Meet U.S. Energy Needs.

Continued reliance on coal, whether from publicly owned lands and mineral reserves or other sources, is unnecessary to fulfill U.S. energy needs and directly undermines the Biden administration’s climate and clean energy goals.

- i. Continuation of the federal coal program conflicts with national climate goals.

President Biden committed to a fast, equitable transition to renewable energy in order to reduce greenhouse gas emissions to 50 percent below 2005 levels by 2030 and to net zero emissions by 2050.⁵⁸ “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.”⁵⁹ Meeting those goals requires rapidly phasing out federal coal production. BLM cannot effectively “combat the climate crisis” while continuing to fuel that crisis by leasing publicly owned lands, waters, and minerals to fossil fuel companies.

As summarized by dozens of renowned climate scientists in 2016 in comments to BLM on the scope its planned (and ultimately cancelled) review of the federal coal program: “We are scientists writing to urge the Department of the Interior to take meaningful action to fight climate change by ending federal coal leasing, extraction, and burning. The vast majority of known coal in the United States must stay in the ground if the federal coal program is to be consistent with national climate objectives and be protective of public health, welfare, and biodiversity.”⁶⁰

Given this strong and clear signal from leading climate scientists, as well as the ever-growing body of research demonstrating the need to keep fossil fuels in the ground in order to avoid the work effects of climate change, it is imperative that BLM analyze whether the continuation of the federal coal leasing program is consistent with our international climate commitments and the need to keep global warming within tolerable levels. Given the state of

⁵⁸ White House Fact Sheet, *supra* note 9.

⁵⁹ EO 14008, sec. 201.

⁶⁰ Letter from Ken Caldeira, et al., to Secretary Sally Jewell, “Scientists Support Ending Coal Leasing on Public Lands to Protect the Climate, Public Health, and Biodiversity” (July 27, 2016). Attached as Exhibit 25.

scientific consensus around climate change, it is clear that efforts to meet our national and international climate commitments are compatible with leasing and burning federally-owned coal well into the future. BLM must evaluate whether it is time for the U.S. government to get out of the business of selling taxpayer owned coal based on the urgent need to address greenhouse gas emissions and the desire to meet our national and international emission reduction goals.

As the Council on Environmental Quality explained as early as 2014 in Draft NEPA climate guidance, (which is the subject of shifting political winds and has subsequently been finalized, revoked, replaced with new draft guidance, and revoked again), federal agencies evaluating the climate impacts of their decisions should “incorporate by reference applicable agency emissions targets such as applicable Federal, state, tribal, or local goals for GHG emission reductions to provide a frame of reference *and make it clear whether the emissions being discussed are consistent with such goals.*”⁶¹

In May 2016, the Stockholm Environment Institute released a paper analyzing the reductions in greenhouse gas emissions that could be achieved by a policy of rejecting new lease proposals for fossil fuel extraction on federal lands and waters, and not renewing existing leases when their current authorization expires. The study explained the need for meaningful evaluation of strong policy choices in stark terms: “[e]ven with large-scale deployment of bioenergy and carbon capture and storage technologies, scientific assessments show that limiting warming to 2°C, and avoiding dangerous climate tipping points, will require a rapid phase-out of fossil fuels around the world.”⁶² The study ultimately concluded that, by phasing out the federal coal leasing program, “U.S. coal production would steadily decline, moving closer to a pathway consistent with a global 2°C temperature limit. ... Phasing out federal leases for fossil fuel extraction could reduce global CO₂ emissions by 100 million tonnes per year by 2030, and by greater amounts thereafter.”⁶³

Given that the Biden Administration’s goals align with keeping warming to 1.5°C above pre-industrial levels rather than the Paris Agreement’s consensus pledge of 2°C, even steeper reductions in fossil fuel use will be required to achieve the updated goal. One recent paper in the scientific journal *Nature*, estimates that to align with a 1.5°C scenario (with 50% probability of limiting warming to 1.5°C), 97 percent of U.S. coal reserves would have to remain in the ground by 2050.⁶⁴ The study rightly concludes that “[c]entral to pushing this transition forwards will be the domestic policy measures required to both restrict production and reduce

⁶¹ Council on Environmental Quality, “Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews,” 79 Fed. Reg. 77,802, 77,826 (Dec. 24, 2014) (emphasis added).

⁶² P. Erickson & M. Lazarus, Stockholm Environment Institute, *How would phasing out U.S. federal leases for fossil fuel extraction affect CO₂ emissions and 2°C goals?*, at 9 (May 2016) (citing Rogelj et al. 2011; IPCC 2014; Raupach et al. (2014)). Attached as Exhibit 26.

⁶³ *Id.* at 3.

⁶⁴ Dan Welsby, et al., *Unextractable fossil fuels in a 1.5°C world*, 597 *Nature* 230, 233 (Sept. 9, 2021). Attached as Exhibit 27.

demand.”⁶⁵ Later this year, the world’s leaders will meet in Glasgow, Scotland to revisit climate commitments and examine viable pathways to avoid runaway climate change. BLM’s review of the federal coal program must account for any new priorities or updated greenhouse gas emission reduction pledges that emerge from those international conversations.

ii. Federal coal is not necessary to meet U.S. energy needs.

Two recent studies demonstrate the feasibility of meeting U.S. clean energy goals using only existing technologies – and without making favorable assumptions for unproven carbon capture or removal technologies. In June 2020, modelers at the Goldman School of Public Policy at the University of California, Berkeley found that the United States could generate 90% of its electricity from carbon-free sources by 2035, and do so while lowering consumers’ utility bills and maintaining a reliable electric grid.⁶⁶ According to the study’s authors, during normal periods of electricity demand, 70% of the electricity would come from wind, solar, and battery storage, hydropower would supply 20%, and gas would account for the final 10%.⁶⁷ Doing so would support more than 500,000 *more jobs* each year than a business as usual approach, and would avoid over \$1.2 trillion in health and environmental costs, including 850,000 avoided premature deaths between now and 2050.⁶⁸

A September 2021 meta-analysis by researchers at Energy Innovation reached a similar conclusion regarding the feasibility of rapidly phasing out U.S. fossil fuel production. In an analysis of 11 different reports published since the start of 2020, including the Berkeley study, Energy Innovation concluded that cost reductions in wind, solar, and battery storage have made it technologically feasible to generate 80 percent of U.S. electricity from zero-emission sources by 2030, while raising electricity costs to consumers by only up to 3 percent.⁶⁹ The study confirms, however, that ambitious federal policies are necessary to transform the market in line with these findings. Energy Innovation concluded transforming the electric sector to achieve 80% carbon-free generation by 2030 would avoid 85,000 - 317,000 premature deaths through 2050, and add 500,000 - 1 million *net* new jobs.⁷⁰

B. BLM Must Recognize the Recent Climate Science that has Emerged Since its 2017 Coal Scoping Report and the Scientific Consensus on the Need to Dramatically Reduce GHG Emissions in the Near-Term.

BLM’s review coal-program review must acknowledge and respond to emerging climate science that underscores the need for immediate action to eliminate greenhouse gas emissions

⁶⁵ *Id.*

⁶⁶ Amol Phadke, et al., *2035: The Report: Plummeting Solar, Wind, and Battery Costs Can Accelerate Our Clean Electricity Future*, at 2 (June 2020). Attached as Exhibit 28.

⁶⁷ *Id.* at 20

⁶⁸ *Id.* at 5, 28.

⁶⁹ Dan Esposito, *Studies Agree 80 Percent Clean Electricity By 2030 Would Save Lives and Create Jobs at Minimal Cost*, at 1 (Sept. 2021). Attached as Exhibit 29.

⁷⁰ *Id.* at 2.

from federal fossil fuels. The New England Journal of Medicine recently broke from its traditional structures to publish an editorial from the editors of 19 health journals worldwide, which aptly summarized the state of our scientific understanding of climate change:

The science is unequivocal: a global increase of 1.5°C above the pre-industrial average and the continued loss of biodiversity risk catastrophic harm to health that will be impossible to reverse. . . Rises above 1.5°C increase the chance of reaching tipping points in natural systems that could lock the world into an acutely unstable state. This would critically impair our ability to mitigate harms and to prevent catastrophic, runaway climate change.⁷¹

The authors note that “current strategies for reducing emissions to net zero by the middle of the century implausibly assume that the world will acquire great capabilities to remove greenhouse gases from the atmosphere” and that “insufficient [government] action means that temperature increases are likely to be well in excess of 2°C, *a catastrophic outcome for health and environmental stability.*”⁷²

As part of defining the environmental baseline for its upcoming review of the federal coal program, BLM must acknowledge that the state of climate sciences has progressed since BLM prepared its coal scoping report in 2017 and that, despite this improved scientific knowledge, current federal policies fall short of achieving those emission reduction goals. “Establishing appropriate baseline conditions is critical to any NEPA analysis. ‘Without establishing the baseline conditions which exist ... before [a project] begins, there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA.’” *Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016) (quoting *Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988)).

The findings of two reports in particular, published in 2018 and 2021, from the world’s leading climate scientists should inform BLM’s climate analysis. These findings are summarized below.

i. The full effects of climate change will depend on how effectively we limit warming.

In 2018, the Intergovernmental Panel on Climate Change (IPCC) issued a *Special Report on Global Warming of 1.5°C* that quantified the devastating harms that would occur at 2°C warming, highlighting the necessity of limiting warming to 1.5°C to avoid catastrophic impacts to people and life on Earth.⁷³ The IPCC 2018 *Special Report* provides overwhelming evidence

⁷¹ Editorial, *Call for Emergency Action to Limit Global Temperature Increases, Restore Biodiversity, and Protect Health*, New England Journal of Medicine, at 1 (Sept. 9, 2021). Attached as Exhibit 30.

⁷² *Id.* at 2 (emphasis added).

⁷³ Intergovernmental Panel on Climate Change, 2018: Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018). Attached as Exhibit 31.

that climate hazards are more urgent and more severe than previously thought, and that aggressive reductions in emissions within the next decade are essential to avoiding the most devastating climate change harms.

The IPCC *Special Report* concluded that pathways to limit warming to 1.5°C with little or no overshoot require “a rapid phase out of CO₂ emissions and deep emissions reductions in other GHGs and climate forcers.”⁷⁴ In pathways consistent with limiting warming to 1.5°C, global anthropogenic CO₂ emissions must decline by about 45 percent below 2010 levels by 2030 and reach near zero around 2050.⁷⁵

The recent IPCC *Climate Change 2021: The Physical Science Basis* report, analyzes five scenarios ranging from a very low GHG emissions scenario to a very high GHG emissions scenario, *and in all of them warming of at least 1.5°C is unavoidable*. Between 2021 and 2040, 1.5°C temperature increase is *very likely to be exceeded* under the very high GHG emissions scenario (CO₂ emissions double by 2050), *likely to be exceeded* under the intermediate and high GHG emissions scenarios (CO₂ emissions stay current until 2050 and CO₂ emissions double by 2100, respectively), *more likely than not to be exceeded* under the low GHG emissions scenario (CO₂ emissions reach net zero around 2050), and *more likely than not to be reached* under the very low GHG emissions scenario (CO₂ emissions reach net zero around 2050). In all scenarios except for the very low and low GHG scenarios, global warming of 2°C is likely to occur.

Both the IPCC *Climate Change 2021* report and the 2018 IPCC *Special Report* provide overwhelming scientific evidence for the necessity of immediate, deep greenhouse gas reductions across all sectors. The *Climate Change 2021* report estimates that, for a 67% chance of limiting warming to 1.5°C, total emissions of 400 GtCO₂ must not be exceeded from January 2020 onwards.⁷⁶ Global emissions are currently about 40 GtCO₂ per year, so this emissions cutoff would be passed in about 10 years without immediate and drastic action to reduce global emissions.

ii. Greenhouse gas emissions have made the Earth’s climate hotter and more extreme.

According to the IPCC’s *Climate Change 2021* report, “[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred,” and “[t]he scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.”⁷⁷

⁷⁴ Rogelj, Joeri et al., 2018: Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development. *In: Global Warming of 1.5°C, An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018), <https://www.ipcc.ch/sr15/> at 112. Attached as Exhibit 32.

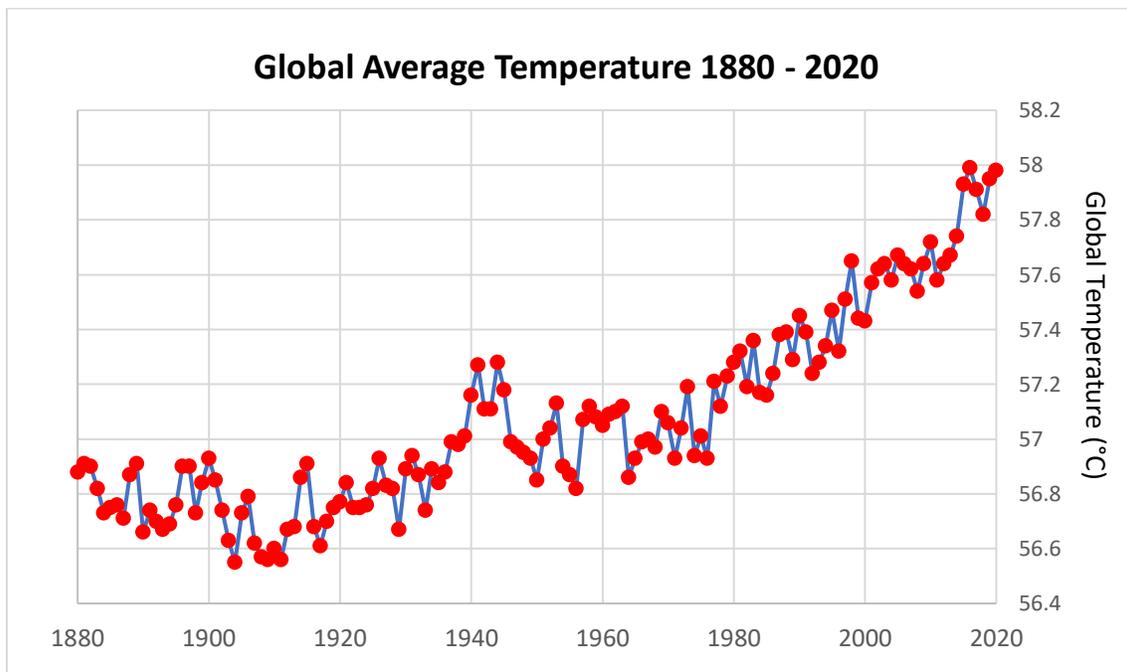
⁷⁵ *Id.* at 95, Figure 2.5, Figure 2.6; also at Summary for Policymakers at 12-14.

⁷⁶ IPCC, AR 6, Summary for Policy Makers at SPM-38.

⁷⁷ *Id.* at SPM-5 and SPM-9.

As human emissions continue to rise, the average global atmospheric CO₂ concentration in 2019 reached 410 parts per million (ppm), a level not seen for at least 2 million years.⁷⁸ The last time CO₂ in Earth’s atmosphere was at 400 ppm, global mean surface temperatures were 2 to 3°C warmer and the Greenland and West Antarctic ice sheets melted, leading to sea levels that were 10 to 20 meters higher than today.⁷⁹ The current atmospheric CO₂ concentration is 47 percent larger than the pre-industrial level of 280 ppm, and much greater than levels during the past 800,000 years.⁸⁰ The atmospheric concentrations of methane (CH₄) and nitrous oxide (N₂O), two other potent greenhouse gases, have increased by 156 percent and 23 percent relative to pre-industrial levels.⁸¹

As a result, it is now irrefutable fact that humans are drastically changing Earth’s climate with unprecedented increases in temperature. Globally, each of the last four decades has been successively warmer than any preceding decades since 1850, which is the first year with reliable temperature measurements. Average global surface temperature from 2001 to 2020 was 1.8°F (0.99°C) higher than in 1850 to 1900, with larger increases over land than over the ocean. The best estimate for the human-caused global surface temperature increase from 1850 to 2019 is 1.9°F (1.07°C).⁸² Since 2012, global warming has been especially pronounced, with the past five years (2016-2020) being the hottest five-year period since 1850 (Figure 1).⁸³



⁷⁸ *Id.* at SPM-9.

⁷⁹ LeQuéré, Corinne et al., Global carbon budget 2018, 10 Earth Syst. Sci. Data 2141 (2018). Attached as Exhibit 33.

⁸⁰ Intergovernmental Panel on Climate Change, Climate Change 2021: The Physical Science Basis. Technical Summary. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021) at TS-35 (“IPCC, AR6, Technical Summary”). Attached as Exhibit 34.

⁸¹ IPCC, AR 6, Summary for Policy Makers at SPM-5 and SPM-9.

⁸² *Id.* at SPM-5 and SPM-6.

⁸³ IPCC, AR 6, Technical Summary at TS-8.

Figure 1: Global average temperature from 1880 to 2020. Data from NOAA National Centers for Environmental Information.⁸⁴ Note: The IPCC generally uses 1850 as a reference, whereas this NOAA dataset begins in 1880, so the graph represents NOAA's choice of reference frame.

iii. Extreme weather events are becoming the new normal.

Human-induced climate change is already affecting weather and climate extremes observed around the globe. Many events such as heatwaves, heavy precipitation, droughts, and tropical cyclones are not only changing in severity but are also now attributable to human actions.⁸⁵ Alarming, many of the changes we are imposing on our climate “due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level.”⁸⁶

Extreme weather events are striking with increasing frequency, most notably heat waves and heavy precipitation events.⁸⁷ In the contiguous United States, extreme temperatures are expected to increase even more than average temperatures, with more intense heat waves and 20 to 30 more days per year above 90°F by mid-century for most regions under a higher emissions scenario.⁸⁸ Heavy precipitation has become more frequent and intense in most regions of the U.S. since 1901.⁸⁹ This is both because increasing temperatures cause more evaporation from soils, which places more water vapor in the atmosphere,⁹⁰ and because warmer air holds more water vapor, resulting in more extreme rain and snowstorms.⁹¹ Climate warming also has exacerbated recent historic droughts by reducing soil moisture and contributing to earlier spring melt and reduced water storage in snowpack.⁹² As conditions become hotter and drier, climate change is contributing to an increase in area burned by wildfire and a lengthening of the wildfire season in recent decades.⁹³ In addition to the toll on human lives from the fires themselves, airborne soot from wildfire smoke was linked to over 33,000 deaths a year globally between 2000 and 2016, causing 0.62% of all worldwide deaths yearly, according to a recent study.⁹⁴

⁸⁴ NOAA National Centers for Environmental Information (Accessed September 9, 2021), available at: <https://www.ncdc.noaa.gov/monitoring-references/faq/anomalies.php#anomalies>.

⁸⁵ IPCC, AR6, Summary for Policy Makers at SPM-10.

⁸⁶ *Id.* at SPM-28.

⁸⁷ *Id.* at SPM- 5, 11.

⁸⁸ U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment, Vol. I at 185, 199 (2017), <https://science2017.globalchange.gov/> (last visited October 4, 2021).

⁸⁹ *Id.* at 20.

⁹⁰ Climate Central, “Hurricanes and Climate Change: What We Know,” (September 6, 2017), <http://www.climatecentral.org/gallery/graphics/hurricanes-and-climate-change-what-we-know>.

⁹¹ U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment, Vol. I (2017), <https://science2017.globalchange.gov/> at 214.

⁹² *Id.* at 45, 236.

⁹³ U.S. Global Change Research Program, Impacts, Risks, and Adaptation in the United States, Fourth National Climate Assessment, Volume II (2018), <https://nca2018.globalchange.gov/>.

⁹⁴ Chen, Gongbo & Guo, Yuming et al., Mortality risk attributable to wildfire-related PM2.5 pollution: a global time series study in 749 locations, 5 Lancet Planetary Health E579 (2021). Attached as Exhibit 35.

BLM must acknowledge these findings, summarize them for the public, and evaluate impacts of the federal coal program based on the extent of the damage we have already inflicted upon the Earth.

C. BLM Must use Available Tools to Evaluate the Climate Impacts of the Federal Coal Program.

Beyond quantifying the volume of carbon dioxide and methane emissions that result from the federal coal program, comparing those emissions totals among alternatives, and evaluating the extent to which those alternatives are consistent with federal greenhouse gas emission reduction targets, BLM must also use all the tools available to it to evaluate the impact, and not just the volume, of carbon pollution. Two available tools – the social cost of carbon and methane and carbon budgets – are described below.

i. Social cost of carbon and social cost of methane.

The social cost of carbon and social cost of methane tools are based on sound science; have already been used by federal agencies, including BLM, to evaluate the impacts of agency policy proposals; and help put climate impacts into a context that is easily understood by both the public and decision-makers.

Federal agencies evaluating climate impacts of their proposals have frequently claimed that science has not developed the tools to analyze climate impacts of individual proposals. This is not accurate. The social cost of carbon and social cost of methane are two reliable tools that are available and should be utilized by BLM in the PEIS process. Under NEPA’s implementing regulations, where “information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known,” NEPA regulations direct agencies to evaluate a project’s impacts “based upon theoretical approaches or research methods generally accepted in the scientific community.” 40 C.F.R. § 1502.21. The social cost of carbon and social cost of methane are based on generally accepted research methods and years of peer-reviewed scientific and economic studies. As the D.C. Circuit recently explained in invalidating the Federal Energy Regulatory Commission’s review of a fossil fuel infrastructure project, 40 C.F.R. § 1502.21 requires federal agencies to evaluate the social cost of carbon as one potentially available, scientifically accepted tool for analyzing climate impacts. *Vecinos para el Bienestar de la Comunidad Costera v. Fed. Energy Regul. Comm'n*, 6 F.4th 1321, 1329 (D.C. Cir. 2021).

The social cost of carbon was created by an interagency working group (“IWG”) in 2010 that consisted of scientific and economic experts from a dozen federal agencies and offices, including EPA, and the Departments of Agriculture, Commerce, Energy, Transportation, and the Treasury.⁹⁵ The working group’s primary goal was to help federal agencies engaged in

⁹⁵ Interagency Working Group, Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990 (Feb. 2021), https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf.

rulemaking to quantify the economic benefit of federal actions that reduce CO₂ emissions. The result of their efforts was the social cost of carbon – a schedule of estimates of the global economic harm caused by each ton of CO₂ emissions in a given year, expressed as \$/ton.⁹⁶ These values encompass damages from decreased agricultural productivity as a result of drought, human health effects, and property damage from increased flooding, among other factors.⁹⁷ The IWG updated the social cost of carbon and methane with interim values in February 2021, and plans to further update the figures in early 2022.⁹⁸

Although it was initially developed to help agencies craft regulatory impact assessments of proposed rules, the social cost of carbon need not and should not be limited to this application.⁹⁹ Secretarial Order 3399, signed by Secretary Haaland in April, acknowledges that the social cost of carbon and methane “can be a useful measure to assess the climate impacts of GHG emission changes for Federal proposed actions, in addition to rulemakings.”¹⁰⁰ The Secretarial Order further instructs, “[f]or instance, when a Bureau/Office determines that a monetized assessment of socioeconomic impacts is relevant, the SC-GHG protocol is an essential tool to quantify the costs and benefits associated with a proposed action’s GHG emissions and relevant to the choice among different alternatives being considered.”¹⁰¹ The guiding principle of NEPA is that the public is entitled to a clear understanding of the likely impacts of federal agencies’ decisions. The U.S. Supreme Court has called the disclosure of impacts the “key requirement of NEPA,” holding that agencies must “consider and disclose the actual environmental effects” of a proposed project in a way that “brings those effects to bear on [an agency’s] decisions.” *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 96 (1983). The social cost of carbon and social cost of methane provide decision makers and the public with an informative, accessible mechanism for both analyzing and understanding the climate impacts of a proposed decision.

ii. Carbon budgets.

In evaluating the future of the federal coal program, BLM has the opportunity to stanch the flow of greenhouse gases into our atmosphere to avoid a climate catastrophe. As part of the upcoming review, BLM should use carbon budgets to assess and compare the impacts of various program alternatives. Carbon budgets essentially work backward from a desired temperate threshold (say, 1.5°C) and desired confidence at limiting warming to that temperature increase (say, 50% confidence level), to arrive at an amount of greenhouse gases that the world’s economies can emit – forever – while likely staying within the desired temperature. Based on equitable principles, individual country’s contributions can be articulated. Thus, federal proposals can be understood as a percentage of the remaining U.S. carbon budget as one means of analyzing the magnitude of the proposal’s climate impact. In

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ In any event, it is possible that the PEIS at issue here will involve proposed changes to BLM regulations, which would trigger the use of the social cost metrics.

¹⁰⁰ SO 3399 (April 16, 2021).

¹⁰¹ *Id.*

order to stay within planetary carbon budgets to avoid worst-case climate change scenarios, additional mining and burning of U.S. federal coal is simply untenable.

A 2016 analysis found that the carbon emissions that would be released from burning the oil, gas, and coal in the world's currently operating fields and mines would fully exhaust and exceed the carbon budget consistent with staying below 1.5°C.¹⁰² The reserves in currently operating oil and gas fields alone, even excluding coal mines, would likely lead to warming beyond 1.5°C.¹⁰³ An important conclusion of the analysis is that no new fossil fuel extraction or infrastructure should be built, and governments should grant no new permits for extraction and infrastructure. Furthermore, many of the world's existing oil and gas fields and coal mines will need to be closed before their reserves are fully extracted in order to limit warming to 1.5°C.¹⁰⁴ In short, the analysis established that there is no room in the carbon budget for new fossil fuel extraction or infrastructure anywhere, including in the United States, and much existing fossil fuel production must be phased out to avoid the catastrophic damages from climate change.¹⁰⁵

A 2019 Oil Change International analysis underscored that the United States must halt new fossil fuel extraction and rapidly phase out existing production to avoid jeopardizing our ability to meet the Paris climate targets and avoid the worst dangers of climate change.¹⁰⁶ The analysis showed that the U.S. oil and gas industry is on track to account for 60 percent of the world's projected growth in oil and gas production by 2030—the time period over which the IPCC concluded that global carbon dioxide emissions should be roughly halved to meet the 1.5°C Paris Agreement target.¹⁰⁷ Between 2018 and 2050, the United States is poised to unleash the world's largest burst of CO₂ emissions from new oil and gas development—primarily from shale and largely dependent on fracking—estimated at 120 billion metric tons of CO₂ which is equivalent to the lifetime CO₂ emissions of nearly 1,000 coal-fired power plants. Based on a 1.5°C IPCC pathway, U.S. production alone would exhaust nearly 50 percent of the world's total allowance for oil and gas by 2030 and exhaust more than 90 percent by 2050.

¹⁰² Oil Change International, *The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production*, (September 2016), <http://priceofoil.org/2016/09/22/the-skys-limit-report/> at Table 3. Attached as Exhibit 37. According to this analysis, the CO₂ emissions from developed reserves in existing and under-construction global oil and gas fields and existing coal mines are estimated at 942 Gt CO₂, which vastly exceeds the 1.5°C-compatible carbon budget estimated in the 2018 IPCC report on *Global Warming of 1.5°C* at 420 GtCO₂ to 570 GtCO₂.

¹⁰³ The CO₂ emissions from developed reserves in currently operating oil and gas fields alone are estimated at 517 Gt CO₂, which would likely exhaust the 1.5°C-compatible carbon budget estimated in the 2018 IPCC report on *Global Warming of 1.5°C* at 420 GtCO₂ to 570 GtCO₂.

¹⁰⁴ *Id.* at 7, 13.

¹⁰⁵ This conclusion was reinforced by the IPCC Fifth Assessment Report which estimated that global fossil fuel reserves exceed the remaining carbon budget (from 2011 onward) for staying below 2°C (a target incompatible with the Paris Agreement) by 4 to 7 times, while fossil fuel resources exceed the carbon budget for 2°C by 31 to 50 times. See Bruckner, Thomas et al., 2014: Energy Systems in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press (2014), at Table 7.2.

¹⁰⁶ Oil Change International, *supra* note 102.

¹⁰⁷ IPCC, AR 6, Summary for Policy Makers at SPM-15.

Research on the United States' carbon budget and the carbon emissions locked into U.S. fossil fuels similarly supports the conclusion that the U.S. must halt new fossil fuel production and rapidly phase out existing production to avoid the worst dangers of climate change. A 2015 analysis of U.S. fossil fuel resources demonstrated that the potential carbon emissions from already leased fossil fuel resources on U.S. federal lands would essentially exhaust the remaining U.S. carbon budget consistent with the 1.5°C target.¹⁰⁸ This analysis estimated that recoverable fossil fuels from U.S. federal lands would release up to 349 to 492 GtCO₂eq of carbon emissions, if fully extracted and burned. Of that amount, already leased fossil fuels would release 30 to 43 GtCO₂eq of emissions, while as yet unleased fossil fuels would emit 319 to 450 GtCO₂eq of emissions. A 2016 study found that carbon emissions from already leased fossil fuel resources on federal lands alone (30 to 43 GtCO₂eq) would essentially exhaust the U.S. carbon budget for a 1.5°C target (25 to 57 GtCO₂eq) if these leased fossil fuels are fully extracted and burned.¹⁰⁹ The potential carbon emissions from unleased federal fossil fuel resources (319 to 450 GtCO₂eq) would exceed the U.S. carbon budget for limiting warming to 1.5°C many times over.¹¹⁰

More recent scholarship affirms these findings, and concludes that even steeper reductions in GHG emissions are necessary to keep emissions within the remaining available carbon budget associated with 1.5°C warming. One such study used a global energy system model to assess the amount of coal, oil, and gas that would need to remain in the ground both regionally and globally, to allow for a 50 percent change of limiting warming to 1.5°C.¹¹¹ Globally, the study concluded, 60 percent of the world's oil, 60 percent of its methane gas, and 90 percent of coal "must remain unextracted to keep within a 1.5°C carbon budget."¹¹² Thus, "very high shares of reserves considered economic today would not be extracted under a global 1.5°C target,"¹¹³ which, for the U.S., meant that 97 percent of U.S. coal reserves must remain undeveloped in order to meet our national goal of limiting global warming to 1.5°C or less.¹¹⁴

D. BLM Must Recognize the Environmental Justice Impacts of Climate Change.

In January 2021, White House National Climate Advisor Gina McCarthy acknowledged that, "[c]limate change is a racial justice issue because it exacerbates the challenges in the communities that have been left behind. It goes after the very same communities that pollution

¹⁰⁸ EcoShift Consulting, *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels*, (2015). Attached as Exhibit 38.

¹⁰⁹ Robiou du Pont, Yann et al., *Equitable mitigation to achieve the Paris Agreement goals*, 7 *Nature Climate Change* 38 (2017), at Supplemental Table 1. "). Attached as Exhibit 39.

¹¹⁰ EcoShift Consulting, *supra* note 108 at 4.

¹¹¹ Dan Welsby, et al., *Unextractable Fossil Fuels in a 1.5°C World*, *supra* note 61 at 230. Welsby notes that in 2015 McGlade and Elkins estimated that one-third of oil reserves, nearly half of methane gas, and 80 percent of global coal reserves would need to stay in the ground to limit warming to 2°C, with the updated figures a marked increase in the cuts required under prior carbon budgets.

¹¹² *Id.*

¹¹³ *Id.* at 231.

¹¹⁴ *Id.* at 233.

has held back and racism has held back. And it's our opportunity to serve those communities -- to elevate them."¹¹⁵ As the Biden administration evaluates the climate impacts of the federal coal program, it must recognize that climate impacts in the United States are not and will not be felt evenly. Should the Biden administration recognize this fact, as it must, and still decide to continue the federal coal leasing program anyway, that would amount to a deliberate choice to inflict climate harms most acutely on environmental justice communities within the U.S. this century. That unnecessary human suffering can and should be avoided. But if BLM refuses to align its choices with the Biden Administration's climate priorities, BLM must at a minimum own the impacts of its choices on low-income and communities of color.

A recent EPA report, released in September 2021, *Climate Change and Social Vulnerability in the United States*, concluded that climate change will disproportionately affect people of color and low-income communities.¹¹⁶ The report examined six impacts of climate change (air quality and health, extreme temperature and health, extreme temperature and labor, coastal flooding and traffic, coastal flooding and property, inland flooding and property) affect four "socially vulnerable" groups based on income, education, race, and age. EPA analyzed whether members of socially vulnerable groups currently live in areas that are projected to be most severely impacted by climate change, as compared to non-socially vulnerable groups.¹¹⁷

Of the four identified socially vulnerable groups, EPA found that racial minorities are most likely to currently live in areas that are at the highest risk for climate change related impacts such as increased mortality because of extreme temperatures, childhood asthma, labor hour losses, traffic delays, and land loss due to higher sea levels.¹¹⁸ EPA concluded that racial minorities are projected to be impacted significantly more than non-minorities by the extreme weather, air pollution, and ocean level rise that would be caused by a 2°C global warming. Notably, black and African American individuals are 40% more likely to currently live in areas with the highest projected increase in mortality due to extreme temperatures.¹¹⁹

E. BLM Must Analyze Market Substitution Effects of Federal Coal, Oil, and Gas Policies Together in Order to Make a Reasoned Choice Among Alternatives.

NEPA requires agencies to provide a clear basis for choice among considered alternatives, and in particular here BLM must distinguish between the climate impacts of Action and No Action alternatives. 42 U.S.C. §§ 4332(2)(C), 4332(2)(E). In the context of climate

¹¹⁵ Gina McCarthy Talks About the Intersectionality of Climate Change (Jan. 30, 2021), [Gina McCarthy Talks About the Intersectionality of Climate Change - YouTube](#).

¹¹⁶ U.S. Environmental Protection Agency, *Climate Change and Social Vulnerability in the United States* (Sept. 2021), available at https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf. Attached as Exhibit 40.

¹¹⁷ *Id.* at 6.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

change, BLM must analyze and disclose the difference in greenhouse gas emission levels between alternatives. This requires BLM to evaluate the extent to which market effects – specifically the mix of coal, oil, gas, wind, and solar, etc. used to generate electricity – change from one alternative to the next. As BLM explained in the 2017 PEIS scoping report, “[t]he environmental (including climate change) and economic impacts of reform alternatives depend, in large part, on the estimated substitution effects.”¹²⁰ BLM also explained that “identifying substitution will be a critical early data element to enable BLM to subsequently determine” critical issues, including changes to electricity generation, federal and state revenues, employment, and GHG emissions.¹²¹

i. BLM must evaluate its federal coal policies in tandem with those for oil and gas leasing on public lands and waters.

BLM must consider the climate impacts of policies that restrict – and eliminate – fossil fuel leasing on all federal lands and waters. Fossil fuels produced from America’s public lands and waters account for approximately 25 percent of U.S. greenhouse gas emissions.¹²² Attempting to address federal coal, but not oil and gas, would ignore the way in which these fuels interact in the marketplace and require BLM to address climate with one hand tied behind its back. Any policies that would restrict the supply of coal will impact oil and gas consumption, and vice versa. As the U.S. Energy Information Administration explained earlier this year, “increases in natural gas prices are expected to reduce natural gas consumption for electricity generation, which will result in an increased share for coal . . . in the electricity generation mix.”¹²³ That assessment is consistent with BLM’s own conclusion in the 2017 federal coal scoping report that the “availability and the price of natural gas is one of the single biggest drivers of US coal demand.”¹²⁴ Conveniently, BLM is currently beginning a similar review of oil and gas leasing on federal lands and waters, with an interim report on the program and potential reforms still due out in early summer of 2021, just as we round into fall.

As BLM concurrently begins these reviews of the federal fossil fuel estate, it should consider the climate impacts of the programs together in order to adequately capture the choices facing BLM with respect to fossil fuels produced from our public lands.

ii. BLM must acknowledge and reject the myth of “perfect substitution.”

In its upcoming reviews, BLM must disavow a discredited economic assumption known as “perfect substitution,” which obscures the greenhouse gas emissions from coal leases.

¹²⁰ BLM, PEIS Scoping Report at 6-48 (Jan. 2017).

¹²¹ *Id.*

¹²² Matthew D. Merrill, et al., U.S. Geological Survey, *Federal Lands Greenhouse Gas Emissions and Sequestration in the United States: Estimates for 2005–14*, Scientific Investigations Report 2018–5131 (2018), <https://pubs.usgs.gov/sir/2018/5131/sir20185131.pdf>. Attached as Exhibit 41.

¹²³ U.S. Energy Information Administration, Fossil fuel production expected to increase through 2022 but remain below 2019 peak (Jan. 15, 2021), at <https://www.eia.gov/todayinenergy/detail.php?id=46496>. Attached as Exhibit 42.

¹²⁴ BLM 2017 coal scoping report at 5-18.

Rejecting the “perfect substitution” myth is necessary to accurately analyze the impacts of the federal coal leasing program.

Four federal court decisions, from the Ninth, Tenth, and D.C. Circuit Court of Appeals, and the District of Montana, all published since BLM prepared the 2017 scoping report, firmly rejected federal agency NEPA reviews that either denied the proposed fossil fuel project would have any adverse market and climate effect, or claimed that the market effect was too uncertain. Most recently, the Ninth Circuit invalidated a Bureau of Ocean Energy Management (“BOEM”) NEPA review that failed to adequately compare the greenhouse gas emissions of the action and no action alternatives of the Liberty oil and gas drilling project. *Center for Biological Diversity v. Bernhardt*, 982 F.3d 723, 736 (9th Cir. 2020). BOEM concluded that the no action alternative – rejecting the Liberty project – would, counterintuitively, increase greenhouse gas emissions by shifting production to foreign sources with comparatively weaker environmental protections. *Id.* But BOEM’s model assumed foreign consumption of oil would remain static were the Liberty project approved; crucially, this assumption ignored “basic economic principles” that are key to understanding climate impacts. As the Court explained, increasing the supply of fossil fuels such as oil (*i.e.*, approving the Liberty project) reduces prices; as price drops, foreign consumers will buy and consume more oil. *Id.* Thus, the Court concluded, emissions from predictable market responses, whether domestic or foreign “are surely a ‘reasonably foreseeable’ indirect effect” that must be analyzed and disclosed under NEPA. *Id.*

Similarly, the Tenth Circuit Court of Appeals invalidated a BLM NEPA review where the agency asserted that there would be no difference in the market or climate effects of a decision to authorize the expansion of two coal mines that operate of public lands in Wyoming. “Even if we could conclude that the agency had enough data before it to choose between the preferred and no action alternatives, this perfect substitution assumption arbitrary and capricious because the assumption itself is irrational (*i.e.*, contrary to basic supply and demand principles).” *WildEarth Guardians v. BLM*, 870 F.3d 1222, 1236 (2017).

The D.C. Circuit similarly rejected a Federal Energy Regulatory Commission (“FERC”) NEPA review for the Sabal Trail natural gas pipeline where FERC dodged meaningful analysis of substitution effects by asserting that the project’s GHG emissions “might be partially offset” by the market replacing the project’s gas with either coal or other gas supply. *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357, 1375 (D.C. Cir. 2017). The Court dismissed FERC’s failure to study this issue, stating, “[a]n agency decisionmaker reviewing this EIS would thus have no way of knowing whether total emissions, on net, will be reduced or increased by this project, or what the degree of reduction or increase will be. In this respect, then, the EIS fails to fulfill its primary purpose.” *Id.*

The federal district court in Montana, like the Tenth Circuit, rejected a Department of Interior environmental assessment where the agency claimed its decision would not likely have any impact on nationwide GHG emissions because other coal mines would be available to meet a supposedly immutable demand for coal if the agency were to select the no action alternative. *Montana Environmental Information Center v. OSM*, 274 F.Supp.3d 1074, 1098 (D. Mont. 2017). In *MEIC*, the federal Office of Surface Mining Reclamation and Enforcement (“OSM”) asserted in

its environmental assessment that, “[t]he No Action Alternative would not likely result in a decrease in CO₂ emissions attributable to coal-burning power plants in the long term. There are multiple other sources of coal that could supply the demand for coal.” *Id.*

The *MEIC* court squarely rejected OSM’s assertion:

This conclusion is illogical, and places [OSM’s] thumb on the scale by inflating the benefits of the action while minimizing its impacts. It is the kind of “inaccurate economic information” that “may defeat the purpose of [NEPA analysis] by impairing the agency’s consideration of the adverse environmental effects and by skewing the public’s evaluation of the proposed agency action.”

Id. (quoting *NRDC v. Forest Service*, 421 F.3d 797, 811 (9th Cir. 2005)).

This long line of cases provides BLM and the Department of the Interior with ample justification to acknowledge and reject past assumptions of perfect substitution that downplayed the significance of agency actions with respect to climate change. Indeed, in correcting these prior analytic errors, BLM must acknowledge its past reliance on perfect substitution and explain why that approach was wrong. *W. Deptford Energy, LLC v. FERC*, 766 F.3d 10, 17 (D.C. Cir. 2014) (agencies “cannot depart from [prior] rulings without provid[ing] a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored”); *Wis. Valley Improvement v. FERC*, 236 F.3d 738, 748 (D.C. Cir. 2001) (“an agency acts arbitrarily and capriciously when it abruptly departs from a position it previously held without satisfactorily explaining its reason for doing so”).

iii. Multiple economic models are available to inform BLM’s review.

There are a variety of economic models available to BLM that would allow the agency to reasonably assess the market and substitution effects of various alternatives here. Using these models would inform BLM and the public’s understanding of how considered alternatives would alter the mix of fuels used to generate electricity in the U.S. NEPA requires agencies to use the tools available to them in order to ascertain essential information or explain why they cannot do so. 40 C.F.R. § 1502.21 (c) (formerly codified at 40 C.F.R. § 1502.22).¹²⁵ Under the applicable NEPA regulations, if an agency intends not to include essential information in its NEPA review, it “shall” explain (1) why such essential information is incomplete or unavailable; (2) its relevance to reasonably foreseeable impacts; (3) a summary of existing science on the topic; and (4) the agency’s evaluation based on any generally accepted theoretical approaches. *Id.* § 1502.21(c). Given that other agencies have long used energy models to analyze market and climate impacts of their proposals, that information is plainly “available” within the

¹²⁵ Although the Council on Environmental Quality’s NEPA regulations were amended in 2020, Secretary Haaland has instructed federal agencies within the Department of the Interior not to “apply the 2020 Rule in a manner that would change the application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect on September 14, 2020.” Secretarial Order 3399, Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process (April 16, 2021), available at https://www.doi.gov/sites/doi.gov/files/elips/documents/so-3399-508_0.pdf.

meaning of the regulation, and BLM must utilize these available tools to understand the impacts of various alternatives in this PEIS.

The attached report of economist Dr. Thomas Power¹²⁶ analyzes available energy economy models and concludes that the two models best suited to this type of analysis, based on the prior use by other agencies and the known characteristics of the models, are the Energy Information Administration's ("EIA") National Energy Modeling System ("NEMS"), used by EIA to generate its widely cited Annual Energy Outlook reports, and ICF International's Integrated Planning Model ("IPM"), used by EPA to evaluate market responses to various policy proposals since at least 2004.¹²⁷

EIA's NEMS model is an energy-economy model that projects future energy prices, supply, and demand and can be used to isolate variables such as changes in coal supply and variations in delivered coal price. NEMS uses input data from all sectors of the energy economy to forecast national energy supply and demand balance for varying sets of regulatory and fuel price scenarios. The model has a high degree of sophistication in its structure, which allows the model to give solutions for many types of problems. As noted by the Surface Transportation Board, which used NEMS to evaluate the market effects of a proposal to build a coal rail line, NEMS "not only forecasts coal supply and demand but also quantifies environmental impacts." *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 555 (8th Cir. 2006).

According to ICF, its Integrated Planning Model (IPM) uses a linear optimization framework and can be used to evaluate changes in wholesale power dispatch taking into account system reliability, environmental constraints, fuel choice, transmission, and capacity expansion.¹²⁸ ICF has been used in recent years to evaluate the market and environmental impacts of several high-profile proposals related to the extraction and transportation of fossil fuels, including the U.S. State Department's review of the Keystone XL tar sands pipeline, the Surface Transportation Board's evaluation of the proposed Tongue River Railroad, EPA's evaluation of the Clean Power Plan, the Forest Service's supplemental evaluation of a proposed coal mining loophole for the Colorado Roadless Rule, and Washington Department of Ecology's evaluation of the Millennium Bulk coal export terminal.

New, peer-reviewed scientific literature since the 2016 close of the scoping period for the Programmatic EIS reinforces the conclusion that U.S. federal coal leasing levels exert a substantial influence on the price, and resulting consumption, of coal, particularly in the absence of the federal limits on power plant emissions. In a 2018 paper published in *Nature Climate Change*, Peter Erickson and Michael Lazarus estimated a future reference case for U.S. coal, estimated the quantities of federal production that would be affected by a permanent

¹²⁶ Power Consulting, Inc., *Assessing the Ability of Contemporary Models to Calculate the GHG Implications of Federal Coal Leasing Decisions and Other Federal Energy Management Decisions*, viii (2015). Attached as Exhibit 63.

¹²⁷ *Id. at v. Accord*, Peter H. Howard, "The Bureau of Land Management's Modeling Choice for the Federal Coal Programmatic Review," Institute for Policy Integrity (2016). Attached as Exhibit 44.

¹²⁸ ICF International, *Integrated Planning Model*, available at <http://www.icfi.com/insights/products-and-tools/ipm> (last visited Oct. 1, 2021).

leasing moratorium, and then modeled the market response to those production cuts through 2030.¹²⁹ Their analysis looked at market responses both with and without implementation of the federal limits on coal plant emissions. Employing the Integrated Planning Model (IPM), which includes all U.S. coal resources and power plants, the authors concluded:

For coal, results from IPM indicate that, absent the Clean Power Plan, each EJ [exajoule] of coal no longer supplied (due to lease restrictions) to domestic power markets in 2030 would lead to substitution of 0.31 EJ from other coal supplies, especially from the Illinois Basin and Northern Appalachia. The net drop in national coal consumption would be 0.69 EJ for each EJ of federal coal not produced because of the lease restrictions. Gas consumption would also increase 0.35 EJ, to make up for the lost coal-based electricity.

For coal export markets, we find that each EJ of US coal no longer exported to Asian power markets (e.g., South Korea and the Philippines) would yield a drop in net coal consumption of 0.30 EJ, accounting for partial substitution by other, higher cost sources of coal (e.g., from Indonesia and Australia). This ratio is within the range of results of global steam coal market modeling analysis, which found that each unit of coal not supplied to the Pacific coal market would lead to a reduction in coal consumption of between 0.1 and 0.4 units, depending on whether the supply market was less constrained (lower result) or more constrained (higher result) (Haftendorn et al. 2012).

The higher price of coal would also lead to some switching to natural gas in Asian power markets (less so than in the US, given that gas is more costly and less available in Asia), amounting to an increase in natural gas consumption of 0.07 EJ for every EJ of US coal no longer exported due to the lease restrictions.

In total, for coal, we find that leasing restrictions would reduce production by 5.4 EJ in 2030. The drop in CO₂ emissions from the consumption of federal coal (largely from the Powder River Basin) in that year would be about 490 Mt CO₂, as shown in Fig. 1b. Increased coal and gas supplies from other sources would add back 162 Mt CO₂ and 90 Mt CO₂, respectively, resulting in a net overall reduction in emissions of 240 Mt CO₂.¹³⁰

This analysis, looking at both domestic and international market effects and substitution of gas and other fuels, concludes that, particularly in the absence of the Clean Power Plan or similar federal emissions limits, reductions in federal coal production result in a continued reduction in net emissions.¹³¹ Given the demonstrated availability of modeling tools to

¹²⁹ Peter Erickson and Michael Lazarus, *Would constraining US fossil fuel production affect global CO₂ emissions? A case study of US leasing policy*, *Nature Climate Change* (Jan. 28, 2018). Attached as Exhibit 45.

¹³⁰ *Id.* at 8.

¹³¹ In 2016 Vulcan Philanthropies used ICF's Integrated Planning Model to analyze greenhouse gas savings from various potential federal policies and similarly found significant GHG emissions reductions could be achieved

understand the market and climate response of coal supply decisions, the EA’s refusal to employ available, widely-accepted scientific and economic methods is inexcusable. See 40 C.F.R. § 1502.23 (requiring that environmental analysis include information “of high quality” and must include “[a]ccurate scientific analysis”).

IV. Continuation of the Federal Coal Program Would Require Consultation Under the Endangered Species Act.

We urge BLM to begin a rapid phase out of federal coal leasing. However, to the extent the agency takes any alternative course of action that involves new leasing, BLM’s review must consider the impacts, including climate impacts, on threatened and endangered species. Specifically, BLM must consult with the Fish and Wildlife Service and National Marine Fisheries Service as required by section 7 of the Endangered Species Act to ensure that the combustion and emissions impacts of coal leasing do not further imperil endangered and threatened species.

V. BLM Must Analyze the Non-Climate Public Health and Environmental Impacts of the Federal Coal Program.

The federal coal program causes significant non-climate harms to the environment and public health. We urge BLM to rapidly phase-out coal leasing, which would alleviate these harms. However, to the extent BLM retains an alternative that includes future leasing, the agency must consider the full scope of non-climate harm such an alternative would cause.

A. BLM Must Evaluate and Disclose the Widespread Mortality and Morbidity Caused by Continued Coal Consumption.

NEPA’s requirement that agencies assess foreseeable consequences of their actions includes the foreseeable impacts of coal combustion, including impacts to public health. 42 U.S.C. § 4332(2)(C)(i)-(ii); 40 C.F.R. § 1508.(1)(g); see *W. Organization of Res. Councils v. BLM*, No. CV 16-21-GF-BMM, 2018 WL 1475470 (D. Mont. Mar. 26, 2018) (holding that “NEPA requires BLM to consider in the EIS the environmental consequences of the downstream combustion of the coal, oil and gas resources potentially open to development under these RMPs.”); *WildEarth Guardians v. Bernhardt*, No. CV 17-80-BLG-SPW, 2021 WL 363955, at *7 (D. Mont. Feb. 3, 2021) (holding that agency failed to adequately disclose the “actual effects of that additional pollution [from coal combustion] on human and environmental health”). NEPA further requires agencies to evaluate the environmental justice impacts of their actions; that is whether the harmful impacts of their actions fall disproportionately on people with less political and economic power, such as communities of color or low-income communities. *Vecinos para el Bienestar de la Comunidad Costera*, 6 F.4th at 1330.

through restrictions on the availability of federal coal. Vulcan Philanthropies, *Federal Coal Leasing Reform Options: Effects on CO2 Emissions and Energy Markets* (2016). Attached as Exhibit 53.

Air pollution from burning coal is responsible for significant mortality throughout the United States and the World. “Pollution is the largest environmental cause of disease and death in the world today”¹³² The public welfare losses from the burden of pollution amount to more than \$4-6 trillion per year.¹³³

Air pollution is responsible for millions of deaths annually [nearly 9 million deaths annually].¹³⁴ “Globally, the LLE [loss of life expectancy] from air pollution surpasses that of HIV/AIDS, parasitic, vector-borne, and other infectious diseases by a large margin. It exceeds the LLE due to all forms of violence by an order of magnitude and that of smoking by a third.... The fraction of avoidable LLE from anthropogenic air pollution that can be attributed to fossil fuel use is nearly two-thirds globally, and up to about 80% in high-income countries.”¹³⁵ Mortality from pollution exceeds deaths due to “high-sodium diets (4.1 million), obesity (4.0 million), alcohol (2.3 million), road accidents (1.4 million) or child and maternal malnutrition (1.4 million).”¹³⁶ Air pollution “disproportionately impact[s] ... the health of communities with a low socioeconomic status.”¹³⁷

In 2019 air pollution was the fourth leading risk factor worldwide for early death.¹³⁸ A recent study found that particulate matter pollution from fossil fuel combustion is responsible for approximately 8.7 deaths globally in 2018; that is, one pollutant from fossil fuel combustion is alone responsible for 1 in 5 deaths in the world each year.¹³⁹ This does not account for mortality and morbidity from other pollutants from fossil fuel combustion, such as ozone, mercury, or lead.¹⁴⁰

Air pollution is linked to a staggering number of adverse health impacts:

PM_{2.5} is the best studied form of air pollution and is linked to a wide range of diseases in several organ systems. The strongest causal associations are seen between PM_{2.5} pollution and cardiovascular and pulmonary disease. Specific causal associations have been established between PM_{2.5} pollution and myocardial infarction, hypertension, congestive heart failure, arrhythmias, and

¹³² *Pollution, health and the planet: time for decisive action*, The Lancet (2018). Attached as Exhibit 46.

¹³³ *Id.*

¹³⁴ Lelieveld et al., *Loss of life expectancy from air pollution compared to other risk factors: a worldwide perspective*, Cardiovascular Research (2020). Attached as Exhibit 47.

¹³⁵ *Id.* at 6; Landrigan et al., *The Lancet Commission on pollution and health*, 391 *The Lancet* Commissions 264 (2018) (explaining that mortality from pollution causes “three times more deaths than from AIDS, tuberculosis, and malaria combined and 15 times more than from all wars and other forms of violence.”). Attached as Exhibit 48.

¹³⁶ *Id.* at 471.

¹³⁷ Watts et al., *The 2020 report of The Lancet Countdown on health and climate change: responding to converging crises*, at 23 (2020). Attached as Exhibit 49.

¹³⁸ Health Effects Institute, *State of Global Air* (2020). Attached as Exhibit 50.

¹³⁹ Vohra et al., *Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem, Env'tl. Research* (Apr. 2021). Attached as Exhibit 51.

¹⁴⁰ See also Watts et al., *supra* at 23 (“The overall number of deaths attributable to ambient PM_{2.5} in 2018 was estimated a 3.01 million, a slight increase from the 2.95 million deaths in 2015.”).

cardiovascular mortality. Causal associations have also been established between PM_{2.5} pollution and chronic obstructive pulmonary disease and lung cancer. The International Agency for Research on Cancer has reported that airborne particulate matter and ambient air pollution are proven group 1 human carcinogens.

Fine particulate air pollution is associated with several risk factors for cardiovascular disease, including: hypertension, increased serum lipid concentrations, accelerated progression of atherosclerosis, increased prevalence of cardiac arrhythmias, increased numbers of visits to emergency departments for cardiac conditions, increased risk of acute myocardial infarction, and increased mortality from cardiovascular disease and stroke.

Clinical and experimental studies suggest that fine airborne particles increase risk of cardiovascular disease by inducing atherosclerosis, increasing oxidative stress, increasing insulin resistance, promoting endothelial dysfunction, and enhancing propensity to coagulation.

Emerging evidence suggests that additional causal associations may exist between PM_{2.5} pollution and several highly prevalent non-communicable diseases. These include diabetes, decreased cognitive function, attention-deficit or hyperactivity disorder and autism in children, and neurodegenerative disease, including dementia, in adults. PM_{2.5} pollution may also be linked to increased occurrence of premature birth and low birthweight. Some studies have reported an association between ambient air pollution and increased risk of sudden infant death syndrome. These associations are not yet firmly established, and the burden of disease associated with them has not yet been quantified, and they are therefore included in zone 2 of the pollutome (figure 3).¹⁴¹

“Coal is the world’s most polluting fossil fuel, and coal combustion is an important cause of both pollution and climate change.”¹⁴² “[M]ore than 1 million deaths occur every year as a result of air pollution from coal-fired power, and some 390 000 of these deaths were a result of particulate pollution in 2018.”¹⁴³ Coal combustion is a significant source of cancer.¹⁴⁴ In the United States, while air pollution controls have reduced coal’s mortality rate from approximately 30,000 annually in the late 2000s, air pollution from coal still claims at least 3,000 lives each year.¹⁴⁵ Notably the model used by the Clean Air Task Force to assess annual

¹⁴¹ Landrigan et al., *supra* at 475.

¹⁴² Landrigan et al., *supra* at 462.

¹⁴³ Watts et al., *supra* at 2.

¹⁴⁴ Lin et al., A global perspective on coal-fired power plants and the burden of lung cancer, Environmental Health (2019). Attached as Exhibit 52.

¹⁴⁵ Clean Air Task Force, Toll from Coal Interactive Map, <https://www.catf.us/educational/coal-plant-pollution/>; see Caiazzo et al., Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005, Atmospheric Environment (2013) (finding that electricity generation, primarily coal combustion, results in 52,000 deaths annually).

mortality rates is conservative because it only assesses impacts from particulate matter. In addition to widespread mortality, air pollution from coal continues to cause widespread sickness, including asthma attacks, acute bronchitis, heart attacks, ER visits, and hospital admissions: “Estimates of non-fatal health endpoints from coal-related pollutants vary, but are substantial—including 2,800 from lung cancer, 38,200 non-fatal heart attacks and tens of thousands of emergency room visits, hospitalizations, and lost work days.”¹⁴⁶ Critically, there are no safe limits to particulate matter pollution: “[E]vidence- and risk-based approaches using information from epidemiological studies to inform decisions on PM_{2.5} standards are complicated by the recognition that no population threshold, below which it can be concluded with confidence that PM_{2.5}-related effects do not occur, can be discerned from the available evidence.” 78 Fed. Reg. 3,086, 3,098 (Jan. 15, 2013). “[T]here may be no ‘safe’ levels of PM_{2.5} and ... all levels of PM_{2.5} pose a risk to human health.”¹⁴⁷ “Thus, even when NAAQS are not violated as to this particulate matter, the record reflects that exposure to PM_{2.5} will increase the risk of asthma, heart attacks, and death.” *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 92 (4th Cir. 2020).

Coal plants are also major sources of toxic pollution, such as lead, mercury, cadmium, arsenic, and the radioactive metals thorium, uranium, polonium and others.

Heavy metals never disintegrate, do not degrade, and cannot be destroyed. Therefore their deposition in the environment from sources such as coal fired power plants, steadily adds to existing concentrations, year after year. The world environment is more toxic now than it was prior to coal combustion, and will be more toxic 20 years from now if coal burning is not reduced.

Many of the toxins in coal combustion emissions have multiple adverse health effects. The heavy metals for example, can be both carcinogenic and neurotoxic. The U.S. Center for Disease Control ranks toxic heavy metals as the number one environmental health threat to children. Recent research on the effects of lead pollution, for example, invalidates the notion that exposure to lead is safe below a particular threshold concentration. In fact, a recent study showed that even minute concentrations of lead were associated with IQ loss, and that the average teenager lost 9 IQ points due to the levels of lead in their blood.

Those average levels were assumed to be benign as recently as ten years ago.

Coal-burning power plants are now the primary source of lead exposure for young children in most of the United States. The loss of intellectual capacity from unnecessary exposure to lead is not only a personal and social tragedy, it has

¹⁴⁶ Epstein et al., Full cost accounting for the life cycle of coal, *Annals of the N.Y. Acad. of Sciences* at 85 (2011). Attached as Exhibit 54.

¹⁴⁷ *Id.*

caused a drastic reduction in the productivity of the workforce in the economies of countries that obtain their energy primarily from burning coal.

As toxic as lead is, mercury is several orders of magnitude even more toxic to brain and nerve cells. The single largest source of environmental exposure to mercury in the United States (65%) is from coal-fired power plants.

As an indication of its potency, just 1/70th of a teaspoon of mercury deposited in a 25-acre lake can make all of the fish in that lake unsafe to eat for a year.

It is estimated that over 6 million acres of lakes, reservoirs, and ponds in the United States have unsafe concentrations of mercury.

In 48 of the 50 states, wild fish cannot be eaten because their methyl mercury exceeds safe levels.

A typical coal-fired power plant without modern pollution controls emits 170 pounds of mercury each year. In 2009, coal-fired power plants in the United States released 134,365 pounds (more than 67 tons) of mercury into our environment. Mercury emitted from coal plants in Asia is transported to the northwestern United States. Studies show that that 18-24% of the mercury deposited in the United States originates in Asia. Fish in Glacier National Park have been found to have mercury concentrations that approach or exceed EPA criteria for protection of human health. A recently released report by the Biodiversity Research Institute revealed that in 25 countries throughout the world, distant air emissions from mercury from coal fired power plants and other industrial sources, are causing high levels of mercury in fish throughout the world, and the end result is more than 55% of women have enough mercury in their blood and bodies to cause intellectual harm to the babies they give birth to.

One of the most obvious and destructive environmental consequences of the climate crisis are massive wildfires that tragically have become routine for months of the year, and a growing disaster on just about every continent throughout the world, including in far north latitudes like Siberia. Because of decades of coal fired power plant emissions into the upper atmosphere, the global environment has been contaminated with toxic heavy metals. Wildfires have been shown to mobilize, re-suspend and expand the distribution of neurotoxins like mercury that has accumulated in ecosystems destroyed in these enormous conflagrations.

There is substantial evidence that the neurotoxic effects of methylmercury in the presence of other heavy metals in blood and tissues is not merely additive, but is synergistic, amplifying the neurotoxic effects of all those metals.

Child development experts have recently warned of an increasing chemical and metal brain toxicity causing a silent “global pandemic” of a wide spectrum neurobehavioral disorders and intellectual compromise in children.

Even without invoking synergism, adding the demonstrable IQ loss from lead, and the expected IQ loss from mercury suggests that modern day children could be losing an astonishing 14 IQ points from these two heavy metals whose main sources are coal combustion emissions.

A standard deviation of I.Q. is 15 points. If the next generation of American workers were to be spared from both methylmercury and lead exposure, their average I.Q. could be expected to be a standard deviation higher. The loss of intellectual capacity for one individual is a personal tragedy. The loss of intellectual capacity for an entire generation is a national crisis. Even a modest national decline of 5 IQ points causes a 57 percent increase in the number of children categorized as mentally deficient (<70 points) and a 40 percent decrease in the number of children categorized as gifted (>130 points).

Recent epidemiological and macroeconomic studies imply that this loss of intellectual capacity is drastically reducing the productivity of the Nation’s workforce. National average I.Q. has a strong correlation with GDP per worker. Research suggests that while an increase of 1 standard deviation results in a 15% increase in average wages, it results in national productivity increases of approximately 150%, due to a multitude of external effects of intellectual capacity on productivity.¹⁴⁸

The costs of the health impacts of air pollution from coal are staggering, costing the public tens of billions to over one hundred billion dollars in harm annually.¹⁴⁹ The total annual externalized costs of coal pollution on the public are hundreds of billions to nearly a trillion dollars, significantly exceeding the value of coal to the public.¹⁵⁰

While these impacts are dramatic, BLM must certainly compare the impacts to the public to the jobs created by coal mining. One recent economic analysis compared the costs of coal with the jobs generated by coal mining:

For example, the IMF in 2014 calculated that the social costs of coal from air pollution (not including CO₂) were \$5.5/GJ of energy. There were about 50,000 jobs in coal mining last year in the US, more or less (more if you include related jobs, less if you just think miners). Each ton of coal contains roughly 22 GJ of

¹⁴⁸ Declaration of Brian Moench, M.D., ¶¶ 11-24 (internal citations omitted). Attached as Exhibit 62.

¹⁴⁹ Epstein et al., *supra* at 86.

¹⁵⁰ Epstein et al., *supra* at 85; Muller et al., *Environmental Accounting for Pollution in the United States Economy*, Am. Econ. Rev. (2011), attached as Exhibit 55; Machol & Rizk, *Economic value of U.S. fossil fuel electricity health impacts*, Env’tl. Int’l (2013). Attached as Exhibit 56.

energy. US production in 2016 was 738 million short tons. Put those together you get external costs of 1.79 million dollars per miner. Let that number sink in for a second. To the extent that these costs are not priced or regulated, they are considered as an implicit subsidy to fossil fuels, and that's in a publication dedicated to Gary Becker (a famously conservative "Chicago" economist).

But those statistics are pretty impersonal. A more telling (and tolling) calculation comes from studies looking at the health—or rather death—consequences of pollution. A 2013 study from MIT found that pollution (specifically particulate matter, SO₂, and NO_x, an ozone precursor) from electricity generation causes 52,000 premature deaths annually, mostly from the fine particles associated with coal-fired generation. They have a nifty graphic showing that largest impact hovers over the east-central United States and in the Midwest, where the power plants tend to use coal with high sulfur content. This study only gets at how many people die every year from power sector emission and leaves out morbidity and damages to ecosystems, agricultural production etc.

Coal-fired generation creates on average 5 times the pollution of natural gas. At the time of the MIT study (2005), given the generation shares, roughly 90% of the power sector emissions were coming from coal. Put these numbers together and you can ballpark an estimate of what these studies suggest in terms of mortality alone. It's very much back of the envelope and maybe we'll write a paper to do this more precisely, but we were shocked by the outcome. **Someone dies each year for every one to two coal mining jobs.** Yes. You read that right. Let that sink in. To be completely fair here, we are assuming that coal is being replaced with some happy shiny non-polluting renewable energy source.

This fact is clearly not the fault of the miners. These are great jobs to have: they pay well and do not require hugely costly training. But, what this does mean is that if we keep on pushing the further extraction of dirty coal (clean coal is fiction and if you like fiction, call us, we have recommendations), we are implicitly subsidizing the deaths of the many people living within the range of power plant emissions. And this is not a good thing.

Why the focus on coal jobs? We are not political scientists by training, but even we understand these mining jobs are in politically important areas. But from a societal welfare point of view, we are making a huge deal out of a profession that is clearly dying out. The fast-food chain Arby's now employs one and half times the number of people the US coal mining industry does. This does not mean we should subsidize hamburgers and fries. (Those may kill more people than coal, but that is for another blog.)

The issue, of course, is that something has to be done about the structural economic crises in the mining communities. This is a global, not just a US issue. There is evidence from Poland that miners once unemployed stay inactive for

longer than people in other professions. The goal here has to be a way to train miners in these communities in jobs of the present or the future—not the energy equivalent of Blockbuster.¹⁵¹

In short, BLM must disclose to the public that the federal coal leasing programs kills and sickens great numbers of people each year. These impacts cost the public enormously, demonstrating one of the many hidden subsidies of coal mining in the United States. It is clear that the most efficient, defensible, and just approach would be to end leasing and extraction of public coal and simply pay individual coal miners to be retrained and coal communities to develop sustainable economic foundations.

VI. BLM Must Acknowledge the Widespread Failure to Contemporaneously Reclaim Mined Lands.

BLM's upcoming review must examine the impacts of federal coal leasing in light of the coal industry's profound failure to meet obligations to reclaim mined land. The Surface Mining Control and Reclamation Act ("SMCRA"), 30 U.S.C. §§1201-1328, establishes minimum federal standards for the regulation of coal mining. But coal-mine operators almost universally fail to meet SMCRA's reclamation standards, and increasingly fall short of their bonding obligations.

As Navajo Nation President Nez recently wrote in a letter to the U.S. House Natural Resources Committee, addressing reclamation failures at the Black Mesa and Peabody's Kayenta Mine, "the mines are closed, the Navajo Generating Station (NGS) is shuttered, and all we're left with is an ecologically devastating and socially unhealthy mess that no one is stepping up to fix."¹⁵²

But the experience at Kayenta mine is not an outlier. The National Wildlife Federation, Western Organization of Resource Councils, and Natural Resources Defense Council published a report in 2015, "Undermined Promise II," documenting reclamation and enforcement failures under SMCRA.¹⁵³ Of 287,442 acres of disturbed land in Montana, North Dakota and Wyoming, only 29,673 acres had achieved Phase III bond release, demonstrating successful establishment of vegetation and soils to satisfy permit requirements for post mining land uses.¹⁵⁴ 257,769 acres—or more than *400 square miles*—remained unreclaimed by federal standards. In addition, reclamation that is accomplished often is inadequate to restore pre-mining conditions, particularly hydrologic and habitat conditions. As the report concluded, "[m]ining always alters the ecosystem – topography is gentler, shrub density is lighter, water balance is altered. The long term and cumulative impacts of coal mining and reclamation are significant and often permanent."¹⁵⁵ BLM's upcoming review must acknowledge the failure of SMCRA's contemporaneous reclamation standards and analyze pathways to fully reclaim mined lands

¹⁵¹ Auffhammer & Fischer, Putting Coal Jobs in Perspective, Blog, Resources for the Future (2017). Attached as Exhibit 57.

¹⁵² Navajo Nation Letter to House Natural Resources Committee (June 29, 2021), attached as Exhibit 58.

¹⁵³ WORC et al., UNDERMINED PROMISE II (June 2015), attached as Exhibit 59.

¹⁵⁴ *Id.* at 7

¹⁵⁵ *Id.* at 25.

while providing economic activity to former coal communities through an increased investment in reclamation efforts.

VII. BLM Should Examine Coal Exports and Attempts by Coal Producing States to Prop Up Coal Mines by Creating New Export Infrastructure.

Federal coal leasing affects the environment at each stage of the coal lifecycle, including mining, shipping, and end use consumption, whether for burning or in industrial applications. Coal export expands and intensifies this lifecycle. Exports can also affect coal price and increase coal consumption and send market signals that prop up the coal production industry. NEPA requires that federal agencies consider the reasonably foreseeable direct and indirect impacts of their actions, even if the extent of these impacts is not known. *See* 42 U.S.C. § 4332(2)(C), 40 C.F.R. § 1508.8; *see also Mid States Coal. for Progress*, 345 F.3d at 549-550 (finding that the agency should examine the rail project’s reasonably foreseeable effect of increasing coal consumption).

The activities associated with coal leasing dramatically increase air emissions, hazard risk and negative impacts to health. Exporting coal exacerbates these affects because export demands more transport through communities along the line and near ports, involves greater distances, requires expanded infrastructure (*e.g.*, ports, rail lines), and increases emissions due to often softened regulations overseas related to transport and combustion, compared to domestic emissions. Recent reports have shown an increased willingness of state officials in coal producing states to attempt to secure even far-fetched export opportunities.¹⁵⁶ BLM’s upcoming review must analyze each of these impacts.

At minimum, the PEIS should analyze the following:

Rail-related impacts: BLM must analyze the impacts to wildlife and human health of coal traffic due to exports along the entire route from federal lands to existing and contemplated coal ports. Coal can be transported more than a thousand miles by rail just to reach this first stop before being shipped overseas. Impacts to analyze include, but are not limited to: the air quality impacts of rail traffic, noise impacts of rail traffic, fish and wildlife impacts of rail traffic, and water quality impacts. Such an analysis must take into account the potential for spills and/or derailments and the impacts such events may have on land, water, fish, wildlife, and air.

Port-related impacts: BLM must analyze the impacts from unloading coal from trains, loading coal onto barges and/or ships, constructing and/or maintaining port facilities, and the impacts of port operations, including ship, locomotive, and/or truck operations. Such impacts include air quality impacts of all port operations, including ship, locomotive, and truck

¹⁵⁶ *E.g.*, Memo Shows Involvement of Utah Agency and Two Tribes in North Coast Coal Export Proposal (Sept. 21, 2021), <https://huffman.house.gov/media-center/in-the-news/memo-shows-involvement-of-utah-agency-and-2-tribes-in-north-coast-coal-export-proposal> (last visited Oct. 2, 2021).

emissions, water quality impacts (including wetland impacts), and fish and wildlife impacts, and impacts to human health and safety.

Shipping impacts: BLM must analyze the impacts of shipping coal both within US waters and through international waters. Specifically, the analysis must include air quality impacts, impacts to water quality (particularly through discharge from ships), and impacts to river and ocean species, especially species listed as threatened or endangered under the Endangered Species Act.

Coal unloading impacts at overseas ports: The review must analyze the impacts of unloading coal from ships and loading coal onto trains and/or trucks at Asian, South American and European ports, and wherever else coal is exported.

Coal transport overseas: The review should analyze the impacts of transporting coal from ports in Asia, Europe and Latin America to facilities on those continents. This analysis must include impacts of transport by rail or truck.

Coal combustion overseas: The review must analyze the impacts of processing and combusting coal from federal lands. This includes but is not limited to analyzing the air quality impacts of coal combustion (including greenhouse gas emission impacts), water quality impacts, coal ash disposal impacts, fish and wildlife impacts, impacts to human health and safety, and impacts to lands.

VIII. BLM Must Evaluate the Socioeconomic Impacts of Federal Coal Leasing and Opportunities to Ensure an Economically Just Transition of Coal-Dependent Communities to a Renewable Energy Future.

Consistent with President Biden’s Executive Order 14008,¹⁵⁷ BLM’s review of the coal program should evaluate the socioeconomic impacts of federal coal leasing on local communities where mines are located and opportunities to help ensure an economically just transition for those communities. Recognizing that coal mining and power plant communities have often borne the burden of economic shifts away from resource extraction dependence, in January 2021, President Biden directed “[f]ederal leadership” to commit to the “economic revitalization of and investment in [these impacted] communities.”¹⁵⁸ President Biden’s directive, embodied in E.O. 14008, likewise advanced environmental justice as a key consideration in governance, which includes “investing and building a clean energy economy . . . turning disadvantaged communities . . . into healthy, thriving communities.”¹⁵⁹ To that end, the order directs agencies to make “achieving environmental justice part of their missions by developing . . . policies . . . to address the disproportionately high adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”¹⁶⁰ In light of these

¹⁵⁷ EO 14008, *supra* note 3.

¹⁵⁸ *Id.* at 7628.

¹⁵⁹ *Id.* at 7629.

¹⁶⁰ *Id.*

directives, BLM’s review of the federal coal program should closely examine the socioeconomic impacts of the federal coal program and explore, among other things, opportunities for robust investment in community economic development, protecting worker livelihoods, and replacing lost tax revenues to aid miners and coal communities. The measures should not be limited to what BLM alone can accomplish, but include actions that other agencies and Congress can take.¹⁶¹

A. BLM Must Objectively Evaluate the Socio-Economic Impacts of the Federal Coal Program on Coal Mining Communities.

As a threshold matter, BLM should interrogate the prolific and misguided assumption that economic benefits to impacted coal mining communities automatically flow from coal development without associated harm. As BLM summarized in the 2017 PEIS Scoping Report, coal mining can cause both socioeconomic benefits and damage.¹⁶² Only after understanding the characteristics associated with coal mining that can limit the industry’s ability to support sustained economic development can a strategy to integrate coal mining into a local economic development strategy be crafted.

BLM cannot assume that coal mining has only beneficial economic impacts because history shows otherwise. Coal mining can in some instances pay relatively high wages, and those mines that are located on public lands can make substantial payments to local, state, and federal governments, helping them to fund important public services. But the financial contributions of coal mining are often the only economic characteristics mentioned in federal agency NEPA reviews. Concluding that expanded or continued coal mining will have a positive impact on coal-dependent communities or that declines in coal mining will have catastrophic impacts on such communities is incomplete, misleading, and cannot be used to guide public decision making.

Empirical economic studies on the relationship between coal mining and local economic vitality and well-being contradict the rosy picture of coal mining’s socio-economic impacts. For example, historical evidence shows that: coal and other metal mining have often failed to bring sustained prosperity to adjacent communities; that counties that rely more heavily on natural resource extraction experience less economic growth than counties with more diverse economic portfolios; that while coal and mining booms result in few additional jobs outside the mining sector, busts cause a greater loss in local employment; that a high share in coal employment in a county was correlated with a lower rate of self-employment, indicating that reliance on mining may restrain entrepreneurial activity.¹⁶³ The attached report by Power

¹⁶¹ Forty Questions, 46 Fed. Reg. at 18,031 (“All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperation agencies”).

¹⁶² 2017 PEIS Scoping Report, at 5-34 to 5-56.

¹⁶³ With these comments, we submit a report by Ph.D. economist Thomas Power from 2016 that provides recommendations regarding the proper scope and methodology for BLM’s economics analysis. See Power Consulting, Inc., *The Economic Consequences of the Federal Coal Leasing Program: Improving the Quality of the Economic Analysis* (July 27, 2016). Attached as Exhibit 43.

Consulting, Inc. describes in detail studies supporting these conclusions.¹⁶⁴ BLM must take this evidence into account in preparing its socio-economic analysis.

In its review of the federal coal program, BLM must analyze the area where the impacts of the program are likely to be most significant and measurable: the county in which the mine is located or the majority of impacts are likely to occur. Focusing solely on a larger area is likely to mask how coal mining can affect local communities, as the impacts from coal mining will be overwhelmed by other sectors of the economy. For this reason, the Power Consulting report recommends focusing the analysis on the 51 rural counties where coal mining provided more than 5% of the employment in 1990.¹⁶⁵ The data Power analyzed shows such coal dependent communities experienced slower job growth, lower real earnings, lost more population, and recovered from economic downturns more slowly, “reflect[ing] the instability of coal mining employment.”¹⁶⁶ This is the type of information that should inform BLM’s analysis as the agency attempts to understand how the federal coal program impacts local mining economies.

B. BLM Should Explore Opportunities to Secure an Equitable Transition to a Clean Energy Economy.

For communities already engaged in coal development, BLM should identify opportunities that help ensure a fair and just transition to a clean energy economy for all people. While the transition from dirty fuels to clean energy will create many more jobs than those lost, we must not ask workers and communities that have helped power our country to bear the burden of this energy transformation that will benefit everyone. Identified measures should drive sustainable investment and job creation in regions where the coal industry has abused and abandoned the land, air, water and people.

On the most fundamental level, “just transition” refers to a path or plan for workers displaced by transformations in the economy.¹⁶⁷ BLM should identify measures for a fair and just transition in which affected workers, their unions, and other impacted communities are equal partners in a well-planned, carefully negotiated and managed transition from fossil fuels to clean energy. Consistent with President Biden’s E.O. 14008, such measures should bring good job opportunities to those traditionally left behind and job security and livelihood guarantees to affected workers.¹⁶⁸ Workers’ pensions and health care benefits should be preserved, and workers and members of affected communities should receive right of first employment for any jobs that are created by power plant decommissioning or site reclamation. Healthcare should also be provided to workers and other members of the local community

¹⁶⁴ *Id.* at 8-13.

¹⁶⁵ *See id.* at 13-18.

¹⁶⁶ *Id.* at 18.

¹⁶⁷ Labor Network for Sustainability, *Strategic Practice Grassroots Policy Project, “Just Transition” – Just What Is It?: An Analysis of Language, Strategies, and Projects*, at 22 (2016). Attached as Exhibit 60; Caroline Farrell, *A Just Transition: Lessons Learned From the Environmental Justice Movement*, 4 DUKE FORUM FOR LAW & SOCIAL CHANGE 45 (2012). Attached as Exhibit 61.

¹⁶⁸ E.O. 14008 at 7622.

experiencing health impacts associated with coal development. In addition, BLM should evaluate measures in which workers receive education and training for industries, ideally unionized, with similar pay and benefits. Among other things, as BLM has noted, “BLM could seek to secure Congressional authorization to direct a portion of increased Federal coal revenues toward such community assistance programs.”¹⁶⁹

Measures for a fair and just transition also should engage every level of government and business in an effort to maximize public and private investments in economic development and diversification; mitigate any impacts in a transition to a clean energy economy; provide workforce training; replace lost tax revenues; and create lasting, good jobs that strengthen the economy and sustain working families—especially jobs related to clean energy, energy efficiency, and climate-resilient infrastructure. Finally, such measures should ensure that the mining companies responsible for harmful pollution are held accountable for cleaning it up so that communities are left with usable land and clean water.

IX. Conclusion

BLM’s review of the climate, public health, and environmental justice impacts of the federal coal leasing program comes at a crucial time, with both the United Nations Secretary General and President Biden calling the climate crisis a “code red for humanity.”¹⁷⁰ The Biden administration has accordingly set robust, science-based climate goals, requiring steep reductions in GHG emissions in both the near-term and by mid-century. Despite the clear science, the New England Journal of Medicine’s recent editorial is blunt: “The greatest threat to global public health is the continued failure of world leaders to keep the global temperature rise below 1.5°C.”¹⁷¹ The only way to meet those goals is to rapidly end the practice of mining, shipping, and burning coal, oil, and gas from public lands and waters. Doing so is well within the Secretary’s authority, and can be accomplished while investing in communities that previously relied on fossil fuels as part of an equitable transition to a cleaner, sustainable economy.

Thank you for your attention to these critically important issues.

Sincerely,

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¹⁶⁹ 2017 PEIS Scoping Report, at 6-39.

¹⁷⁰ Biden Remarks to UN, *supra* note 1.

¹⁷¹ New England Journal of Medicine, *supra* note 61.

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