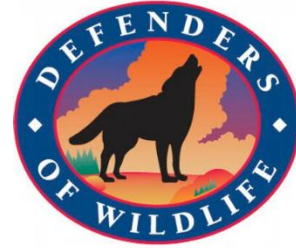




**EARTHJUSTICE**



**SIERRA  
CLUB**



July 28, 2016

Coal Programmatic EIS  
Scoping, Bureau of Land Management,  
20 M St. SE., Room 2134LM,  
Washington, DC 20003  
BLM\_WO\_Coal\_Program\_PEIS\_Comments@blm.gov

*VIA EMAIL; EXHIBITS BY FEDERAL EXPRESS OVERNIGHT DELIVERY*

**RE: Notice of Intent to Prepare a Programmatic Environmental Impact Statement To Review the Federal Coal Program, 81 Fed. Reg. 17,720 (Mar. 30, 2016)**

To Whom It May Concern:

On behalf of Earthjustice, Sierra Club, Defenders of Wildlife, and our millions of members and supporters nationwide, we submit these comments regarding the U.S. Bureau of Land Management's ("BLM") Notice of Intent to Prepare a Programmatic Environmental Impact Statement to Review the Federal Coal Program.<sup>1</sup> At the outset, we appreciate the opportunity to provide input on BLM's important decisions regarding the future of the federal coal program. BLM's decision to undertake programmatic environmental review under the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, comes at a critical time. While U.S. demand for coal is at an historic low, the demand for immediate action to address the acute threats of climate disruption could not be greater. President Obama has described the imperative in unequivocal terms:

The science is stark. It is sharpening. It proves that this once-distant threat is now very much in the present ... But the point is that climate change is no longer some far-off problem. It is happening here. It is happening now. Climate change is already disrupting our agriculture and ecosystems, our water and food supplies, our energy, our infrastructure, human health, human safety – now. Today. And climate change is a trend that affects all trends – economic trends, security trends. Everything will be impacted. And it becomes more dramatic with each passing year.<sup>2</sup>

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<sup>1</sup> 81 Fed. Reg. 17,720 (Mar. 30, 2016) (hereafter, "Notice of Intent" or "NOI").

<sup>2</sup> President Obama, Remarks by the President at the Glacier Conference -- Anchorage, AK (Sept. 1, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/09/01/remarks-president-glacier-conference-anchorage-ak> (last visited July 18, 2016).

In evaluating the future of the federal coal program, BLM has an unprecedented opportunity to stanch the flow of greenhouse gases into our atmosphere to avoid a climate catastrophe. Indeed, in 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. Future mining and burning of federal coal at current levels would undermine the nation's pledge to reduce climate emissions by 26-28% by 2025 and by 80% by 2050. Simply put, it would appear to be nearly impossible for the federal coal program to continue with business as usual—or to continue at all—if the nation is to meet these commitments.

Below, we describe the appropriate scope of BLM's federal coal program programmatic environmental impact statement ("PEIS"). BLM must comprehensively evaluate the direct, indirect, and cumulative impacts of federal coal leasing, including impacts from coal production, transportation, and combustion. These include climate disruption spurred by coal burning; impacts to public lands, water, and wildlife; impacts on communities beyond the coal fields; economic consequences, including the harmful effects of boom and bust natural resource extraction; impairment to land from unfulfilled reclamation obligations backed by unsecured promises from bankrupt coal companies; impacts of transporting and exporting coal for energy production abroad; and the failure of coal producers to pay American taxpayers a fair return for exploiting a public resource, including the environmental and costs of climate disruption perpetuated and enhanced by burning fossil fuels.<sup>3</sup> The PEIS should comprehensively evaluate the overwhelmingly negative consequences of mining, transporting, and burning federal coal, as well as opportunities to avoid or mitigate those impacts.

BLM also must satisfy its NEPA obligation to evaluate feasible alternatives to the status quo that would satisfy the needs for federal action. This alternatives analysis is the key to the PEIS, because it represents the choice we have as a nation to meet the challenges of climate change. While the status quo is untenable, BLM has the authority, opportunity, and imperative make changes to the federal coal program that are urgently needed to avoid condemning future generations to a climate disaster. We urge BLM to adopt a preferred alternative in the PEIS that will phase out federal coal leasing, meet U.S. energy needs with 100 percent clean sources of energy, and require coal producers with existing leases to take immediate steps to limit and offset emissions of greenhouse gases that are hastening global climate disruption. BLM also must consider an alternative that would require coal producers to pay to American taxpayers royalties on federal coal sales that reflect the extraordinary costs of mining and burning coal on our global climate. Such an alternative not only ensures a fair return to the public for the coal industry's exploitation of public resources, it may effectively halt coal production where the social costs of mining outweigh any benefit it might yield.

In sum, while comprehensive analyses of the federal coal program's social, environmental, and economic consequences are critical to BLM's evaluation of the need for

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<sup>3</sup> With these comments, we submit a report by Ph.D. economist Thomas Power 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 Ex. 1.

program reforms, those analyses can point in only one direction. BLM should end federal coal leasing.

## BACKGROUND

### I. NEPA

NEPA “is our basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). NEPA has two fundamental purposes: (1) to guarantee that agencies take a “hard look” at the consequences of their actions before the actions occur by ensuring that “the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts,” Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989); and (2) to ensure that “the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision,” *id.* at 349. NEPA “emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that ‘the agency will not act on incomplete information, only to regret its decision after it is too late to correct.’” Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1216 (9th Cir. 1998) (internal citation omitted).

Pursuant to NEPA, “all agencies of the Federal Government shall ... include in every recommendation or report on ... major Federal actions significantly affecting the quality of the human environment, a detailed statement ... on the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, alternatives to the proposed action” (including a “No Action” alternative), and other environmental implications of the action. 42 U.S.C. § 4332(2)(C). This Environmental Impact Statement (“EIS”) helps to ensure “that environmental concerns [will] be integrated into the very process of agency decision-making.” Andrus v. Sierra Club, 442 U.S. 347, 350 (1979).

[B]y requiring agencies to take a ‘hard look’ at how choices before them affect the environment, and then place their data and conclusions before the public, NEPA relies upon democratic processes to ensure—as the first appellate court to construe the statute in detail put it—that the ‘most intelligent optimally beneficial decision will ultimately be made.’

Or. Nat. Desert Ass’n v. BLM, 625 F.3d 1092, 1099-1100 (9th Cir. 2010) (quoting Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n, 449 F.2d 1109, 1114 (D.C. Cir. 1971)).

Federal agencies must analyze direct, indirect, and cumulative impacts. See 42 U.S.C. § 4332(2); 40 C.F.R. §§ 1508.7, 1508.8. Indirect impacts “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). NEPA affirmatively requires “reasonable forecasting,” and requires agencies to provide information that is “essential to a reasoned choice among alternatives,” where the cost of obtaining the information is not exorbitant.

40 C.F.R. § 1502.22(a); Scientists' Inst. for Pub. Info. v. Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

A thorough consideration of available alternatives is the “heart” of any NEPA analysis. 40 C.F.R. § 1502.14. Agencies must “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” Id. Further, NEPA requires agencies to “[r]igorously explore and objectively evaluate all reasonable alternatives” and to “[d]evote substantial treatment to each alternative considered.” Id. at § 1502.14(a), (b).

NEPA’s statutory language also requires agencies to identify measures to mitigate the adverse environmental impacts of their actions. Robertson, 490 U.S. at 351-52; Holy Cross Wilderness Fund v. Madigan, 960 F.2d 1515, 1522 (10th Cir. 1992); 40 C.F.R. §§ 1502.14(f), 1502.16(h). The Council on Environmental Quality (“CEQ”) has stated: “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 ....”<sup>4</sup> According to the CEQ, “[a]ny such measures that are adopted must be explained and committed in the [final decision].”<sup>5</sup> Further, an agency’s analysis of mitigation measures “must be ‘reasonably complete’ in order to ‘properly evaluate the severity of the adverse effects’ of a proposed project prior to making a final decision.” Colo. Env’tl Coalition v. Dombeck, 185 F.3d 1162, 1173 (10th Cir. 1999) (quoting Robertson, 490 U.S. at 352). Mitigation “must be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated.” City of Carmel-by-the-Sea, v. United States Dept. of Transp., 123 F.3d 1142, 1154 (9th Cir. 1997) (quoting Robertson, 490 U.S. at 353).

NEPA recognizes the need for programmatic environmental review when the connected actions under a federal program “will have a compounded effect on a region.” Nat’l Wildlife Fed’n v. Appalachian Reg’l Comm’n, 677 F.2d 883, 888 (D.C. Cir. 1981); see also City of Tenakee Springs v. Block, 778 F.2d 1402, 1407 (9th Cir.1985) (“Where there are large-scale plans for regional development, NEPA requires both a programmatic and a site-specific EIS. 40 C.F.R. § 1508.28, 1502.20[.]”).

The thesis underlying programmatic EISs is that a systematic program is likely to generate disparate yet related impacts. This relationship is expressed in terms of ‘cumulation’ of impacts or ‘synergy’ among impacts that are caused by or associated with various aspects of one big Federal action. ... In evaluating a comprehensive program design an agency administrator benefits from a programmatic EIS which indubitably promotes better decisionmaking.

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<sup>4</sup> Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,031 (Mar. 23, 1981) (hereafter “Forty Questions”).

<sup>5</sup> Id. at 18,036.

Id. (quotation and alternation omitted).

“Ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action.” 40 C.F.R. § 1500.1(c).

## **II. THE TIME IS RIGHT FOR PROGRAMMATIC REVIEW OF THE FEDERAL COAL LEASING PROGRAM**

### **A. Background on Federal Coal Leasing Program**

#### **1. BLM’s Coal-Leasing Process**

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 lease (or not to lease) public lands for coal mining operations after conducting a competitive bidding process. See 30 U.S.C. § 201(a)(1). Pursuant to this authority, the Secretary promulgated regulations that delegate authority to BLM to administer two different coal leasing processes: (1) the regional leasing process, which applies in areas designated as “coal production regions,” see 43 C.F.R. §§ 3420.2–3420.5-2; and (2) the leasing-by-application process, which applies in all other areas, see id. pt. 3425. Both processes are forms of competitive leasing, and allow BLM to accept only bids that meet or exceed fair market value, as determined by an appraisal. See id. § 3422.1; 30 U.S.C. § 201(a).

The regional leasing process applies to areas designated as “coal production regions,” and requires BLM to set “regional leasing levels.” 43 C.F.R. § 3420.2. Regional leasing levels account for “U.S. coal production goals and projections of future demand for Federal coal;” “national energy needs;” “industry interest in coal development in the region;” [t]he level of competition within the region;” “[a]dvice from Governors of affected States as expressed through the regional coal team;” and the potential economic, social, and environmental effects of coal leasing on the region. Id. The “regional coal team” then ranks lease tracts for desirability for coal leasing based on “coal economics[,] impacts on the natural environment[,] and socioeconomic impacts.” Id. § 3420.3-4(a).<sup>6</sup> BLM prepares a programmatic environmental impact statement analyzing various leasing scenarios that meet the regional leasing levels, considering:

- (1) The site-specific potential environmental impacts of each tract being considered for lease sale; and

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<sup>6</sup> The “regional coal team” consists of “a Bureau of Land Management field representative for each state in the region, who will be the Bureau of Land Management State Director, or, in his absence, his designated representative; the Governor of each state included in the region or, in his absence, his designated representative; and a representative appointed by and responsible to the Director of the Bureau of Land Management.” 43 U.S.C. § 3400.4(a).

(2) The intraregional cumulative environmental impacts of the proposed leasing action and alternatives, and other coal and noncoal [sic] development activities.

Id. § 3420.3-4(c).

By contrast, the leasing-by-application process applies primarily in “areas outside coal production regions,” id. § 3425.0, and requires applicants to propose specific tracts of federal lands for leasing, id. §§ 3425.0-2–3425.5. The leasing-by-application process does not require BLM to establish regional leasing levels, but the BLM must nevertheless evaluate the lands for leasing in a comprehensive land use plan, id. § 3425.2, and perform an environmental analysis prior to any lease sale, id. § 3425.3. See also 30 U.S.C. § 201(a)(3). Although BLM established the Powder River Basin as a coal production region in 1979, BLM decertified the region in 1990. See Decertification of the Powder River Coal Production Region, 55 Fed. Reg. 784 (Jan. 9, 1990). Indeed, BLM has now decertified all coal production regions, rendering the regional leasing process inapplicable. Prior to the recent moratorium on new leasing, all competitive coal leasing was accomplished through the leasing-by-application process.

In addition to BLM’s competitive leasing procedures for new leases, BLM is authorized modify existing leases to include contiguous coal tracts, provided that the combined total of all modifications for any given lease after 1976 may not exceed 960 acres or the number of acres in the original lease, whichever is less. 30 U.S.C. § 203(a)(3). BLM may authorize lease modifications after preparing an environmental assessment or environmental impact statement, 43 C.F.R. § 3432.3(c), and upon finding that: “(1) The modification serves the interests of the United States; (2) there is no competitive interest in the lands or deposits; and (3) the additional lands or deposits cannot be developed as part of another potential or existing independent operation,” id. § 3432.2(a). Lease modifications are not subject to competitive bidding, but BLM must nonetheless receive, at a minimum “the fair market value of the lease of the added lands, either by cash payment or adjustment of the royalty applicable to the lands added to the lease by the modification.” Id. § 3432.2(c).

The Secretary of the Interior has broad discretion to establish 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.”).

BLM has responsibility for coal leasing on approximately 570 million acres where the coal mineral estate is owned by the Federal Government. The surface estate of these lands could be controlled by BLM, the United States Forest Service, private land owners, state land owners, or other Federal agencies.<sup>7</sup> As of 2015, BLM managed 306 active federal coal leases in 11 states, authorizing coal mining on 482,691 acres under both public and private ownership.<sup>8</sup> The vast majority of federal coal production—over 85%—is in the Powder River Basin of Montana and Wyoming, primarily on federal public lands.<sup>9</sup>

## 2. Coal-Mine Permitting

Even after coal is leased, state and federal approvals are needed before mining may commence. Coal mines require operation and reclamation plan approval from state regulatory agencies, the Office of Surface Mining (“OSMRE”), and the Secretary of the Interior. The Surface Mining Control and Reclamation Act (“SMCRA”), 30 U.S.C. §§1201-1328, establishes minimum federal standards for the regulation of coal mining. Pursuant to SMCRA, most coal states have primary coal mine permitting authority under state regulatory programs that satisfy those minimum standards. While federal coal leasing procedures apply only to federally owned coal, state coal-mine permitting procedures apply to all coal mines, including mines involving privately owned and state-owned coal.

A key component of an application for a permit to mine is the “reclamation plan.” *Id.* § 1258. SMCRA requires the operator to restore the affected land to a condition capable of supporting the uses it could support before mining, or to “higher or better uses.” *Id.* § 1265(b)(2). The operator must also: restore the approximate original contour of the land by backfilling, grading, and compacting; minimize disturbances to the hydrologic system by avoiding acid mine drainage and preventing additional contributions of suspended solids to nearby streams and other water bodies; “insure that all reclamation efforts proceed in an environmentally sound manner and as contemporaneously as practicable with the surface coal mining operations;” and establish a permanent vegetative cover in the affected area. *Id.* § 1265(b).

In addition, “after a surface coal mining and reclamation permit application has been approved but before such a permit is issued,” the operator must furnish a bond for the area of

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<sup>7</sup> Bureau of Land Mgmt., Federal Coal Leasing, at [http://www.blm.gov/wo/st/en/prog/energy/coal\\_and\\_non-energy.print.html](http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html) (last visited July 28, 2016).

<sup>8</sup> Bureau of Land Mgmt., Total Federal Coal Leases in Effect, Total Acres Under Lease, and Lease Sales by Fiscal Year Since 1990, available at [http://www.blm.gov/wo/st/en/prog/energy/coal\\_and\\_non-energy/coal\\_lease\\_table.html](http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy/coal_lease_table.html) (last visited July 19, 2016).

<sup>9</sup> White House Council of Economic Advisors, The Economics of Coal Leasing on Federal Lands: Ensuring a Fair Return to Taxpayers, at 15 (June 2016), available at [https://www.whitehouse.gov/sites/default/files/page/files/20160622\\_cea\\_coal\\_leasing.pdf](https://www.whitehouse.gov/sites/default/files/page/files/20160622_cea_coal_leasing.pdf) (last visited July 24, 2016) (hereafter, “White House Fair Return Report”), attached as Ex. 2.

land on which mining will occur during the five-year permit term. Id. § 1259. “The amount of the bond required for each bonded area shall depend upon the reclamation requirements of the approved permit; shall reflect the probable difficulty of reclamation giving consideration to such factors as topography, geology of the site, hydrology, and revegetation potential, and shall be determined by the regulatory authority.” Id.

Permits are valid for five years and “carry ... the right of successive renewal upon expiration” provided that the permitting authority determines that the operator is meeting the terms of the permit and applicable performance standards. Id. § 1256(b), (d). If an operator seeks to extend the permit to new land, it must satisfy the application requirements and performance standards summarized above for all areas not already evaluated for the original permit. Id. § 1256(d).

If a lease involves federal coal, the company must also secure the Interior Secretary’s approval of its mining plan. Under the Mineral Leasing Act and its implementing regulations, a lessee of federal coal cannot begin surface mining operations until the Secretary has approved the lessee’s operation and reclamation plan, or “mining plan.” 30 U.S.C. § 1273(c); 30 C.F.R. § 746.14; 30 U.S.C. § 207(c); 30 C.F.R. § 746.11(a). The Act requires OSMRE to review and make a recommendation regarding mining plans, 30 C.F.R. § 746.13, and the Secretary (or, more commonly, the Assistant Secretary for Land and Minerals Management) generally approves or disapproves a mining plan based on OSM’s recommendation. Unlike the regulatory requirements of SMCRA, which state agencies frequently oversee, the Department of the Interior cannot delegate its responsibility for reviewing mining plans of federally-owned coal. 30 U.S.C. § 1273(c). In situations where a company wishes to expand the footprint of its mine, as commonly occurs when companies lease coal tracts adjacent to their existing mines, the Department must review and approve a mining plan modification before the company begin mining its newly acquired coal. 30 C.F.R. §§ 746.18(a), (d)(1), (d)(4), and (d)(5).

In short, the Secretary of the Interior—through both BLM and OSM—has substantial discretion and control in implementing the federal coal program.

## **B. Changed Circumstances Warrant Renewed Programmatic Review of the Federal Coal Leasing Program**

Because the federal coal program “is a coherent plan of national scope, and its adoption surely has significant environmental consequences,” NEPA requires BLM to prepare a programmatic environmental impact statement for the Program as a whole. Kleppe v. Sierra Club, 427 U.S. 390, 400 (1976) (recognizing need for programmatic EIS for federal coal leasing program). BLM’s most recent full programmatic environmental review for the program was in 1979—37 years ago—at a time when the federal government’s policy was to increase reliance on coal and the threat of climate change had not yet been fully realized or understood.<sup>10</sup> The fundamental reversal of these factors requires BLM to renew its programmatic analysis.

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<sup>10</sup> See Bureau of Land Mgmt., Final Environmental Statement: Federal Coal Management Program (Apr. 1979) (“1979 PEIS”).



BLM committed to update its 1979 PEIS “when conditions change sufficiently to require new analyses of [national and interregional] impacts.”<sup>11</sup> In commencing that update now, BLM complies with a key requirement of NEPA to supplement a past EIS when there are “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii). Under NEPA, whenever “there remains ‘major Federal actio[n]’ to occur, and if the new information is sufficient to show that the remaining action will ‘affec[t] the quality of the human environment’ in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.” Marsh v. Or. Natural Res. Council, 490 U.S. 360, 374 (1989) (internal quotation marks omitted) (quoting 42 U.S.C. § 4332(2)(c)).

Fundamental shifts in our understanding of the impacts of the federal coal program, in addition to plummeting need for federal coal to fuel our nation’s electric sector, warrant the proposed programmatic review under NEPA. Most importantly, an overwhelming body of evidence has developed that continued reliance of fossil fuel-generated power will lead to a climate catastrophe, spurring 180 nations, including by the United States, to commit to greenhouse gas reductions to keep global temperatures increases to no more than 1.5-2°C above pre-industrial levels. In the United States, this translates to an economy-wide target to reduce net greenhouse gas emissions 26 to 28 percent below 2005 levels by 2025, an on a path to 80 percent reductions by 2050.<sup>12</sup> The government has never undertaken a review of whether it can continue its fossil fuel leasing programs—the coal program in particular—and fulfill its climate commitments. As discussed further below, such an analysis should lead BLM to conclude that continued federal coal leasing is inconsistent with the environmental and economic imperatives, and the commitments of the U.S. government, to dramatically reduce U.S. greenhouse gas emissions.

In addition to the pressing need to address climate change, additional changed circumstances since 1979 not only warrant new programmatic review of the federal coal leasing program, but also warrant phasing out the program. As discussed in more detail below, while the federal coal leasing program generates ample environmental and social harm, it has failed to live up to aspirations to generate a fair return to American taxpayers. Market changes have decreased demand for coal to fuel the domestic energy sector<sup>13</sup> at the same time as technological advances

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<sup>11</sup> Id. at 3-9.

<sup>12</sup> United States, Intended Nationally Determined Contribution, Submission to the UNFCCC Secretariat (2015), available at <http://www4.unfccc.int/Submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf> (last visited July 28, 2016)

<sup>13</sup> The U.S. Energy Information Administration (“EIA”) estimates total U.S. coal production in 2015 was about 895 million short tons (MMst), 10 percent lower than in 2014 and the lowest level since 1986. EIA projects that coal production will fall by another 12 percent in 2016, then rise by 2 percent in 2017. U.S. EIA, Short Term Energy Outlook: Coal (Mar. 8, 2016), available at <http://www.eia.gov/forecasts/steo/report/coal.cfm> (visited July 28, 2016).

have increased the availability of clean energy sources that obviate the need for federal coal.<sup>14</sup> In short, NEPA mandates that it is time for BLM to re-evaluate the need for the federal coal leasing program altogether.

## COMMENTS

### I. PURPOSE AND NEED OF PROGRAMMATIC REVIEW

At the outset, BLM should identify the purpose and need for the programmatic EIS that is consistent both with the purposes of the federal coal leasing program and national policies to reduce U.S. greenhouse gas emissions from burning fossil fuels. In particular, the purpose and need of the EIS is to meet the nation's energy needs in a manner that is consistent with our nation's commitments to dramatically reduce domestic greenhouse gas emissions.

An EIS must “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” 40 C.F.R. § 1502.13. This requirement is a key component of NEPA. “The EIS’s purpose-and-need statement reflects both the agency’s immediate objective ... as well as the broader policy goals that the agency considered in deciding among alternative proposals.” Protect Our Communities Found. v. Jewell, No. 14-55666, 2016 WL 3165630, at \*5 (9th Cir. June 7, 2016) (noting “the agency’s duty to consider federal policies” in its NEPA review). Here, those policy goals necessarily include U.S. commitments in connection with the Paris Agreement to the United Nations Framework Convention on Climate Change (“UNFCCC”). To satisfy those commitments, the U.S. must reduce our economy-wide greenhouse gas (“GHG”) emissions by 26-28% below 2005 levels by 2025, which will put us on a trajectory to achieve emission reductions of 80% or more by 2050.<sup>15</sup> This goal is part of the broader commitment by the nearly 180 signatories to the Paris Agreement to limit global warming to “well below” a 2°C above pre-industrial temperatures, with a goal of limiting warming to just 1.5°C.<sup>16</sup> One recent analysis concluded that 92% of U.S. coal reserves—including reserves already under lease—must remain unused to have even a 50% chance of remaining below the 2°C threshold.<sup>17</sup>

Secretarial Order 3338, which directs BLM to prepare the federal coal program PEIS, states that the purpose of the PEIS is “to undertake a comprehensive review of the [federal coal leasing] program and consider whether and how the program may be improved and modernized to foster the orderly development of BLM administered coal on Federal lands in a manner that gives proper consideration to the impact of that development on important stewardship values,

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<sup>14</sup> See infra § III.A.

<sup>15</sup> See United States, UNFCC submission supra note 11.

<sup>16</sup> Paris Agreement, Article 2, FCC/CP/2015/L.9 (Dec. 12, 2015).

<sup>17</sup> Christophe McGlade & Paul Ekins, The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 °C, 517 NATURE 187 (2015), attached as Ex. 3.

while also ensuring a fair return to the American public.”<sup>18</sup> We largely agree with this statement. To ensure that BLM and the Secretary have adequate information regarding those considerations and “whether ... the program” may continue in a manner consistent with those considerations—most significantly, our national commitments to dramatically reduce greenhouse gas emissions—the PEIS must comprehensively examine the direct, indirect, and cumulative environmental, social, and economic consequences of federal coal leasing as discussed below. As discussed below, the federal program cannot continue, given its impacts and conflicts with the U.S.’s climate commitments.

## **II. THE PEIS SHOULD EVALUATE THE DIRECT, INDIRECT, AND CUMULATIVE IMPACTS OF FEDERAL COAL LEASING**

On January 15, 2016, the Secretary issued Secretarial Order No. 3338, exercising her discretion under the Mineral Leasing Act and other applicable statutes to direct BLM to prepare a programmatic EIS to consider, among other things, “how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation’s energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts.”<sup>19</sup>

In the following sections, we address BLM’s obligation to address direct, indirect, and cumulative impacts of the federal coal leasing program on (1) climate change; (2) public lands, water, and wildlife; (3) downstream communities, in particular low-income and communities of color that may be most vulnerable to the public health and climate change impacts caused by continued mining and burning of federally owned coal; and (4) economic consequences to taxpayers, states, and the federal government.<sup>20</sup>

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<sup>18</sup> Secretarial Order No. 3338, Discretionary Programmatic Environmental Impact Statement to Modernize the Federal Coal Program, at 1 (Jan. 15, 2016); see also id. at 7 (“The Department is authorized to undertake this effort in its stewardship role as a proprietor and sovereign regulator which is charged by Congress with managing and overseeing mineral development on the public lands, not only for the purpose of ensuring safe and responsible development of mineral resources, but also to ensure conservation of the public lands, the protection of their scientific, historic, and environmental values, and compliance with applicable environmental laws. Additionally, the Department has the statutory duty to ensure a fair return to the taxpayer and broad discretionary authority to decide where, when, and under what terms and conditions, mineral development should occur, including with regard to the issuance of Federal coal leases.”).

<sup>19</sup> Id. at 1, 8 (emphasis added).

<sup>20</sup> The following discussion is intended to provide BLM with guidance in addressing specific impacts of federal coal leasing. However, this discussion is not exhaustive and should not be read to minimize the additional environmental consequences that must be examined in BLM’s programmatic review of the program.

## **A. The PEIS Should Evaluate Climate Change Impacts of the Federal Coal Program**

We applaud the Secretary of the Interior for ordering BLM to take its first comprehensive look at the climate impacts of leasing and burning federally owned coal. In the PEIS process, the BLM must finally acknowledge – for the first time in its history – that its federal coal program perpetuates and exacerbates climate change. Such an analysis is the only responsible approach to addressing climate impacts of mining and burning hundreds of millions of tons of taxpayer-owned coal every year, and it is the only approach that honors Secretary Jewell’s call for “an honest and open conversation” with the American people about the federal coal program.<sup>21</sup>

As the White House Council of Economic Advisors acknowledged, coal combustion and the impacts of coal combustion are indirect impacts of federal coal leasing.<sup>22</sup> Indeed, “[f]ederal coal was used to generate about 14 percent of the Nation’s electricity in 2015.”<sup>23</sup>

For the past several years, while the much of the Obama Administration has developed significant and forward-thinking policies aimed at curbing greenhouse gas emissions in order to stave off the worst effects of climate change, the Department of Interior and BLM have continued to lease billions of tons of federally owned and managed coal while telling the public and decision-makers that doing so has no impact on the climate. The Department, in particular BLM and OSMRE, have based this idea—that although burning coal may harm the climate, their decisions to approve more coal mining do not—on a discredited assumption that courts have referred to as “perfect substitution.” The idea behind BLM’s perfect substitution theory, which defies even the most basic understanding of the way in which energy markets work, is that if the Department were to reject any particular coal lease, coal from other mines would perfectly substitute for one-hundred percent of that coal in the marketplace—that is, coal-fired power plants would simply buy the same amount of coal at the same price from other mines.

Another significant and consistent flaw in BLM NEPA reviews for proposals to mine federal coal is that many of these reviews continue to state that the individual mining proposal would only minimally contribute to state, national, and global carbon dioxide (CO<sub>2</sub>) emissions, even though the White House’s Council on Environmental Quality (CEQ) – which promulgates the NEPA regulations that other agencies are required to follow– explicitly advised against this approach in 2014. For example, in June 2016, in evaluating climate impacts of a proposed expansion at Spring Creek Mine, OSMRE quantified direct and indirect GHG emissions from

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<sup>21</sup> Sec’y Sally Jewell, Speech at the Center for International Strategic Studies (March 17, 2015), available at <https://www.doi.gov/news/pressreleases/secretary-jewell-offers-vision-for-balanced-prosperous-energy-future> (last visited July 20, 2016).

<sup>22</sup> See White House Fair Return Report, at 28 (describing environmental externalities of leasing federal coal, including coal combustion impacts).

<sup>23</sup> Secretarial Order 3338, at 2.

coal production and combustion and compared those to Montana and national emission totals.<sup>24</sup> This, however, is precisely the kind of limited analysis that CEQ specifically directed agencies not to do:

[T]he statement that emissions from a government action or approval represent only a small fraction of global emissions is more a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether to consider climate impacts under NEPA. Moreover, these comparisons are not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations. This approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make relatively small additions to global atmospheric GHG concentrations that collectively have huge impact.<sup>25</sup>

BLM must reject, once and for all, this unnecessarily limited approach to understanding the climate impacts of its decisions and the unsupported, incorrect, and damaging assumption of perfect substitution. In order to adequately understand the impacts of the federal coal leasing program as a whole—and to take the hard look at those impacts that NEPA requires—BLM must analyze the extent to which continued expansion and long-term operation of the program affects the mix of resources used to generate electricity and how the concomitant greenhouse gas emissions differ among alternatives. As described below, there are multiple energy market models that would allow BLM to quantify how alternative proposals (such as a “no new leasing” alternative and an alternative that captures externalities of climate damage into royalty rates) would affect demand for coal, natural gas, and renewables used to generate electricity. Once BLM quantifies the different levels of climate pollution associated with various alternatives, it must do more than simply use the volume of greenhouse gas emissions as a proxy for the effect of those BLM emissions. In particular, BLM must analyze whether the continued leasing of federal coal is consistent with our national GHG emission reduction goals and international climate commitments, and BLM must use the social cost of carbon and social cost of methane as tools to understand the severity of climate impacts without merely relying on the volume of GHG emissions as proxy for their effect.

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<sup>24</sup> Office of Surface Mining Reclamation and Enforcement, Spring Creek Mine EA, 4-17 (June 2, 2016), available at <http://www.wrcc.osmre.gov/initiatives/SpringcreekMineLBA1/documents/EA0616.pdf> (last visited June 26, 2016).

<sup>25</sup> Council on Environmental Quality, Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, at 9 (2014), available at: [https://www.whitehouse.gov/sites/default/files/docs/nepa\\_revised\\_draft\\_ghg\\_guidance\\_searchable.pdf](https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf) (last visited July 1, 2016) (hereafter “CEQ Draft Climate Guidance”) (emphasis added).

In order to “best to assess the climate impacts of continued Federal coal production,” and do so in a manner that is as accurate, informative, and transparent as possible, BLM must, at a minimum:

- 1. Disavow BLM’s prior adherence to assumptions of perfect substitution.** BLM must acknowledge and reject its unfortunate history of engaging in climate denial by inaccurately asserting that its leasing decisions, even at massive scales, have no impact on coal markets, coal consumption, or carbon dioxide emissions.
- 2. Use one of the available models to analyze the federal coal leasing program’s impacts to the use of coal, natural gas, and renewable resources.** There are multiple climate-energy models that could assist BLM in informing the public and the Secretary of Interior on the impacts of various alternatives for the future of the federal coal leasing program. When it conducts modeling, BLM must disclose what is an input supplied by BLM and what is an output of the modeling, and it must strive to make the results of modeling as transparent, and as capable of replication by the public, as possible.
- 3. Acknowledge the scientific consensus on the need for immediate action on climate and assess whether federal coal leasing is consistent with our climate goals, international commitments.** In Paris, the United States joined nearly 200 other nations in committing to keep global temperatures within 2 degrees Celsius of pre-industrial times, with a target of no more than 1.5 degrees, in order to avoid the most dire and expensive consequences of climate disruption. BLM must evaluate whether issuing new leases and renewing existing federal leases is consistent with those commitments.
- 4. Use the tools available to it to analyze the impact, and not just the volume of carbon pollution that results from the alternatives considered.** The social cost of carbon and the social cost of methane have both been used by this Administration, including BLM, to evaluate the impacts of policy proposals, and they offer the most robust, up-to-date, and thorough means for both BLM and the public to understand easily the climate consequences of the federal coal leasing program.

Each of these issues is addressed in detail below.

1. BLM Must Acknowledge that the Federal Coal Program Exacerbates Climate Change.

Federal agencies that make regulatory decisions that affect the amount of coal that can be produced from public lands have an obligation under NEPA to accurately analyze and disclose the environmental impacts of those decisions. With regard to assessments of climate impacts, agencies must quantify the amount of GHG emissions that will occur as a result of the agency’s action. But that does not mean merely tallying up the direct emissions of carbon dioxide and methane emissions emitted during mining and adding them to the carbon dioxide emissions emitted from burning the coal once it is mined. In order to make an accurate assessment of GHG emissions, agencies must first thoroughly examine coal markets and the extent to which the market will respond to the agency’s decision. The nature and extent of the market’s response to

a single regulatory decision can lead to complex questions that require rigorous economic evaluation—agencies may not simply assume a given market response, as BLM has done repeatedly in the past.

We support the Secretary of the Interior’s commitment in the Secretarial Order announcing this PEIS process to studying this precise issue, and her recognition that many commentators have noted the tension between producing very large quantities of federal coal while pursuing policies to reduce U.S. GHG emissions. Specifically, the Secretary’s order directs the agency to address:

[H]ow the administration, availability, and pricing of Federal coal affect regional and national economies (including job impacts), and energy markets in general, including the pricing and viability of other coal resources (both domestic and foreign) and other energy sources. The impact of possible program alternatives on the projected fuel mix and cost of electricity in the United States should also be examined.<sup>26</sup>

BLM’s March 30, 2016 Notice of Intent repeats the Secretary’s direction, with an explicit commitment to study this issue, explaining that the PEIS “will broadly examine” these issues.<sup>27</sup>

In the PEIS, BLM must disavow perfect substitution both to disclose the cumulative impacts of the federal coal leasing program, and to comport with the legal principle that when agencies change their minds on key issues they explain why the reversal is not arbitrary and capricious. NEPA regulations define a “cumulative impact” as one that “results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7.

As recently articulated by the D.C. Circuit Court, “[o]ne of the core tenets of reasoned decision-making is that ‘an agency [when] changing its course . . . is obligated to supply a reasoned analysis for the change.’” Sierra Club v. Salazar, No. 10-1513 (RBW), 2016 WL 1436645, at \*22 (D.D.C. Apr. 11, 2016) (quoting Republic Airline Inc. v. U.S. Dep’t of Transp., 669 F.3d 296, 299 (D.C. Cir. 2012)). See also W. Deptford Energy, LLC v. FERC, 766 F.3d 10, 17 (D.C. Cir. 2014) (noting that 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) (stating that “an agency acts arbitrarily and capriciously when it abruptly departs from a position it previously held without satisfactorily explaining its reason for doing so”).

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<sup>26</sup> Secretarial Order 3338, Discretionary Programmatic Environmental Impact Statement to Modernize the Federal Coal Program, at 8 (Jan. 15, 2016) (emphasis added).

<sup>27</sup> Notice of Intent, 81 Fed. Reg. at 17,226.

In disavowing the myth of perfect substitution, BLM has an unfortunate and long history to refute. Although BLM routinely quantifies the amount of carbon dioxide that would result from mining and burning the coal made available by individual BLM leasing decisions, and often provides a general overview of climate change, in nearly every environmental impact statement and environmental assessment this administration has prepared under NEPA evaluating the climate impact of various coal leasing proposals, the Department has dismissed the notion that its decisions opening up more federal coal have any impact on the total amount of coal mined and burned, and thus on the amount of carbon dioxide emitted from the electric sector. As documented below, this assumption can be found in the environmental analyses for the largest surface mine approvals in the history of the program, comparatively tiny mines in Washington, underground mines in Colorado and Montana, and analyses from as early as 2008 and as recent as last month.

The following examples are an illustrative, but by no means exhaustive, list of NEPA review documents in which BLM, OSMRE, and/or the U.S. Forest Service, which is part of the Department of Agriculture, have relied on perfect substitution to help justify its decision to authorize new or expanded coal leases.

- West Antelope, proposal to lease 400 million tons of coal (2008): “It is not likely that selection of the No Action Alternative would result in a decrease of U.S. CO<sub>2</sub> emissions attributable to coal-burning power plants in the long term. There are multiple other sources of coal that, while not having the cost, environmental, or safety advantages, could supply the demand for coal beyond the time that the Antelope Mine completes recovery of the coal in its existing leases.”<sup>28</sup>
- Belle Ayr and Caballo, proposal to lease 230 million tons of coal (2009): “It is not likely that selection of the No Action alternatives would result in a decrease of U.S. CO<sub>2</sub> emissions attributable to coal-burning power plants in the longer term because there are multiple other sources of coal that, while not having the cost, environmental, or safety advantages, could supply the demand for coal beyond the time that the Belle Ayr, Coal Creek Caballo, and Cordero Rojo Mines complete recovery of the coal in their existing leases.”<sup>29</sup>

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<sup>28</sup> Bureau of Land Management, West Antelope II FEIS, at 4-109, (2008), available at [http://www.blm.gov/wy/st/en/info/NEPA/documents/cfo/West\\_Antelope\\_II.html](http://www.blm.gov/wy/st/en/info/NEPA/documents/cfo/West_Antelope_II.html) (last visited June 26, 2016).

<sup>29</sup> Bureau of Land Management, South Gillette Area Coal Lease Applications FEIS, at 4-120-121 (2009), available at <http://www.blm.gov/publish/content/wy/en/info/NEPA/documents/hpd/SouthGillette.html> (last visited June 26, 2016).



- Wright Area coal mines, proposal to lease 2 billion tons of coal (2010): “It is not likely that selection of No Action alternatives would result in a decrease of U.S. CO<sub>2</sub> emissions . . . because there are multiple other sources of coal that . . . could supply the demand.”<sup>30</sup>
- Colorado Roadless Rule, proposal to open to leasing 347 million tons of coal (2012): “[C]oal is increasingly a global commodity and any reductions in coal production associated with a roadless rule likely would be substituted by coal from another source.”<sup>31</sup>
- John Henry Mine, proposal to develop 740,000 tons of coal (2014): “The end users of coal, in particular the cement manufacturing plant located in Richmond, British Columbia, will show no net increase in CO<sub>2</sub> emissions as [the mine’s] coal will displace coal from other sources.”<sup>32</sup>
- Bull Mountain Mine, proposal to develop 100 million tons of coal (2015): “The No Action Alternative would not likely result in a decrease of CO<sub>2</sub> 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 beyond the time that the Bull Mountains Mine No. 1 completes recovery of all coal proposed for mining. Without continued coal export from the Bull Mountains Mine No. 1 after the remaining 35 million tons is mined, it is reasonable to expect that power plant(s) would obtain coal from alternative sources on the spot market and coal combustion emissions would be comparable to the Proposed Action, depending on the coal quality and associated efficiency. Negligible impacts to climate change are expected under the No Action Alternative.”<sup>33</sup>
- Spring Creek Mine, proposal to develop 84 million tons of coal (2016): “In addition, there is no certainty that GHG emissions at power plants would actually be reduced if the federal coal associated with the Proposed Action was not mined, given that the power

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<sup>30</sup> Bureau of Land Management, Wright Area FEIS, at 4-141 (2010), available at <http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/Wright-Coal.html> (last visited June 26, 2016).

<sup>31</sup> U.S. Forest Service, Colorado Roadless Rule FEIS, at 138-139 (2012), available at <http://www.fs.usda.gov/roadmain/roadless/coloradoroadlessrules/finalruledocuments> (last visited June 26, 2016).

<sup>32</sup> Office of Surface Mining Reclamation and Enforcement, John Henry Mine EA, at 23, (2014), available at [http://www.wrcc.osmre.gov/initiatives/johnHenryMine/JHM\\_EA.pdf](http://www.wrcc.osmre.gov/initiatives/johnHenryMine/JHM_EA.pdf) (last visited June 26, 2016).

<sup>33</sup> Office of Surface Mining Reclamation and Enforcement, Bull Mountain No. 1 Mine EA, at 4-24, (Jan. 2015), available at <http://www.wrcc.osmre.gov/initiatives/bullMountainsMine/BullMountainsMineEA.pdf> (last visited June 26, 2016).

plants supplied by [Spring Creek Coal Mine] have alternative sources for coal, and the [Mine] also has non-federal coal reserves that could be mined.”<sup>34</sup>

In stark contrast to this long-standing practice of BLM and other agencies, the only times that federal courts have ruled on an agency’s use of perfect substitution, they have rejected the theory. In Mid States Coal. for Progress v. Surface Transp. Bd., the Surface Transportation Board approved a new railroad line that would have provided a shorter route to deliver Powder River Basin coal to power plants in the Midwest. 345 F.3d 520, 532, 550 (8th Cir. 2003). The Surface Transportation Board argued that the rail line would not cause an increase in the use of Powder River Basin coal, since the project would merely provide a shorter and straighter route to power plants for coal mines that already served those plants through existing railways. Id. at 549. The Eighth Circuit rejected the unsupported notion that demand would remain unaffected in the face of a proposal that increased the availability and decreased the price of approximately 100 million tons of coal per year coal:

[T]he proposition that the demand for coal will be unaffected by an increase in availability and a decrease in price . . . is illogical at best. The increased availability of inexpensive coal will at the very least make coal a more attractive option to future entrants into the utilities market when compared with other potential fuel sources, such as nuclear power, solar power, or natural gas. . . . [The railroad] will most certainly affect the nation’s long-term demand for coal.

Id. (emphasis added).

More recently, the U.S. District Court for the District of Colorado rejected the Forest Service’s reliance on perfect substitution when analyzing the impact of making available approximately 347 million tons of coal in Colorado. High Country Conservation Advocates v. U.S. Forest Serv., 52 F.Supp. 3d 1174, 1197-98 (D.Colo. 2014). The Forest Service argued that “if the coal does not come out of the ground in the North Fork consumers will simply pay to have the same amount of coal pulled out of the ground from somewhere else—overall [greenhouse gas] emissions from combustion will be identical under either scenario.” Id. The High Country court rejected the Forest Service’s conclusion, explaining that the increased supply made possible by the Forest Service’s decision would “impact the demand for coal relative to other fuel sources” and that “[t]his reasonably foreseeable effect must be analyzed.” Id. at 1198.

Significantly, every time agencies have actually analyzed the impact of coal-related proposals by modeling the market impacts, they have concluded that proposals to facilitate coal mining on public lands will result in increased carbon dioxide emissions.

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<sup>34</sup> Office of Surface Mining Reclamation and Enforcement, Spring Creek Mine EA, at 4-17 (June 2, 2016), available at <http://www.wrcc.osmre.gov/initiatives/SpringcreekMineLBA1/documents/EA0616.pdf> (last visited June 26, 2016).

Earlier this year, the Washington Department of Ecology analyzed the impacts of the proposed Millennium Bulk coal export terminal. As part of its analysis, Ecology used the ICF Integrated Planning Model to analyze impacts of the proposal. Ecology studied relevant factors, including how changes in supply can affect coal price. Ultimately, Ecology concluded that the proposal could affect the delivered coal price and thus total coal consumption, recognizing that: “[a]s delivered coal prices change, the demand for coal changes in the opposite direction.”<sup>35</sup>

Similarly, following the High Country decision, the Forest Service used the ICF Integrated Planning Model to analyze the market and environmental impacts of the proposal to allow access to approximately 170 million tons of coal in otherwise protected areas of Colorado. In November 2015, the Forest Service released its Supplemental DEIS, which concluded that “[c]hanges in gross production and consumption of coal from the North Fork Coal Mining Area are expected to have an effect on production and consumption of other fuel sources, including alternative supplies of coal, natural gas, and other energy supplies such as renewables, especially in later years of the analysis.”<sup>36</sup> The Forest Service explained that opening up approximately 170 million tons of coal would cause “the mixture of fuels [to] shift[,]” including increases in production and consumption of underground coal, and decreases in production and consumption of substitute fuel sources such as surface coal, natural gas, and renewable energy. Moreover, the Forest Service concluded based on its Integrated Planning Model runs that this relatively modest proposal, in terms of volume of coal when compared to the federal coal leasing program, would displace approximately 40,000 gigawatt hours of renewable energy from the U.S. electricity grid

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<sup>35</sup> Washington Department of Ecology, Millennium Coal Export Terminal Draft EIS, SEPA Market Assessment Technical Report, at 4-11 (2016). ICF conducted a literature review to identify a specific demand elasticity, and supplied the following studies when asked to identify the documents it relied upon: Office of Air and Radiation, U.S. Environmental Protection Agency, TECHNICAL SUPPORT DOCUMENT FOR EPA’S MULTI-POLLUTANT ANALYSIS ELECTRICITY DEMAND RESPONSE TO CHANGES IN PRICE IN EPA’S POWER SECTOR MODEL (2005), available at <http://www.epa.gov/airmarkt/progsregs/cair/docs/DemandResponse.pdf>; James Espey & Molly Espey, Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities, 36 J. OF AGRIC. & APPLIED ECON., no. 1, 2004, at 65, available at <https://ideas.repec.org/a/ags/joaec/42897.html>; R. Laffery, et al., Office of Markets, Tariffs and Rates, Federal Energy Regulatory Commission, DEMAND RESPONSIVENESS IN ELECTRICITY MARKETS (2001); Mark Bernstein & James Griffin, The RAND Corporation, REGIONAL DIFFERENCES IN THE PRICE-ELASTICITY OF DEMAND FOR ENERGY (2005), available at [http://www.rand.org/content/dam/rand/pubs/technical\\_reports/2005/RAND\\_TR292.pdf](http://www.rand.org/content/dam/rand/pubs/technical_reports/2005/RAND_TR292.pdf); Nathan Joo, Matt Lee-Ashley, & Michael Madowitz, Center for American Progress, 5 THINGS YOU SHOULD KNOW ABOUT POWDER RIVER BASIN COAL EXPORTS (2014), available at <http://cdn.americanprogress.org/wp-content/uploads/2014/08/PowderRiver-factsheet.pdf> (From The structural break and elasticity of coal demand in China: empirical findings from 1980-2006); U.S. Energy Information Administration, U.S. Department of Energy, FUEL COMPETITION IN POWER GENERATION AND ELASTICITIES OF SUBSTITUTION (2012), available at <http://www.eia.gov/analysis/studies/fuelelasticities/pdf/eia-fuelelasticities.pdf>.

<sup>36</sup> U.S. Forest Service, Colorado Roadless Rule SDEIS, at 80 (Nov. 2015) (emphasis added).

over the life of the proposal, and result in a net increase of 130 million tons of CO<sub>2</sub> over the life of the proposal.<sup>37</sup>

In sum, the PEIS must disclose the volume of GHGs likely to occur as a result of each alternative, by acknowledging and disclosing the substitution of effects of other energy sources.

2. BLM Must Use One of the Available Energy Models to Analyze Market Effects of Alternatives in the PEIS.

There are multiple models that exist and have already been used for decades by other federal agencies that can assist BLM in quantifying the amount of climate pollution emissions (principally carbon dioxide and methane) that will likely occur as a result of considered alternatives in the PEIS. Understanding the net climate pollution differences is essential information in any review that promises to analyze “[t]he impact of possible program alternatives on the projected fuel mix” in order to understand the comparative differences in the resulting GHG emissions.”<sup>38</sup> 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. § 1502.22. 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.* § 1502.22(b). 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 meaning of the regulation, and BLM must utilize these available tools to understand the impacts of various alternatives in this PEIS.

In 2015, Power Consulting prepared a thorough investigation of available energy-economy models that the Forest Service could have used in evaluating the market and climate impacts of a proposal to open up federal lands for coal mining in Colorado.<sup>39</sup> That report concluded that the two models best suited to the task, based on the prior use by other agencies and the known characteristics of the models, were the Energy Information Administration’s (“EIA”) National Energy Modeling System (“NEMS”), used by EIA to generate its widely-cited Annual Energy Outlook reports, and, to a lesser degree, ICF International’s Integrated Planning Model (“IPM”), used for years by EPA to evaluate market responses to various policy proposals since at least 2004.<sup>40</sup>

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

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<sup>37</sup> *Id.* at 97.

<sup>38</sup> 81 Fed. Reg. 17,200, 17,226 (Mar. 30, 2016) (emphasis added).

<sup>39</sup> Thomas Power, et al., ASSESSING THE ABILITY OF CONTEMPORARY MODELS TO CALCULATE THE GHG IMPLICATIONS OF FEDERAL COAL LEASING DECISIONS AND OTHER FEDERAL ENERGY MANAGEMENT DECISIONS (2015), attached as Ex. 4.

<sup>40</sup> *Id.* at v.

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.<sup>41</sup> 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.

Earlier this year, the Institute for Policy Integrity released a report detailing and evaluating various strengths and weaknesses of three available models: the Bureau of Ocean Energy Management’s MarketSim model; the U.S. Energy Information Administration’s National Energy Modeling System (NEMS); and ICF International’s Integrated Planning Model (IPM).<sup>42</sup> That report in particular highlights the tradeoff between model complexity and transparency that BLM will need to address in selecting one or more models to use in its analysis.

As explained in detail in the attached Power Consulting report on available energy-economy models, the model selected by BLM to evaluate impacts of competing alternatives in the PEIS should, at a minimum, have the following characteristics:

1. The ability to estimate GHG emissions with a high enough degree of precision to differentiate between emissions output from a reference scenario and adjusted scenarios where various levels of federal coal are allowed as inputs;
2. The ability to differentiate between coal with different properties both in supply and end user;
3. The ability to accurately account for changes in delivered coal prices, including changes in mine-mouth prices and transportation costs;

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<sup>41</sup> ICF International, Integrated Planning Model, available at <http://www.icfi.com/insights/products-and-tools/ipm> (last visited July 21, 2016).

<sup>42</sup> Peter H. Howard, The Bureau of Land Management’s Modeling Choice for the Federal Coal Programmatic Review, Institute for Policy Integrity (2016).

4. The ability to accurately account for price elasticity between supply and demand;
5. The ability to account for emissions reduction through fuel switching inherent in our current electric economy;
6. The ability to accounts for coal mine methane emissions;
7. The ability to account for changes in electricity demand as electricity prices change; and
8. Be transparent and independently verifiable.

Of particular importance—and an aspect that the Forest Service did not account for when employing ICF’s IPM in its 2015 Draft EIS to reinstate the coal mining loophole in the Colorado Roadless Rule—is the likelihood that policies that increase the supply of comparatively low-cost Powder River Basin coal may reduce the cost of electricity to Americans, and that this reduced cost may lead to an increase in the overall use of electricity. This is a significant oversight. Just as the lower coal prices are expected to lead to the increased use of coal, the lower electric prices should also increase the use of electricity. That would require the burning of additional fuel, the emission of more GHGs, and greater economic costs from damages caused by climate change. Any use of the IPM or another model by BLM here must not simply assume a fixed level of demand for electricity for each year no matter what happens to fuel and other electric generating costs. Accurate modelling must be able to reflect market adjustment to lower energy prices.

3. BLM Must Evaluate Whether Continued Federal Coal Leasing is Inconsistent with U.S. GHG Emission Reduction Goals and International Climate Commitments.

President Obama has called climate change “a challenge that will define the contours of this century more dramatically than any other.”<sup>43</sup> As aptly summarized in PEIS scoping comments submitted by dozens of renowned climate scientists: “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.”<sup>44</sup>

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 or 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. In particular, BLM

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<sup>43</sup> President Obama, Remarks By The President At The Glacier Conference -- Anchorage, AK (SEPT. 1, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/09/01/remarks-president-glacier-conference-anchorage-ak> (last visited July 18, 2016).

<sup>44</sup> Letter from Ken Caldeira, et al., to Sec’y Sally Jewell, et al., “Scientists Support Ending Coal Leasing on Public Lands to Protect the Climate, Public Health, and Biodiversity” (July 27, 2016), attached as Ex. 5.

should listen to what the Obama administration's climate scientists have said on the importance of taking immediate steps to curb GHG emissions. In December 2015, U.S. EPA climate scientists with more than 25 years of professional experience in climate change, including work on the Intergovernmental Panel on Climate Change ("IPCC") reports, Dr. Christopher Field submitted a declaration in support of the President's Clean Power Plan that included a stark picture of the dire need to take immediate steps to keep fossil fuels in the ground in order to address the worst effects of climate change. Dr. Field states, "[i]f the world is to limit the likelihood of exceeding 2°C over pre-industrial temperatures, the window for cost-effective action is narrow and rapidly closing. A delay of only a few years will increase the likelihood of missing the target as well as the cost and complexity of reaching it."<sup>45</sup> With regard to the available global carbon budget for remaining within 2 degrees Celsius of pre-industrial times, Dr. Field's finding is dramatic: "at 2014 emission rates, we burn through the remaining budget of 900 billion tons of CO<sub>2</sub> in only 24 years. In every passing year without action, CO<sub>2</sub> emissions consume about 4% of the total remaining budget. Against this background, it is apparent why delaying emission reductions by even a few years can make a big difference for our prospects for staying within this budget and limiting the risks of severe consequences."<sup>46</sup> In the PEIS, BLM must address whether issuing new federal coal leases and renewals for existing federal coal leases is in line with the goals of our national climate objectives and international climate commitments, and it must do so in the context of the overwhelming state of science that tell us we must take immediate action to avoid irreversible climate harms.

It appears very unlikely, given the state of scientific consensus around climate change, that efforts to meet our international climate commitments are compatible with leasing and burning federally-owned coal well into the future. Simply put, 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 GHG emissions and the desire to meet our national and international emission reduction goals.

As explained by the Council on Environmental Quality in its 2014 Draft Climate Guidance, 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."<sup>47</sup> This draft guidance, of course, does not impose any new obligations on agencies. NEPA regulations provide that federal agencies "shall discuss any inconsistency of a proposed action with any approved State or local plan," 40 C.F.R. § 1506.2(d), and further require agencies to disclose "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a

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<sup>45</sup> Declaration of Christopher Field, U.S. Environmental Protection Agency, in West Virginia v. EPA, Case No. 15-1363, Document #1586661, (D.C. Cir.) (filed Dec. 3, 2015) at 3, attached as Ex. 6.

<sup>46</sup> Id. at 9-10.

<sup>47</sup> 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).

reservation, Indian tribe) land use plans, policies and controls for the area concerned.” 40 C.F.R. § 1502.16(c).

The U.S. has established several critical targets calling for the reduction of greenhouse gas emissions. Most prominently, earlier this year the U.S. signed the historic Paris Agreement, which represents an international agreement to limit global temperatures to 1.5-2°C above pre-industrial levels:

This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.<sup>48</sup>

To meet this threshold of safety, “deep reductions in global emissions will be required,” and “Developed country Parties shall continue taking the lead by undertaking economy-wide absolute emission reduction targets.”<sup>49</sup>

Further, an increasing body of scientific literature indicates that to avoid the worst consequences of climate change, the vast majority of fossil fuel reserves must stay in the ground. President Obama expressed a similar point when rejecting a permit for the Keystone XL pipeline, stating: “if we’re going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we’re going to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.”<sup>50</sup>

For example, the IPCC has concluded that in order to have better than even odds of keeping global temperatures at tolerable levels, “cumulative CO<sub>2</sub> emissions from all anthropogenic sources [must] stay between ... 0 and 1000 GtC.... An amount of 531 [446 to 616] GtC, was already emitted by 2011.”<sup>51</sup> This means that for the rest of century all nations on the planet can only emit approximately 470 GtC. To meet this limit, “between two-thirds and

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<sup>48</sup> United Nations, Framework Convention on Climate Change, Paris Agreement, Article 2 ¶ 1(a) (Dec. 11, 2015).

<sup>49</sup> Paris Agreement, Adoption of the Paris Agreement, Proposal by the President, Draft decision-/CP.21, at 1; *id.* at Article 4 ¶ 4.

<sup>50</sup> The White House, Statement by the President on the Keystone XL Pipeline (Nov. 6, 2015), attached as Ex. 2, and available at <https://www.whitehouse.gov/the-press-office/2015/11/06/statement-president-keystone-xl-pipeline> (last visited July 28, 2016).

<sup>51</sup> IPCC, Working Group I Contribution to the IPCC Fifth Assessment Report: Climate Change 2013: the Physical Science Basis: Summary for Policy Makers (2013) at 25.



four-fifths of the planet's reserves of coal, oil, and gas" need to stay in the ground.<sup>52</sup> However, if unabated, "[b]urning all fossil fuels would produce a different, virtually uninhabitable, planet."<sup>53</sup>

A recent peer-reviewed article published in the prestigious research journal Nature concluded that if we are to keep climate change below dangerous levels – 80 percent of global coal reserves, half of all oil reserves, and a third of oil reserves must stay in the ground through 2050.<sup>54</sup> The United States must leave between 92% and 95% of its coal reserves in the ground.<sup>55</sup> As President Obama affirmed recently, "climate change can no longer be denied – or ignored."<sup>56</sup>

In May 2016, the Stockholm Environment Institute ("SEI") 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."<sup>57</sup> SEI ultimately concluded that under a choice to phase out the federal coal leasing program in favor of a "no leasing" alternative, "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 CO<sub>2</sub> emissions by 100 million tonnes per year by 2030, and by greater amounts thereafter."<sup>58</sup>

In addition to the Paris Agreement and the IPCC findings, the Clean Power Plan, implementation of which is currently stayed pending litigation, calls for reducing power sector

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<sup>52</sup> Bill McKibben, Global Warming's Terrifying New Math, ROLLING STONE (Aug. 2, 2012); Bill McKibben, Obama and Climate Change: The Real Story, ROLLING STONE (Dec. 17, 2013).

<sup>53</sup> Hansen, et al., Climate Sensitivity, Sea Level and Atmospheric Carbon Dioxide, 371 PHIL. TRANS. R. SOC'Y (2013); see also Global Carbon Project, Global Carbon Budget 2014 (Sept. 14, 2014).

<sup>54</sup> Christophe McGlade & Paul Ekins, The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2 [deg] C, NATURE Vol. 517, at 187-190 (Jan. 7, 2015) summary available at <http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html> (last visited Jan. 15, 2016), attached as Ex. 3.

<sup>55</sup> Id. at 189, Table 1.

<sup>56</sup> Barack Obama, President of the United States, Weekly Address (Apr. 18, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/04/17/weekly-address-climate-change-can-no-longer-be-ignored-0> (last visited June 15, 2016).

<sup>57</sup> P. Erickson & M. Lazarus, Stockholm Environment Institute, How would phasing out U.S. federal leases for fossil fuel extraction affect CO<sub>2</sub> emissions and 2°C goals?, at 9 (May 2016) (citing Rogelj et al. 2011; IPCC 2014; Raupach et al. (2014)), attached as Ex. 7.

<sup>58</sup> Id. at 3.

greenhouse gas emissions to 30 percent below 2005 levels by 2030.<sup>59</sup> In November 2014 the President announced a joint U.S.-China agreement aimed at reducing climate pollution that calls for even more aggressively cutting net greenhouse gas emissions to 26-28% below 2005 levels by 2025,<sup>60</sup> which mirrors the United States' Paris agreements.<sup>61</sup> Even assuming the Clean Power Plan is implemented as designed, in combination with other efforts, at least one study has concluded that the U.S. is unlikely to meet the 26%-28% reduction target without deep additional cuts to GHG emissions, and that leasing additional coal will only make that job more difficult.<sup>62</sup>

In order to comply with its NEPA obligations and the draft guidance provided by CEQ, BLM must evaluate whether continued expansion and operation of the federal coal program is consistent with the nation's GHG emission reduction goals and international agreements. BLM must be frank with the public and decisionmakers about the scientific consensus to leave fossil fuels in the ground in order to avert the worst impacts of climate disruption, and BLM must evaluate whether a decision to continue with the federal coal program would undermine our efforts to meet our national and international climate commitments. We are skeptical that business as usual in the federal coal program—or any new leasing at all—is compatible with achieving the interim goals of a 25%-28% reduction in U.S. GHG emissions by 2025, or 80% by 2050, let alone the goal of keeping global temperatures below 1.5- 2.0 degrees Celsius.

4. BLM Must Use the Social Cost of Carbon and Social Cost of Methane to Evaluate Climate Impacts of Considered Alternatives in the PEIS.

Beyond quantifying the volume of carbon dioxide and methane emissions that result from the federal coal program, and comparing those emissions totals among alternatives, BLM must also use the social cost of carbon and social cost of methane to evaluate the impact, and not just the volume, of carbon pollution. These social-cost tools are based on sound science; have already been used by federal agencies, including BLM, to evaluate the impacts of agency policy

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<sup>59</sup> U.S. Environmental Protection Agency, Fact Sheet, Overview of the Clean Power Plan, available at <https://www.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan> (last visited July 27, 2016).

<sup>60</sup> White House Fact Sheet, U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation (Nov. 11, 2014), attached as Ex. 71, available at <https://www.whitehouse.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change> (last visited July 27, 2016).

<sup>61</sup> See White House Fact Sheet, U.S. Reports its 2025 Emissions Target to the UNFCCC (March 31, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc> (last visited July 28, 2016); United States, UNFCC submission *supra* note 11.

<sup>62</sup> Doug Vine, Center for Climate and Energy Solutions, Achieving the United States' Intended Nationally Determined Contribution (July 2016), available at <http://www.c2es.org/docUploads/achieving-us-indc-07-2016-update.pdf> (last visited July 27, 2016).

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. § 1502.22(b)(4). 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. They are the best tools now available for agencies to use in analyzing the climate impacts of proposed federal actions.

a. Background: The Social Cost of Carbon and Social Cost of Methane

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.<sup>63</sup> The working group's primary goal was to help federal agencies engaged in rulemaking to quantify the economic benefit of federal actions that reduce CO<sub>2</sub> 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 CO<sub>2</sub> emissions in a given year, expressed as \$/ton.<sup>64</sup> 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.<sup>65</sup> The IWG updated the social cost of carbon in 2013.<sup>66</sup>

Like the social cost of carbon, the social cost of methane estimates the global economic cost of adding one additional ton of methane to the atmosphere (the social cost of carbon does

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<sup>63</sup> Interagency Working Group on Social Cost of Carbon, Technical Support Document: Social Cost of Carbon, at 2-3 (Feb. 10, 2010), available at <http://www.epa.gov/otaq/climate/regulations/scc-tsd.pdf> (last visited July 27, 2016).

<sup>64</sup> U.S. Environmental Protection Agency, Fact Sheet: Social Cost of Carbon (Nov. 2013), available at <http://www.epa.gov/climatechange/Downloads/EPAactivities/scc-fact-sheet.pdf> (last visited July 27, 2016).

<sup>65</sup> Interagency Working Group, Technical Update of the Social Cost of Carbon, at 2 (May 2013), available at [http://www.whitehouse.gov/sites/default/files/omb/inforeg/social\\_cost\\_of\\_carbon\\_for\\_ria\\_2013\\_update.pdf](http://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf) (last visited July 27, 2016).

<sup>66</sup> Id.

the same thing, but for carbon dioxide). In August 2015, EPA used the Marten *et al.* social cost of methane estimate in the Regulatory Impact Analysis for the proposed New Source Performance Standard for methane from oil and gas production.<sup>67</sup> This study estimates that methane emissions in 2015 result in global economic damages that range from \$490 to \$3,000/ton, depending on the discount rate used.<sup>68</sup> EPA explained why using Marten *et al.* (2014) is a sound, justifiable methodology. Following the agency's protocol, EPA transparently disclosed the social cost estimates under four different discount rates, just as the IWG does for the social cost of carbon.<sup>69</sup>

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.<sup>70</sup> The social cost of carbon and social cost of methane are particularly useful with regard to coal leasing because it allows decision makers to understand the impact of projects "that have small, or 'marginal,' impacts on cumulative global emissions."<sup>71</sup> As CEQ has confirmed, statements that a particular agency decision will result in only a small fraction of global GHG concentrations should not be used to avoid analyzing the impact of those emissions.<sup>72</sup> Such statements, according to CEQ, reflect the nature of climate change rather than the impact of any particular project.<sup>73</sup> Using the social cost of carbon in NEPA reviews, by contrast, would help agencies move beyond the frequent and problematic boilerplate statements about climate change by providing a scientifically defensible means of quantifying the federal coal leasing program's climate impacts. Understanding the climate impacts of coal mining are particularly useful on a programmatic level, given the cumulative and global nature of climate change. As noted in CEQ's draft NEPA climate guidance, analyzing the climate impact of any one proposal may appear small given the global nature of the problem, whereas a programmatic review of the federal coal program will provide a far more comprehensive understanding of BLM's contribution to the climate problem and the economic damages from climate change that are already being felt in this country. Given that in most years federally-owned coal accounts for approximately 41 percent of all coal burned in the U.S., 81 Fed. Reg. 17,200, 17,221 (Mar. 31, 2016), the social costs of burning that much coal are surely significant. For example, the gross

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<sup>67</sup> U.S. Environmental Protection Agency, Regulatory Impact Analysis of the Proposed Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector, 4-12 to 4-17 (August 2015), available at [http://www3.epa.gov/airquality/oilandgas/pdfs/og\\_prop\\_ria\\_081815.pdf](http://www3.epa.gov/airquality/oilandgas/pdfs/og_prop_ria_081815.pdf) (last visited July 27, 2016).

<sup>68</sup> Id. at 4-14.

<sup>69</sup> Id.

<sup>70</sup> 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.

<sup>71</sup> Interagency Working Group on Social Cost of Carbon, Technical Support Document, at 1.

<sup>72</sup> Consideration of Greenhouse Gas Emissions and Climate Change Effects in NEPA Reviews, 79 Fed. Reg. at 77,825.

<sup>73</sup> Id.

social costs of burning the approximately 400 million tons of coal mined from federal leases each year is approximately \$30 billion per year.<sup>74</sup> That is more than 20 times BLM’s annual budget. The gross social costs between now and 2050 of the federal coal program, continued at current levels, would likely exceed \$1 trillion.

Despite some uncertainties, the social cost of carbon and social cost of methane nonetheless reflects the best economic and scientific understanding available, and are intended to be updated to reflect the most current thinking on the topic. In July 2014, the Government Accountability Office affirmed the IWG’s 2010 and 2013 analyses on the social cost of carbon and praised the group for its transparent process, accurate disclosure of scientific and economic uncertainties, and consensus-based decision making model.<sup>75</sup>

b. The Social Cost of Carbon and Social Cost of Methane Are Helpful to Decision Makers in the NEPA Process

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.

First, although agencies such as BLM, the Forest Service, and OSMRE often quantify the amount of carbon dioxide or CO<sub>2</sub>-e (carbon dioxide equivalent) emissions from mining and burning coal from federal leases, these agencies have not yet taken the next step of employing the social cost of carbon to inform the public about the impact of those emissions. An isolated calculation of the amount of carbon emissions that would result from a particular project provides no meaningful insight as to the effect that those emissions will have on our climate. By contrast, the social cost of carbon offers an actual estimate of the damage caused by each incremental ton of carbon emissions.

Second, the social cost of carbon and methane protocols describe those damage estimates in monetary terms, which are far easier for decision makers and the public to comprehend and contextualize than tons of CO<sub>2</sub>-e. In doing so, the social cost of carbon provides a concrete assessment of a project’s social and environmental impacts and provides a tangible sense of the

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<sup>74</sup> Calculated by taking 400 million (tons coal mined per year) \* 2 (tons of CO<sub>2</sub> emitted during combustion per ton of coal mined, at a conservative estimate) \* \$38 (per ton figure for the 2015 SCC at 3% discount rate) = \$30.4 billion. This is the gross, rather than net social cost. Net social cost would account for substitution of other fuels such as coal, natural gas, and renewables, and overall changes in electricity demand.

<sup>75</sup> Gov’t Accountability Office, Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates (July 2014), available at <http://www.gao.gov/assets/670/665016.pdf>.

scale of damage that both the public and decision makers can readily understand. As explained by one legal commentator, the social cost of carbon “allow[s] agencies to consider those GHG emissions ... in a meaningful way,” and “assigning a price to carbon emissions – even a conservative price – makes the cost of those emissions concrete for agency decision makers.”<sup>76</sup>

Of course, we do not imply that the impacts of climate change can be fully captured by a dollar figure. Droughts, floods, extreme weather events, rising sea levels, and other phenomena related to climate change present threats to our planet that extend far beyond economic harms. Agencies must analyze not only the quantitative (and monetizable) climate impacts of proposed actions, but the qualitative and non-monetizable impacts as well. Nevertheless, to the extent that a project’s impacts can be quantified, the social cost of carbon and social cost of methane are the best and most rigorous tools currently available for understanding the damages linked to GHG emissions, rather than simply the extent of the emissions themselves.

BLM must also be aware that the federal social cost of carbon values likely under-count the true social cost of an additional ton of CO<sub>2</sub>, perhaps by multiple orders of magnitude. For instance, researchers at Stanford University published a study showing that the integrated assessment models (“IAMs”) that generated the federal social cost of carbon (“SCC”) estimates do not properly account for several critical variables, particularly effect of climate change on economic growth rates and resulting disparities between rich and poor regions.<sup>77</sup> This study calculated that adjusting the IAM models to account for these factors would increase the near-term SCC by a factor of close to seven.<sup>78</sup> Other research demonstrates that the SCC discount rates do not adequately represent the level of risk aversion that decisionmakers generally adopt in response to conditions of heightened uncertainty. Adjusting the SCC to include a risk premium in accord with accepted econometric principles would increase the federal values by several orders of magnitude.<sup>79</sup> Another critique of the federal SCC values observes that the IAM models use quadratic damage functions, which greatly underestimate the rate and intensity of economic damage after a certain temperature threshold is crossed.<sup>80</sup>

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<sup>76</sup> Mark Squillace & Alexander Hood, NEPA, Climate Change, and Public Land Decision Making, 42 ENVTL. L. 469, 510, 517 (2012).

<sup>77</sup> Moore, F. & Diaz, D., Temperature impacts on economic growth warrant stringent mitigation policy, 5 NATURE CLIMATE CHANGE 127-131 (Jan. 12, 2015), prepublication version attached as Ex. 8.

<sup>78</sup> Id. at 128.

<sup>79</sup> Howarth, R.B., et al., Risk mitigation and the social cost of carbon, 24 Global Environmental Change 123-131 (Jan. 2014), prepublication version attached as Ex. 9.

<sup>80</sup> Weitzmann, M.L., GHG Targets as Insurance Against Catastrophic Climate Damages, National Bureau of Economic Research Working Paper No. 16136 (2010), attached as Ex. 10; see also Sierra Club, Comments on the Interagency Working Group’s (IWG) Technical Support Document: Social Cost of Carbon (SCC) for Regulatory Impact Analysis Under Executive Order 12866 (Docket Not.OMB-2013-0007-0083) (Feb. 25, 2014), attached as Ex. 11 (discussing Weitzmann, Howarth, and other research).

EPA itself has reached a similar conclusion:

[G]iven current modeling and data limitations, [the federal SCC values] do[] not include all important damages. As noted by the IPCC Fourth Assessment Report, it is “very likely that [SCC] underestimates” the damages. The models used to develop SCC estimates, known as integrated assessment models, do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research.<sup>81</sup>

BLM should explain this fact in its PEIS and at least acknowledge the body of a research pointing to much higher values for each additional ton of carbon emitted. While we agree that BLM should start with the federal SCC values when analyzing the impacts of the carbon dioxide emissions from the federal coal leasing program and its alternatives, BLM must also directly confront the fact that the true social impacts of the associated carbon dioxide emissions are probably much greater than the federal SCC values represent.

Third, although NEPA does not require agencies to conduct a cost-benefit analysis (*i.e.*, a comparison where a project gets approved only if the benefits outweigh the costs), in every NEPA document, BLM and other agencies routinely calculate a proposed project’s economic benefit to the local economy, measuring the dollar value of jobs, royalties, and taxes, among other factors.<sup>82</sup> Agencies often use these quantified economic benefits to justify approving the

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<sup>81</sup> U.S. Environmental Protection Agency, The Social Cost of Carbon, <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> (last visited July 27, 2016).

<sup>82</sup> See, e.g., Office of Surface Mining Reclamation & Enforcement, Bull Mountains Mine No. 1 Environmental Assessment (Jan. 2015), <http://www.wrcc.osmre.gov/initiatives/bullMountainsMine/BullMountainsMineEA.pdf>; U.S. Forest Service, Final Environmental Impact Statement for Pawnee National Grassland (Dec. 2014), [http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nea/95573\\_FSPLT3\\_2393686.pdf](http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nea/95573_FSPLT3_2393686.pdf).

project, without any attempt to quantify the costs of the agency's decision.<sup>83</sup> Using the social costs of carbon and methane in the PEIS would provide a useful dollars-to-dollars comparison outside the parameters of a strict cost-benefit analysis, allowing the public to understand the scale of climate impacts of the federal coal leasing program and its alternatives. It would further provide BLM with the opportunity to weigh global economic harm caused by the climate impacts of the program against the extent of any economic benefit in terms of jobs, taxes, etc., and thus allow BLM and the Secretary of Interior to make a fully informed decision on the best course forward.

By omitting any discussion of the economic harm caused by a project, federal agencies often effectively put a zero on that side of the ledger, making it appear as though there is no quantifiable cost associated with a project. In the context of climate change, this is a demonstrably (and overwhelmingly) untrue assumption—the social costs of carbon and methane allow decision makers and the public to estimate the climate-based costs of a proposed project. The White House estimates that in 2012, climate-related disasters cost the American economy more than \$100 billion<sup>84</sup> and affirmed that “climate change is not a distant threat, we are already seeing impacts in communities across the country.”<sup>85</sup>

Moreover, NEPA specifically requires federal agencies to analyze and disclose the environmental effects of their actions, including “ecological . . . economic [and] health” impacts. 40 C.F.R. § 1508.8. By ignoring the social costs of carbon and methane, as most federal agencies do now when evaluating federal coal leases, the agencies perform half of an analysis, quantifying purported economic benefits while ignoring an available and easy-to-use tool for similarly quantifying economic costs of the proposed project—precisely the sort of misleading analysis NEPA is designed to avoid. See Ctr. for Biological Diversity v. NHTSA, 538 F.3d 1172, 1217 (9th Cir. 2008).

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<sup>83</sup> See, e.g., Bureau of Land Management., Environmental Assessment for the West Elk Coal Lease Applications (June 2012), available at [http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/uncompahgre\\_field/ufo\\_nepa\\_documents0.Par.96415.File.dat/12-13%20West%20Elk%20Coal%20Lease%20Mod%20EA.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/uncompahgre_field/ufo_nepa_documents0.Par.96415.File.dat/12-13%20West%20Elk%20Coal%20Lease%20Mod%20EA.pdf) (last visited July 28, 2016); Bureau of Land Management, Wright Area FEIS available at <http://www.blm.gov/wy/st/en/info/NEPA/documents/hpd/Wright-Coal.html> (last visited July 28, 2016); Office of Surface Mining Reclamation & Enforcement, Bull Mountains Mine No. 1 Environmental Assessment (Jan. 2015), available at <http://www.wrcc.osmre.gov/initiatives/bullMountainsMine/BullMountainsMineEA.pdf> (last visited July 28, 2016).

<sup>84</sup> The White House, Climate Change and President Obama's Action Plan, <http://www.whitehouse.gov/climate-change> (last visited July 26, 2016).

<sup>85</sup> White House, Fact Sheet, Administration Announces Actions To Protect Communities From The Impacts Of Climate Change, (Apr. 7, 2015), <https://www.whitehouse.gov/the-press-office/2015/04/07/fact-sheet-administration-announces-actions-protect-communities-impacts-> (last visited July 28, 2016).



As one recent example reveals, BLM has already utilized a social cost metric for determining the potential benefits of a rulemaking proposal to reduce climate emissions. On February 8, 2016, BLM published a proposed rule to reduce waste of natural gas from venting, flaring, and leaks during oil and natural gas production. BLM, Proposed Rule, Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 6616 (Feb. 8, 2016). BLM used the social cost of methane metric developed by EPA experts to evaluate the costs and benefits of the proposed rule, relied on the metric throughout its analysis, and explicitly concluded that the benefits of the proposed natural gas rule outweighed the costs based on the monetized benefits of methane reduction as calculated via the social cost of methane. See id. at 6624-25, 6670-72. The Regulatory Impact Analysis (“RIA”) for the rule explains BLM’s use of the metric, stating:

[BLM] estimated the social cost of methane using the values presented by Marten *et al.* (2014) and used by the EPA in its analysis of its Subpart OOOOa proposed regulation . . . and its proposed rule New Source Standards of Performance for Municipal Solid Waste Landfills. . . . [BLM] calculated the global social benefits of methane emissions reductions expected from the proposed NSPS [New Source Performance Standards] using estimates of the social cost of methane (SC-CH<sub>4</sub>), a metric that estimates the monetary value of impacts associated with marginal changes in methane emissions in a given year. It includes a wide range of anticipated climate impacts, such as net changes in agricultural productivity and human health, property damage from increased flood risk, and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning.<sup>86</sup>

Consistent with BLM’s analysis of the draft natural gas waste rule, the PEIS should use social cost metrics, including the 2013 Interagency Working Group’s social cost of carbon, and EPA’s 2014 social cost of methane, and any subsequent updates thereto, in evaluating the climate impacts of each alternative.<sup>87</sup>

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<sup>86</sup> See Bureau of Land Management, Regulatory Impact Analysis for: Revisions to 43 C.F.R. 3100 (Onshore Oil and Gas Leasing) and 43 C.F.R. 3600 (Onshore Oil and Gas Operations) (RIA) (Jan. 14, 2016) at 32-33, attached as 12.

<sup>87</sup> We note that the leaders of the U.S., Mexico, and Canada last month issued a joint statement in which stated in part: “Canada, the U.S. and Mexico will align approaches to account for the social cost of carbon and other greenhouse gas emissions when assessing the benefits of emissions-reducing policy measures.” See The White House, Leaders’ Statement on a North American Climate, Clean Energy, and Environment Partnership (June 29, 2016), attached as Ex. 13. A policy measure to reduce federal coal mining is one that would result in emissions reductions, and thus per the partnership agreement should be accounted for using the social cost of carbon.

5. The PEIS Should Evaluate the Impacts of Coal Mine Methane and Mitigation Measures to Limit Coal Mine Methane Emissions.

There is increasing scientific evidence that for humanity to have a chance to keep climate change within tolerable levels (below 2 °C), governments around the world must act quickly to reduce methane emissions in particular.<sup>88</sup> Part of that consensus is that methane pollution is more damaging than previously thought. The Fifth Assessment Report of the Intergovernmental Panel on Climate Change (“IPCC”) in 2013 concluded that methane is a much more potent driver of climate change than scientists understood it to be just a few years previous—with a global warming potential as much as 36 times greater than CO<sub>2</sub> over a 100-year time frame, and 87 times greater than CO<sub>2</sub> over a 20-year time frame. Approximately one-third of the anthropogenic climate change we are experiencing today is attributable to methane and other short-lived climate pollutants, and about thirty percent of the warming we will experience over the next two decades as a result of this year’s greenhouse gas emissions will come from methane.<sup>89</sup> Climate scientists now recognize that avoiding catastrophic climate change will require both a long-term strategy to reduce carbon dioxide emissions and near-term action to mitigate methane and similar “accelerants” of climate change. As a 2013 article in the journal *Science* stated: “The only way to permanently slow warming is through lowering emissions of CO<sub>2</sub>. The only way to minimize the peak warming this century is to reduce emissions of CO<sub>2</sub> and [short-lived climate pollutants],” including methane.<sup>90</sup>

Because of methane’s outsized role in near-term climate-forcing, this administration has specifically targeted methane pollution to address climate change. In 2013, the White House published a climate strategy that concluded: “Curbing emissions of methane is critical to our overall effort to address global climate change.”<sup>91</sup>

The need to address methane’s damaging climate impacts spurred both BLM and EPA to propose regulations to limit the fugitive methane emissions from oil and gas operations. EPA’s

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<sup>88</sup> B. McKibben, *Global Warming’s Terrifying New Chemistry*, THE NATION (Mar. 23, 2016), attached as Ex. 14, and available at <http://www.thenation.com/article/global-warming-terrifying-new-chemistry/> (last visited July 28, 2016).

<sup>89</sup> Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Thomas Stocker et al., eds. 2013), available at [http://www.climatechange2013.org/images/report/WG1AR5\\_ALL\\_FINAL.pdf](http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf) (last visited July 28, 2016).

<sup>90</sup> J.K. Shoemaker, et al., *What Role for Short-Lived Climate Pollutants in Mitigation Policy?* 342 SCIENCE 1323-24 (2013), attached as Ex. 15, and available at <http://www-ramanathan.ucsd.edu/files/pr200.pdf> (last visited July 28, 2016).

<sup>91</sup> Executive Office of the President, *The President’s Climate Action Plan* (June 2013), attached as Ex. 16, and available at <https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf> (last visited July 27, 2016).

2015 proposed regulations specifically address methane’s damaging climate impacts.<sup>92</sup> BLM has issued draft rules that also address climate impacts.<sup>93</sup> Both agencies concluded that reducing methane pollution would have significant social benefits, based in large part on the significant social cost of methane and/or carbon in continuing to permit unnecessary methane releases.<sup>94</sup> Earlier this year, the U.S. and Canada also signed a climate agreement which calls for significant methane reductions from the oil and gas sector.<sup>95</sup>

Coal mines—including operations that mine federal coal in the U.S. —are a significant source of methane pollution. Eight percent of global methane emissions come from coal mines.<sup>96</sup> One coal mine operating on federal leases in Colorado is reportedly that state’s largest single source of methane pollution; this in a state with a vast amount of oil and gas infrastructure.<sup>97</sup> As a result, coal mine methane (“CMM”) has also long been targeted for reduction by the federal government. In 1994, EPA established the Coalbed Methane Outreach Project (“CMOP”) to “work[] cooperatively with the coal mining industry in the United States – and other major coal-producing countries – to reduce CMM emissions. By helping to identify and implement methods to recover and use CMM instead of emitting it to the atmosphere, CMOP has played a key role in the United States’ efforts to reduce GHG emissions and address

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<sup>92</sup> U.S. Environmental Protection Agency, Proposed Rule, Oil and Natural Gas Sector, 80 Fed. Reg. 56,593, 56,598 (Sep. 18, 2015), attached as Ex. 17, and available at <https://www.gpo.gov/fdsys/pkg/FR-2015-09-18/pdf/2015-21023.pdf> (last visited July 27, 2016).

<sup>93</sup> Bureau of Land Management, Proposed Rule, Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 6,616, 6,617 (Feb. 8, 2016), attached as Ex. 18, and available at <https://www.gpo.gov/fdsys/pkg/FR-2016-02-08/pdf/2016-01865.pdf> (last visited July 28, 2016).

<sup>94</sup> U.S. Environmental Protection Agency, Proposed Rule, Oil and Natural Gas Sector, 80 Fed. Reg. at 56,657 (Ex. 17); BLM, Proposed Rule, Waste Prevention, 81 Fed. Reg. at 6670-71 (Ex. 18); Bureau of Land Management, Regulatory Impact Analysis for Revisions to Onshore Oil and Gas Leasing (Jan. 14, 2016) at 32, 130-49 (Ex. 12).

<sup>95</sup> The White House, U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership (Mar. 10, 2016), attached as Ex. 19, and available at <https://www.whitehouse.gov/the-press-office/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership> (last visited July 28, 2016).

<sup>96</sup> “In 2015, global methane emissions from coal mines were estimated to be 630 MMTCO<sub>2</sub>E, accounting for 8 percent of total global methane emissions.” U.S. Environmental Protection Agency, Frequent Questions About Coal Mine Methane, available at <https://www.epa.gov/epa-coalbed-methane-outreach-program/frequent-questions> (last visited July 28, 2016).

<sup>97</sup> See K. Ray, Colorado’s worst methane polluter is an Arch Coal mine, Colorado Independent (May 3, 2016), attached as Ex. 20, and available at <http://www.coloradoindependent.com/159131/colorados-worst-methane-polluter-is-an-arch-coal-mine-west-elk-john-hickenlooper> (last visited July 28, 2016).

global climate change.”<sup>98</sup> In 2014, the administration published a strategy to reduce methane pollution which specifically identified the need for voluntary and regulatory actions to limit methane emissions from coal mines.<sup>99</sup>

Further, in 2014 BLM issued an advance notice for proposed rulemaking (“ANPR”) requesting “comments and suggestions that might assist the agency in the establishment of a program to capture, use, or destroy waste mine methane that is released into the mine environment and the atmosphere as a direct consequence of underground mining operations on Federal leases for coal and other minerals.”<sup>100</sup> The ANPR for waste mine methane noted that the agency had the authority to require methane capture in coal leases:

Based on the readjustment authority [30 U.S.C. § 207], the BLM may readjust lease terms to both authorize and require lessees to capture otherwise vented [waste mine methane] to use or sell. The BLM also has authority under the same section of the MLA to include such terms and conditions in new coal leases.<sup>101</sup>

The ANPR also notes that agency climate policy supports the control or elimination of methane pollution from coal mines:

[R]educing [waste mine methane] venting would reduce emissions of a potent greenhouse gas, consistent with the President’s Climate Action Plan— Strategy to Reduce Methane Emissions (March 2014) and Secretarial Order 3289, Amendment No. 1 (“Addressing the Impacts of Climate Change on America’s Water, Land, and other Natural and Cultural Resources,” dated February 22, 2010).<sup>102</sup>

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<sup>98</sup> U.S. Environmental Protection Agency, Coal Mine Methane – What EPA is Doing, attached as Ex. 21, and available at <https://www.epa.gov/epa-coalbed-methane-outreach-program/what-epa-doing> (last visited 28, 2016).

<sup>99</sup> The White House, Climate Action Plan, Strategy to Reduce Methane Emissions (Mar. 2014), attached as Ex. 22, and available at [https://www.whitehouse.gov/sites/default/files/strategy\\_to\\_reduce\\_methane\\_emissions\\_2014-03-28\\_final.pdf](https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf) (last visited July 28, 2016).

<sup>100</sup> 79 Fed. Reg. 23,923 (Apr. 29, 2014).

<sup>101</sup> *Id.* at 23,924; *see also id.* at 23,923 (citing 30 U.S.C. § 189, which states that the Secretary “is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of” the Mineral Leasing Act governing coal leasing, and 30 U.S.C. § 207, which states that coal leases “shall include such other terms and conditions as the Secretary shall determine.”).

<sup>102</sup> *Id.* at 23,924.

BLM should immediately finalize its coal mine methane rulemaking to address harmful methane emissions now, even as it considers broader reforms. In addition, BLM must evaluate the climate consequences of coal mine methane and potential mitigation to reduce those emissions in its programmatic review of the federal coal leasing program. In the context of this review, if the BLM considers any alternative that provides for new coal leasing, the agency must also consider requiring methane mitigation measures on those leases. Wilderness Soc’y v. Wisely, 524 F. Supp. 2d 1285, 1309 (D. Colo. 2007) (holding that EIS must consider “all possible approaches to, and potential environmental impacts of, a particular project”).

In comments on the ANPR for the coal mine methane rulemaking, attached, Sierra Club, Earthjustice and others provided detailed recommendations for feasible and available mine methane mitigation measures.<sup>103</sup> As those comments explain, coal mine methane generally is removed from underground mines one of two ways. Methane can be removed by moving vast quantities of air, including dilute quantities of methane, through a mine’s ventilation system. This methane pollution, known as ventilation air methane (VAM), is distinct from methane removed from the coal seam by methane drainage wells (MDWs) drilled into the coal seam from above. Mitigation measures are available for both removal methods.

VAM makes up over half of all coal mining emissions in the United States and worldwide. VAM mitigation measures are technically and economically feasible and have already been employed at mines worldwide, including in the United States, to reduce 95% or more of VAM emissions. BLM and the Forest Service (which must consent to coal leasing on national forest lands) have generally declined to address such an alternative at the leasing stage, for example, when addressing lease modifications for the West Elk Mine in the last few years, despite the multiple examples of successful VAM mitigation measures. But the agencies’ previous justifications for declining to study in detail and alternative requiring the use of VAM reduction technology all lack support, and should not be used by BLM to reject such alternative in the PEIS.

In addition to measures available to reduce VAM emissions, BLM should consider carbon offsets, which are a tested, feasible, and practical alternative to allowing federal coal leaseholders to vent millions of cubic feet of methane into the atmosphere every without (or with minimal) mitigation or control. EPA has repeatedly urged land management agencies to assess carbon offsets in EAs and EISs as a way to reduce climate change impacts of agency actions. EPA has specifically noted that offsets are a reasonable alternative to lessen the impacts of coal mine methane emissions. In a 2007 letter concerning a proposal to permit methane drainage wells at the West Elk Mine, EPA specifically rejected the Forest Service’s assertion that a carbon offset alternative was not reasonable: “[I]t is reasonable to consider offset mitigation for the release of methane, as appropriate. Acquiring offsets to counter the greenhouse gas impacts of a particular project is something that thousands of organizations, including private corporations, are doing today.”<sup>104</sup> EPA specifically recommended that another EIS on a coal leasing proposal

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<sup>103</sup> See Comments by Sierra Club, et al., 1004-AE23, Waste Mine Methane Capture, Use, Sale, or Destruction, Advance Notice of Proposed Rulemaking (June 30, 2014), attached as Ex. 23.

<sup>104</sup> Letter from L. Svoboda, U.S. Environmental Protection Agency to C. Richmond, U. S. Forest Service (Aug. 7, 2007) at 7 (emphasis added), attached as Ex. 24.

“acknowledge that revenues for carbon credits are available via several existing markets.”<sup>105</sup> Similarly, EPA has recommended that a Forest Service NEPA analysis of a forest health project “discuss reasonable alternatives and/or potential means to mitigate or offset the GHG emissions from the action.”<sup>106</sup> Numerous state agencies already use offsets to control GHG emissions.<sup>107</sup>

BLM has authority to require such offsets, and numerous federal agencies require similar mitigation, and so addressing such an alternative in the PEIS is reasonable. For example, the Interior Department is a participant in an offset program related to GHG pollution from the Navajo Generating Station in Arizona. In a settlement with state, federal, tribal and conservation groups related to Clean Air Act compliance, DOI committed to reduce or offset federal CO<sub>2</sub> emissions by 3% annually for a total of 11.3 million metric tons of emissions reductions by the end of 2031.<sup>108</sup> This is intended to reduce CO<sub>2</sub> emissions and demonstrate the workability of a credit-based system to achieve pollution reductions. DOI also committed to facilitating development of Clean Energy Projects intended to achieve 80% generation of clean energy for the federal share at the Navajo Generating Station by 2035 by securing nearly 27 million megawatt hours in Clean Energy Development Credits.<sup>109</sup>

A number of underground coal mines operating on federal leases not only remove methane in dilute quantities through ventilation systems (as VAM), but also emit millions of cubic feet a day of higher concentration methane via methane drainage wells (MDWs). Because emissions from MDWs generally contain methane in higher concentrations, such emissions can be combusted, or flared, before they enter the atmosphere. Flaring results in an 87% reduction in GHG emissions compared with venting methane directly into the atmosphere.<sup>110</sup> As a State of Colorado 2016 report states:

From a climate change standpoint, emitting carbon dioxide is much less harmful on the environment than a mine’s direct emission of methane into the atmosphere. Accordingly, flaring methane,

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<sup>105</sup> U.S. Environmental Protection Agency July 2012 Comment Letter at 5 (identifying four U.S. carbon exchanges creating a market for carbon credits), attached as Ex. 25.

<sup>106</sup> Letter from L. Svoboda, U.S. Environmental Protection Agency, to T. Malecek, U. S. Forest Service, at 8 (Oct. 27, 2010), attached as Ex. 26.

<sup>107</sup> See, e.g., Settlement Agreement, ConocoPhillips and California (Sept. 10, 2007) (California agency requiring offsets as a condition of approving a project), attached as Ex. 27; Minn. Stat. § 216H.03 subd. 4(b) (Minnesota law requiring offsets for certain new coal-fired power plants); Me. Rev. Stat. Ann. tit. 38, § 580-B(4)(c) (Maine law establishing greenhouse gas initiative that includes the use of carbon offsets).

<sup>108</sup> See Technical Work Group Agreement Related to Navajo Generating Station (July 25, 2013) at 5-6, 9, available at [https://www.doi.gov/sites/doi.gov/files/migrated/upload/7-25-2013-NGS-TWG-Agreement-FINAL\\_Executed.pdf](https://www.doi.gov/sites/doi.gov/files/migrated/upload/7-25-2013-NGS-TWG-Agreement-FINAL_Executed.pdf) (last viewed July 28, 2016).

<sup>109</sup> Id.

<sup>110</sup> Daniel J. Brunner & Karl Schultz, Effective Gob Well Flaring 724 (1999), attached as Ex. 28.

which converts the residual gas emission to carbon dioxide, has nearly the same environmental impacts as using methane to generate electricity or heat.<sup>111</sup>

Where MDWs are or can be utilized, methane flaring is a reasonable, practical, effective, and feasible alternative to reduce GHG emissions from new or existing coal lease.<sup>112</sup>

Although mitigation for coal mine methane emissions is not alone sufficient to avoid or mitigate the climate change impacts of the federal coal leasing program, it is a near-term necessity to ensure that existing coal mining does not exact irreversible consequences. The PEIS should analyze these mitigation options.

**B. The PEIS Should Evaluate the Impacts of Federal Coal Leasing on Public Lands, Water, and Wildlife**

The PEIS also must evaluate whether mining federal coal is consistent with responsible stewardship of our public lands, water, and wildlife. This stewardship is both a policy priority for the nation and an imperative under the statutes that govern BLM’s management of public resources.

In a November 3, 2015 Memorandum, President Obama established a policy for the Department of the Interior and other federal agencies that mining and other development projects on America’s public lands should result in a net benefit—or at a minimum no net loss—for the nation’s public lands, public waters, and wildlife resources.<sup>113</sup> The memorandum recognizes that “[w]e all have a moral obligation to the next generation to leave America’s natural resources in better condition than when we inherited them. . . . It is this same obligation that contributes to the strength of our economy and quality of life today.”<sup>114</sup>

This policy echoes BLM’s statutory obligations under the Federal Lands Management Policy Act (“FLPMA”), 43 U.S.C. §§ 1701-1785, which directs that:

public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and

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<sup>111</sup> State of Colorado, Coal Mine Methane in Colorado, at 14, attached as Ex. 29.

<sup>112</sup> See 2010 Conservation Scoping Letter (Ex. 30) at 88-89.

<sup>113</sup> See Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (Nov. 3, 2015), available at <https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related>, published at 80 Fed. Reg. 68,743 (Nov. 6, 2015).

<sup>114</sup> Id.

wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.

Id. § 1701(a)(8). Under FLPMA’s “multiple use and sustained yield” management directive, id. § 1701(a)(7), the federal government must manage public lands and resources in a manner that “takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land[,]” id. § 1702(3). Further, “[i]n managing the public lands the Secretary shall . . . take any action necessary to prevent unnecessary or undue degradation of the lands.” Id. § 1732(b).

Under these authorities, BLM is required not only to evaluate the impacts of federal coal leasing to public lands, water, and wildlife resources, but to avoid harm to those resources whenever possible. As described below, thorough analysis of these impacts at the programmatic scale should lead BLM to conclude that the irreversible harmful consequences to these resources due to mining and burning coal irreconcilably conflict with BLM’s stewardship obligations and can be avoided only by ending the federal coal leasing program.

#### 1. Impacts to Public Lands and Land Uses

The direct and indirect harm to public lands and land uses from the federal coal leasing program are substantial, unavoidable, unnecessary, undue, and unacceptable under FLPMA, which governs the Department’s management of federal coal resources. Between 5 and 8.4 million acres have been disturbed by surface mining in the United States.<sup>115</sup> Coal mining companies currently have control of federal coal underlying nearly half a million acres of public and private lands,<sup>116</sup> approximately 80 percent of which will be strip-mined.<sup>117</sup> These lands are closed to the public—and all non-mining uses—during active mining. Barred public uses include outdoor recreation, hunting, grazing and agriculture. While some mined land may be reclaimed, some of it is permanently altered and rendered unsuitable for pre-mine uses.<sup>118</sup>

In addition to these direct impacts to lands from coal mining, greenhouse gas emissions from the burning of coal and consequential climate disruption wreak havoc on ecosystems, not just within the mining area but on all lands. The federal government manages approximately 30

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<sup>115</sup> Sourcewatch, The footprint of coal, available at [http://www.sourcewatch.org/index.php/The\\_footprint\\_of\\_coal#How\\_much\\_land\\_has\\_been\\_disturbed\\_by\\_all\\_surface\\_mining\\_in\\_the\\_United\\_States](http://www.sourcewatch.org/index.php/The_footprint_of_coal#How_much_land_has_been_disturbed_by_all_surface_mining_in_the_United_States) (last visited July 19, 2016).

<sup>116</sup> Bureau of Land Management., Total Federal Coal Leases in Effect, Total Acres Under Lease, and Lease Sales by Fiscal Year Since 1990, available at [http://www.blm.gov/wo/st/en/prog/energy/coal\\_and\\_non-energy/coal\\_lease\\_table.html](http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy/coal_lease_table.html) (last visited July 19, 2016) (306 federal coal leases covering 482,691 acres in 2015).

<sup>117</sup> White House Fair Return Report, at 22.

<sup>118</sup> See infra § II.E, detailing unmet reclamation obligations.



percent—650 million acres—of our nation’s land along with offshore marine resources.<sup>119</sup> On federal public lands, including lands managed by BLM, the Forest Service, Fish and Wildlife Service, and National Park Service, the effects of climate change are already being felt and will only increase as our climate continues to respond to growing concentrations of greenhouse gases in our atmosphere.<sup>120</sup>

Climate change, spurred by fossil fuel combustion including burning of federal coal, catalyzes or exacerbates many harms to lands across the country, including federal public lands. For example, a combination of climate change factors including drought and high temperatures has set off a recent historical trend of more frequent and larger wildfires, a trajectory that is expected to continue as the impacts of climate change become more severe.<sup>121</sup> The impacts of more wildfires are not limited to the physical destruction of the fires themselves. Wildfires may also cause respiratory difficulties and lung disease in humans, and the ash from the fire may adversely affect water supplies.<sup>122</sup> Additionally forest fires can be worsened by the presence of increased insect populations and their adverse effects on timber. These insect populations are expected to grow in the areas most at risk for fire, particularly high-altitude forests.<sup>123</sup> In fact, climate change is expected to cause changes to insect populations in various regions of the country.<sup>124</sup> For example, milder winters will result in higher populations of less frost-resistance

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<sup>119</sup> U.S. Government Accountability Office, GAO-13-253, Climate Change: Various Adaptation Efforts Are Under Way at Key Natural Resources Management Agencies, at 2 (2013), <http://www.gao.gov/assets/660/654991.pdf>, attached as Ex. 31.

<sup>120</sup> The Interior Department’s website acknowledges that “[c]limate change affects every corner of the American continent. It is making droughts drier and longer, floods more dangerous and hurricanes more severe,” and that “[t]he impacts of climate change are forcing [the Interior Department] to change how we manage these resources. Climate change may dramatically affect water supplies in certain watersheds, impact coastal wetlands and barrier islands, cause relocation of and stress on wildlife, increase wildland fires, further spread invasive species, and more.” See <https://www.doi.gov/climate> (last visited July 27, 2016).

<sup>121</sup> The National Science and Technology Council, Committee on Environment, Natural Resources, and Sustainability Subcommittee on Disaster Reduction, Wildland Fire Science and Technology Task Force Final Report, November 2015, 6; U.S. Government Accountability Office, Climate Change - Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources, August 2007, 5-6. As climate change creates longer fire seasons, the damages caused by wildfires also increase. A. L. Westerling, H.G. Hidalgo, D. R. Cayan, & T. W. Swetnam, Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity, 313-5789 *SCIENCE*, 940-943 (2006).

<sup>122</sup> See U.S. Forest Service, Forests to Faucets, at [http://www.fs.fed.us/ecosystemservices/FS\\_Efforts/forests2faucets.shtml](http://www.fs.fed.us/ecosystemservices/FS_Efforts/forests2faucets.shtml) (last visited July 21, 2016).

<sup>123</sup> J. M. Schmid & D. L. Parker, Fire and Forest Insect Pests, at [http://www.fs.fed.us/rm/pubs\\_rm/rm\\_gtr191/rm\\_gtr191\\_232\\_233.pdf](http://www.fs.fed.us/rm/pubs_rm/rm_gtr191/rm_gtr191_232_233.pdf) (last visited July 21, 2016); E. E. Strange & M. P. Ayres, Climate Change Impacts: Insects, 11-10 *ELS* (2010).

<sup>124</sup> See U.S. Government Accountability Office, Climate Change, at 6.

species, which in turn can negatively affect local vegetation, agriculture, and even other insect populations that usually might rise during the spring in areas traditionally prone to colder winters.<sup>125</sup> Climate change has also been linked to insect migrations, which can cause issues with invasive populations as they expand beyond their historical ranges due to climatological changes.<sup>126</sup> These migrations can be detrimental to local vegetation, which can in turn affect entire ecological systems.<sup>127</sup>

Climate disruption's effects on vegetation are not limited to the effects of changing insect populations. Changing temperatures are expected to increase the range of many invasive weed species across a variety of landscapes.<sup>128</sup> As one example, invasive weeds from California have been discovered advancing into northern Nevada as temperatures have increased.<sup>129</sup> In the Eastern U.S., some invasive species are projected to migrate all the way from Pennsylvania to Maine to by 2084 under current climatological patterns.<sup>130</sup> As these invasive plant species spread they will cause millions, if not billions, of dollars in damage and may outcompete to destroy local vegetation and crops.<sup>131</sup> As these processes unfold and ecosystems are altered, vulnerable species will face an increased risk of extinction as even minor changes to their habitat might offset population growth.<sup>132</sup> These types of changes can also have adverse effects on shorelines, as critical vegetation is reduced and natural barriers to erosion are weakened, dilemmas that are only further compounded by climate change's impact on rising sea levels.<sup>133</sup>

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<sup>125</sup> J.S. Bale, G. J. Masters, et al., Herbivory in Global Climate Change Research: Direct Effects of Rising Temperature on Insect Herbivores, 8-1 GLOBAL CHANGE BIOLOGY, 1-16 (2002).

<sup>126</sup> C. Parmesan, Ecological and Evolutionary Responses to Recent Climate Change, 37-1 ANNUAL REVIEW OF ECOLOGY, EVOLUTION, AND SYSTEMATICS (2006); Logan & Powell, Ghost Forests, Global Warming, and the Mountain Pine Beetle, 47 AM ENTOMOL, 160-173 (2001).

<sup>127</sup> See S. Mainka & G. Howard, Climate Change and Invasive Species: Double Jeopardy, 5 INTEGRATIVE ZOOLOGY, 102-111 (2010).

<sup>128</sup> A. McDonald, S. Riha, et al., Climate Change and the Geography of Weed Damage: Analysis of U.S. Maize Systems Suggests the Potential for Significant Range Transformations, 130 AGRICULTURE, ECOSYSTEMS, AND ENVIRONMENT, 131-140 (2009); Government Accountability Office, Climate Change, at 6.

<sup>129</sup> B. Bradley, M. Oppenheimer, et al., Climate change and plant invasions: restoration opportunities ahead?, 15-6 GLOBAL CHANGE BIOLOGY, 1511-1521 (2009).

<sup>130</sup> See A. McDonald, Climate Change and the Geography of Weed Damage.

<sup>131</sup> See U.S. Fish and Wildlife Service, The Cost of Invasive Species, at <https://www.fws.gov/verobeach/PythonPDF/CostofInvasivesFactSheet.pdf> (last visited July 21, 2016).

<sup>132</sup> T. A. Crowl, et al., The Spread of Invasive Species and Infectious Disease as Drives of Ecosystem Change, at 6-5 FRONTIERS IN ECOLOGY AND THE ENVIRONMENT, 238-246 (2008).

<sup>133</sup> Rusty Feagin, Douglas Sherman, & William Grant, Coastal Erosion, Global Sea-level Rise, and the Loss of Sand Dune Plant Habitats, at 3-7 FRONTIERS IN ECOLOGY AND THE ENVIRONMENT (2005).

The true problem with these and other harmful impacts to land from climate change is that they are not finite; as climate change worsens, so too will the adverse impacts to the land and its fauna. As the GAO recognized, climate change “poses significant financial risks to the federal government . . . in its role as the manager of large amounts of land and other natural resources.”<sup>134</sup> As such, proactive and imminent actions are required in order to avoid, reduce, and/or mitigate long-term damage to land resources.<sup>135</sup> Already, federal land management agencies have begun developing strategies to identify, monitor, and adapt to resource changes brought about by climate disruption.<sup>136</sup> In evaluating needed reforms to the federal coal leasing program, the PEIS must examine these impacts from climate change on federal public lands and land management, which continued coal leasing will only worsen.

## 2. Impacts to Water

Coal mining depletes aquifers and pollutes groundwater and surface water. The PEIS should examine these direct effects of coal mining, as well as the indirect impact on water resources due to climate change spurred by the mining and burning of federal coal.

As with land, water resources are permanently altered by coal mining. BLM has acknowledged that mining coal means removing aquifers that are never reclaimed, but instead are replaced with homogeneous backfill material.<sup>137</sup> As mines are dewatered, groundwater levels decline under surrounding lands.<sup>138</sup> The cumulative effect of mining-related drawdown and groundwater depletion from coalbed natural gas development in the same areas can be substantial. In addition to groundwater depletion, coal mining impairs water quality. BLM has observed that, as a general matter, concentrations of total dissolved solids, calcium, magnesium, and sodium sulfates all are elevated in mined areas compared to undisturbed areas.<sup>139</sup> These same pollutants may discharge to surface waters. In addition, coal mining can pollute surface waters with selenium, which is naturally present in coal and mobilized into the environment when coal-bearing strata are exposed to air and water.<sup>140</sup> Because selenium is toxic to aquatic

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<sup>134</sup> U.S. Government Accountability Office, *Climate Change*, at 3.

<sup>135</sup> National Climate Assessment and Development Advisory Committee, *Climate CHANGE IMPACTS IN THE UNITED STATES* at 4 (2014).

<sup>136</sup> See U.S. Government Accountability Office, *Climate Change*, at 23.

<sup>137</sup> Bureau of Land Management, *Wright Area FEIS*, at ES-40; see also Alton Coal Tract Lease by Application Draft Environmental Impact Statement, at ES-14 (Nov. 2011), available at [http://www.blm.gov/ut/st/en/prog/energy/coal/alton\\_coal\\_project/alton\\_coal\\_eis.html](http://www.blm.gov/ut/st/en/prog/energy/coal/alton_coal_project/alton_coal_eis.html) (last visited July 27, 2016).

<sup>138</sup> Bureau of Land Management, *Wright Area FEIS*, at ES-40.

<sup>139</sup> Bureau of Land Management, *Wright Area FEIS*, at 3-115.

<sup>140</sup> D. Lemly, *AQUATIC HAZARD OF SELENIUM POLLUTION FROM COAL MINING*, Fosdyke, Gerald B. ed. *Coal Mining: Research, Technology and Safety* (2009), available at <http://www.srs.fs.usda.gov/pubs/33826> (last visited July 26, 2016).

life and bioaccumulates in food chains, even “a small amount of selenium in water can translate to a significant environmental hazard.”<sup>141</sup> The PEIS must examine these and other direct impacts to ground and surface waters due to mining federal coal.

Further, the nation’s bodies of water are vulnerable to the impacts of climate change catalyzed and accelerated by fossil fuel development.<sup>142</sup> These existing and future impacts are broad and can range from drought, to altered runoff patterns, to a lack of drinking water and adverse effects on that dwindling water supply, to ocean acidification, and even to damage to national marine sanctuaries. While rising sea levels due to climate change will affect enormous portions of coastal lands,<sup>143</sup> the impact on water will persist far inland as well. A common problem will be drought, which is expected to become worse in broad regions ranging from California, to South Dakota, to Georgia.<sup>144</sup> As these droughts worsen surface and groundwater supplies will begin to steadily decrease, resulting in widespread water shortages.<sup>145</sup> These shortages affect not only the human population, but can be harmful to aquatic and terrestrial ecosystems and may even cause land subsidence.<sup>146</sup> As these natural processes are adversely impacted by climate change the quality of the available water will also begin to decrease.<sup>147</sup> Poor water quality can be hugely detrimental to the health of human populations, wildlife populations, and vegetation.<sup>148</sup> To make matters worse, these impacts on water quality will not be restricted to those areas facing drought. Many areas will face increased flooding due to climate change which in turn can also contribute to contaminated water supplies.<sup>149</sup>

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<sup>141</sup> Id.

<sup>142</sup> See U.S. Environmental Protection Agency, Water and Climate Change Research, at <https://www.epa.gov/water-research/water-and-climate-change-research> (last visited July 21, 2016).

<sup>143</sup> National Oceanic and Atmospheric Administration, Sea Level Rise and Coastal Flooding Impacts, at <https://coast.noaa.gov/slr/> (last visited July 21, 2016).

<sup>144</sup> Center for Climate and Energy Solutions, Drought and Climate Change, at <http://www.c2es.org/science-impacts/extreme-weather/drought> (last visited July 21, 2016).

<sup>145</sup> National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 70.

<sup>146</sup> United States Geological Survey, Groundwater and Drought, at <http://water.usgs.gov/ogw/drought/> (last visited July 21, 2016).

<sup>147</sup> National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 86-88.

<sup>148</sup> See generally Peter S. Murdoch, Jill S. Baron, & Timothy L. Miller, Potential Effects of Climate Change on Surface-water Quality in North America, 36-2 JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION (2007) (broadly discussing the various impacts of poor water quality on various populations and ecosystems).

<sup>149</sup> National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 80-81; U.S. Environmental Protection Agency, Natural Disasters – Flooding at <https://www.epa.gov/natural-disasters/flooding> (last visited July 21, 2016).

Consequently, largely varied regions from southern Florida to northern Arizona will be exposed to water-related and climatologically caused risks.<sup>150</sup>

These negative impacts are not limited to coastal water, as even the oceans themselves face increased temperatures and acidity.<sup>151</sup> As ocean acidity and temperature continue to stray further away from their norms they will create a variety of problems for aquatic ecosystems and coastal areas.<sup>152</sup> Even minor fluctuations in ocean pH levels or temperature can lead to more severe hurricane seasons, tidal patterns, and coastal precipitation.<sup>153</sup> These impacts also persist deep below the ocean's surface.<sup>154</sup> This in turn threatens national marine sanctuaries.<sup>155</sup> As these sanctuaries provide a stable environment for marine ecosystems, a disruption of the sanctuary due to acidification, water temperature, current patterns, or any other oceanographic element of climate change, would not only adversely affect the ecosystem itself, but may also inhibit scientific research being done within the sanctuary that may otherwise help stem the tide of these negative impacts.<sup>156</sup> Like land-based indirect impacts, water-based indirect impacts of climate change are not easily contained, and their harm cannot easily be mitigated once the damage is done and current management practices may become insufficient.<sup>157</sup> As a result, it is imperative that actions be taken to reduce the harm to the nation's water resources before mitigation becomes improbable.

### 3. Impacts to Wildlife

NEPA requires BLM's PEIS to identify and evaluate all impacts of the federal coal leasing program on wildlife. Specifically, this includes not only the direct impacts of coal

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<sup>150</sup> See National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 83.

<sup>151</sup> U.S. Environmental Protection Agency, Climate Change Indicators in the United States – Ocean Acidity, at <https://www3.epa.gov/climatechange/science/indicators/oceans/acidity.html> (last visited July 21, 2016); National Oceanic and Atmospheric Administration, Sea Surface Temperature (SST) Contour Charts, at <http://www.ospo.noaa.gov/Products/ocean/sst/contour/> (last visited July 21, 2016); Government Accountability Office, Climate Change, at 7.

<sup>152</sup> PMEL Carbon Program, What is Ocean Acidification?, at <http://www.pmel.noaa.gov/CO2/story/What+is+Ocean+Acidification%3F> (last visited July 21, 2016); National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 583.

<sup>153</sup> National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 20

<sup>154</sup> Id. at 48-49.

<sup>155</sup> National Oceanic and Atmospheric Administration, Sanctuaries and Climate Change, at <http://sanctuaries.noaa.gov/management/climate/welcome.html> (last visited July 21, 2016).

<sup>156</sup> See id.

<sup>157</sup> National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES, at 70.

leasing and coal mining on public land, but also the indirect and cumulative impacts to wildlife due to transporting and burning the coal.

BLM summarized many of the direct impacts of surface coal mining on wildlife in its Final EIS for the Powder River Basin Wright Area lease in 2010:

They include road kills by mine-related traffic, direct losses of less mobile wildlife species, restrictions on wildlife movement created by fences, spoil piles and pits, displacement of wildlife from active mining areas (including abandonment of nests or nesting and breeding habitat for birds), increased competition between animals in areas adjacent to mining operations, and increased noise, dust, and human presence. Habitat for aquatic species would also be lost during mining operations. Displaced animals [may] find equally suitable habitat that is not occupied by other animals, or occupy poorer quality habitat than that from which they were displaced.<sup>158</sup>

These same direct impacts can be expected for all surface coal mines on federal land and must be analyzed in the PEIS.

BLM has recognized similar impacts post-mining, including an overall “decrease in carrying capacity for some species and a decrease in vegetation diversity.”<sup>159</sup> However, in the past BLM excluded consideration of a host of indirect impacts that are the reasonably foreseeable consequences of federal coal leasing. These include:

- Impacts to wildlife from transportation infrastructure, primarily railroads, used to transport federal coal either to power plants in the U.S. or to export facilities.
- Impacts to wildlife caused by the ports – existing and proposed – that could receive shipments of federal coal for export.
- Increased dust along the entire route of the railroad, as well as the route of connecting railroads that will experience more train traffic made up largely of coal trains.
- Increased air and water pollution resulting from increased shipments of and mining of coal resulting from activities from the mine site to the port.
- Increased GHG emissions from enabling the extraction and combustion of federal coal.

The PEIS must examine these impacts wherever they may occur.

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<sup>158</sup> Bureau of Land Management, Wright Area FEIS, at ES-52 (July 2010); see also Alton Coal Tract Lease by Application Draft Environmental Impact Statement, at ES-14 (“Direct and indirect impacts from either action alternative would include habitat fragmentation, alteration, loss, and displacement due to surface disturbance, noise, ground vibration, night lighting, and increased risk of vehicle mortality associated with coal-haul trucks.”).

<sup>159</sup> Bureau of Land Management, Wright Area FEIS, at ES-52.

The PEIS must also examine the impacts the federal coal leasing program has on wildlife in the context of climate change, which exacerbates many of the stressors on wildlife that coal mining directly causes. Climate change poses a direct threat to wildlife and communities. If carbon pollution continues unabated, scientists predict that higher temperatures will lead to the extinction of 50% of species around the globe.<sup>160</sup> With a warming world come habitat shifts, and many wildlife species are finding themselves without suitable habitat to occupy. The latest National Climate Assessment report shows that wildlife and communities are already feeling the impacts of climate with rising seas, heavier precipitation, changes in growing seasons, fewer cold snaps, decreased snow pack, increased incidence of pests, devastating wildfires and droughts, and other significant impacts.<sup>161</sup> Plant and animal species are shifting their entire ranges in search of colder locales, in many cases two-to-three-times faster than scientists anticipated.<sup>162</sup> Due to irreversible changes, cold-water fish such as trout are already disappearing from streams, big game populations such as moose are being pushed out of their historic range, and certain wetland habitats are vanishing.<sup>163</sup> In the Western United States, climate change-related stresses, including severe droughts, have driven mule deer population declines.<sup>164</sup> Vulnerability of these and other large ungulates are expected to increase as “human development causes additional impacts to wildlife habitat” and “these populations are forced to exist on less habitat or lower quality habitat [than] has existed in the past.”<sup>165</sup>

Of course, the impacts of climate change are not limited to wildlife in the interior West. Among other problems facing coastal areas, rising sea levels increase salinity intrusion into freshwater ecosystems, such as the Everglades, which provide important habitat for birds, fish, and other wildlife. Freshwater wetlands that offer important foraging habitat for wading birds

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<sup>160</sup> International Panel on Climate Change, 4th Assessment Report, available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf) (last visited July 28, 2016)

<sup>161</sup> See National Climate Assessment and Development Advisory Committee, CLIMATE CHANGE IMPACTS IN THE UNITED STATES at 7.

<sup>162</sup> National Wildlife Federation, Wildlife in a Warming World (2013), available at [http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF\\_Wildlife-Warming-World\\_Report\\_web.ashx](http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF_Wildlife-Warming-World_Report_web.ashx) (last visited July 27, 2016).

<sup>163</sup> Lisa Eby, et al., Evidence of Climate-Induced Range Contractions in Bull Trout *Salvelinus confluentus* in a Rocky Mountain Watershed U.S.A., PLOS ONE (2014), available at <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0098812> (last visited July 28, 2016).

<sup>164</sup> Clay Schwartz, Studies, states seek to halt mule deer population decline, BILLINGS GAZETTE, October 17, 2013 available at [http://billingsgazette.com/lifestyles/recreation/studies-states-seek-to-halt-mule-deer-population-decline/article\\_e6a17e99-01dd-50ed-9edb-f39c976d9db3.html](http://billingsgazette.com/lifestyles/recreation/studies-states-seek-to-halt-mule-deer-population-decline/article_e6a17e99-01dd-50ed-9edb-f39c976d9db3.html) (last visited July 28, 2016); Ellenberger and Byrne (2015) (Exhibit ) at 3.

<sup>165</sup> Ellenberger and Byrne (2015) (Ex. 20) at 3.

and other wildlife may decrease.<sup>166</sup> In the Chugach National Forest in Alaska, Forest Service researchers predict that “changes in climate could result in salmon that are smaller and face more threats to their survival, according to Forest Service researchers. These projected climate change impacts may affect various users, including residents in the region who rely on snow-based tourism and salmon for their livelihoods and Alaska Native residents in the region who rely on forest resources for subsistence hunting, fishing, trapping, and gathering.”<sup>167</sup>

Accordingly, all of the direct consequences to wildlife of mining federal coal—including habitat loss, displacement, and restrictions on movement, among others—will be worsened as a result of climate change.

In light of the direct devastation coal mining has on lands, water, and wildlife near mined areas, and the indirect but equally destructive impacts to these resources due to greenhouse gas emissions from burning federal coal, the PEIS must examine whether federal coal leasing may be accomplished in a manner consistent with BLM’s mandate to protect these resources for future generations.

**C. The PEIS Should Evaluate the Impacts of Mining and Burning Federal Coal on Downstream Communities, Including the Environmental Justice Impacts Associated with Each Considered Alternative**

BLM’s Notice of Intent states that “[w]ith respect to the climate impacts of the Federal coal program, the Programmatic EIS will examine how best to measure and assess the climate impacts of continued Federal coal production, transportation, and combustion.”<sup>168</sup> We applaud this commitment. But the PEIS must go further: it must also analyze and disclose the non-carbon environmental, health, and economic impacts of coal production, transport, and combustion.

NEPA requires federal agencies to consider “any adverse environmental effects of their major actions.” 42 U.S.C. § 4332(2)(C). This consideration extends to both direct and indirect impacts. 40 C.F.R. § 1508.8. Indirect impacts are reasonably foreseeable impacts that are caused by the project but that occur later in time or at a greater distance. *Id.* A “reasonably foreseeable impact” is one that is “sufficiently likely to occur that a person of ordinary prudence would take into account in reaching a decision.” *Mid States Coal. for Progress*, 345 F.3d at 549 (citing *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)). Even if complete information is lacking on the extent of the foreseeable impact, “the agency may not simply ignore the effect.”

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<sup>166</sup> Leonard G. Pearlstine, Elise V. Pearlstine, & Nicholas G. Aumen, *A Review of the Ecological Consequences and Management Implications of Climate Change for the Everglade*, 29-4 *JOURNAL OF THE NORTH AMERICAN BENTHOLOGICAL SOCIETY*, 1510, 1513 (2010); E. Stabenau, J. Sadle, & L. Pearlstine, *Sea-level Rise: Observations, impacts, and proactive measures in Everglades National Park*, 28 *PARK SCIENCE*, 26-30 (2011).

<sup>167</sup> Government Accountability Office, *Climate Change*, at 27.

<sup>168</sup> 81 Fed. Reg. at 17,725.



Id. If the nature of the effect is reasonably foreseeable, this effect must be addressed in the PEIS.  
Id.

Given the scope and scale of the federal leasing program, it is undeniable that it has significant, adverse effects on water quality and access, air quality, health and climate. The activities directly and indirectly associated with coal leasing include, among other things, coal transport by rail, truck and sea, construction and operation of infrastructure and equipment related to storing, shipping and processing coal, coal combustion domestically and overseas, and disposal of coal ash. Each of these “downstream” activities negatively impacts downstream communities, harming their health, threatening their safety and causing significant nuisance.

More specifically, the federal coal program’s downstream activities generate coal dust and other air emissions, reduce water access and worsen water quality, increase accident and hazard risk, induce growth that magnifies these affects, and hasten impacts from climate disruption, such as sea level rise. These impacts are particularly pernicious because many downstream communities, and low income communities and communities of color in particular, are already disproportionately impacted by pollution and hazards. Communities situated within two miles of rail lines,<sup>169</sup> in cities next to ports, those near coal terminals and plants, and communities that depend upon clean and accessible water for their livelihoods are most vulnerable. Since NEPA requires analysis of all foreseeable direct, indirect and cumulative impacts, the PEIS must analyze impacts to downstream communities.

1. The PEIS Should Examine Significant Non-climate Impacts Associated With Coal Mining, Transport, and Combustion.

BLM’s scoping notice acknowledges that “[t]he Federal coal program has other potential impacts on public health and the environment, beyond climate impacts, that will also be assessed in the Programmatic EIS.”<sup>170</sup> However, the notice states that the EIS’s analysis will “include the effects of coal production” without explicitly addressing the impacts of coal transport and combustion.<sup>171</sup> The scoping notice also commits to a broad analysis of the federal coal program’s socioeconomic impacts.<sup>172</sup> Because NEPA requires agencies to evaluate the direct, indirect and cumulative impacts of a proposed action, and coal combustion is a foreseeable result

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<sup>169</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 19.

<sup>170</sup> 81 Fed. Reg. at 17,725-26.

<sup>171</sup> Id. at 17,726 (emphasis added)

<sup>172</sup> Id.

of coal mining on federal lands, the PEIS must disclose the non-carbon environmental and socio-economic impacts of coal combustion.<sup>173</sup>

It is particularly crucial that the PEIS address these impacts because they are likely significant. The damage that mining, transportation, and especially combustion of federally owned coal causes to life expectancy and health may be much larger than the current estimates and are tied to greenhouse gas emissions. In June 2016, a White House Council of Economic Advisors report on the economic impacts of the federal coal leasing program explicitly recognized that significant health-based costs are associated with the continued mining and burning of federal coal.<sup>174</sup> Specifically:

On the production side, coal mining involves emissions of methane, which is a potent greenhouse gas. Coal extraction and processing also may lead to external costs from water pollution and land degradation. Transportation of coal is often energy and emissions intensive. Coal combustion releases carbon dioxide, mercury, and other harmful air pollutants. Impoundments and coal combustion waste can also lead to severe water pollution.<sup>175</sup>

All of these social and environmental costs must be disclosed in the PEIS.

Numerous environmental reviews from the past several years support the White House Report findings concerning harms from the non-carbon emissions of coal-fired electric generators: sulfur and nitrogen oxides, particulate matter, volatile organic compounds, ammonia, and mercury. These environmental reviews reveal damage from coal burning to health,

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<sup>173</sup> In addition, this letter speaks at length about the need to analyze the impacts of the federal coal program's climate-related impacts. The program drives the continued production of coal and reliance on coal for energy generation, frustrating state, national, and international climate goals. In addition the federal coal program perpetuates and increases exposure by downstream communities to climate disruption. While this section focuses on non-climate impacts, the downstream climate impacts due to the federal coal program also should be analyzed in the PEIS.

<sup>174</sup> White House Fair Return Report, at 28

<sup>175</sup> Id.

longevity, quality of life, and property.<sup>176</sup> As discussed below, these are all environmental and health impacts that NEPA mandates that the PEIS address.

2. The PEIS must analyze downstream impacts of coal dust.

Coal dust emissions can significantly impact the health of downstream communities and workers, and damage our environment. The PEIS should analyze both coal dust emissions impacts from railcars and fugitive emissions.

Coal dust is generated by coal-carrying rail cars during transit and as a fugitive emission from coal storage piles, and loading and unloading activities.<sup>177</sup> Rail lines parallel waterways where rail cars emit coal dust, transporting it to nearby communities and farms. Coal trains emit coal dust from the top and bottom of the rail cars throughout the trip. An average rail car loses 645 lbs during a 400 mile trip.<sup>178</sup> BNSF estimates that 500 to 2000 lbs of coal dust can be emitted from each train car per trip.<sup>179</sup> Surfactants are sometimes sprayed over the coal to control dust. However, surfactants wear off during the trip and require tremendous quantities of water to apply. Coal dust can impact port communities and workers because of higher emissions associated with containment within a smaller area and the types of locomotives used within port facilities.<sup>180</sup> Currently, no federal regulations protect communities from coal dust exposure.

Coal dust consists mainly of granules and fine black particles that increase both PM10 and PM 2.5 in the ambient air. Most acutely, coal dust causes wheezing, excess cough and other

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<sup>176</sup> Power Consulting, Inc., *The Economic Consequences of the Federal Coal Leasing Program: Improving the Quality of the Economic Analysis* (July 27, 2016) at 49, attached as Ex. 1, citing, *inter alia*, National Research Council, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*, Committee on Health, Environmental, and Other External Costs and Benefits of Energy Production and Consumption (2010), available at <http://nap.edu/12794> (last visited July 27, 2016), attached as Ex. 32; Paul R. Epstein, et al., *Full cost accounting for the life cycle of coal*, in *“Ecological Economics Review, ANNALS OF THE NEW YORK ACADEMY OF SCIENCES*, 1219 (2011): 73-98, available at [http://www.chgeharvard.org/sites/default/files/epstein\\_full%20cost%20of%20coal.pdf](http://www.chgeharvard.org/sites/default/files/epstein_full%20cost%20of%20coal.pdf) (last visited July 27, 2016), attached as Ex. 33; Nicholas A. Muller et al., *Environmental Accounting for Pollution in the United States Economy*. *AMERICAN ECONOMIC REVIEW* 101 (August 2011): 1649-1675, available at <http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.101.5.1649> (last visited July 27, 2016), attached as Ex. 34.

<sup>177</sup> Comments of Phyllis Fox, *Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal*, September 21, 2015, at 13, attached as Ex. 35.

<sup>178</sup> Comments of Phyllis Fox, *Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal*, September 21, 2015, at 2 (Ex. 35).

<sup>179</sup> Sustainable Systems Research, LLC, *“Technical Memorandum Air Quality, Climate Change, and Environmental Justice Issues from Oakland Trade and Global Logistics Center*, September 18, 2015, at 6, attached as Ex. 36.

<sup>180</sup> Id.

respiratory symptoms.<sup>181</sup> Longer term exposure can lead to skin damage, circulatory problems, and increased risk of developing cancer. Coal dust also increases accident risk because coal dust from trains destabilizes the track ballast—the surface that bears the load of the railroad ties. Coal dust contaminates soil, coats crops, yards, homes and vehicles raising health concerns and causing nuisance.<sup>182</sup> Fugitive coal dust can impair lung function, and cause or contribute to cardiovascular disease and developmental disorders.

Covered rail cars would appear to reduce coal dust emissions, so the PEIS should also explore the impacts of covered rail cars. To our knowledge, at this time, no covered coal trains are in use in the U.S. and we know of no published study of the efficacy for coal trains. Covered cars would still emit coal dust from the bottom of the train, which constitutes 7 percent of the total coal dust.<sup>183</sup> And if the cars included venting units, the coal dust would additionally vent from the top of the car. Covered rail cars also pose an additional rail accident risk; coal is highly combustible, and coal trapping heat limited space could facilitate spontaneous combustion.<sup>184</sup>

In addition to analyzing the impacts of coal dust emissions from uncovered cars, the PEIS should analyze and disclose emissions from empty coal trains. One recent Australian study found that empty coal trains emit more particulate pollution than loaded ones.<sup>185</sup>

Controlling coal dust requires millions of gallons of water per year. Water is needed during rail car loading, at storage piles within enclosures, at drop points, and during ship loading.<sup>186</sup> About 8 gallons of water are required for each ton of coal throughput to control dust.<sup>187</sup> Given that coal travels through states that are experiencing drought, the PEIS should analyze the impacts of coal leasing in this context.

The PEIS should also consider the cumulative impacts of coal dust given the impacts already faced by communities located near rail lines and ports where the trains are carried. Cumulative impacts are the related past, present, and reasonably foreseeable future projects.

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<sup>181</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 16 (Ex. 35).

<sup>182</sup> Paul R. Epstein et al, Full Cost of Accounting for the Life Cycle of Coal, ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, v. 1219, 2011, at 84 (Ex. 33).

<sup>183</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 17 (Ex. 35).

<sup>184</sup> Id. at 18.

<sup>185</sup> Nick Higgenbotham et al, Coal Train Pollution Signature Study: A briefing paper prepared for the For the Coal Terminal Action Group Dust and Health Committee, August 2013, attached as Ex. 37.

<sup>186</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 2 (Ex. 35).

<sup>187</sup> Id. at 7.

Given that ports and other areas impacted by coal dust are located in low-income communities and communities of color, the PEIS must analyze these impacts.<sup>188</sup>

3. The PEIS must consider all air pollutant impacts from coal transport on downstream communities.

Coal transport by rail also causes significant air quality and health impacts through coal train exhaust, which includes diesel particulate matter (DPM), and criteria pollutants including NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and CO. Trains emit these pollutants while in motion and idling.<sup>189</sup> Communities and workers in close proximity to rail tracks, coal terminals, and shipping lanes are at highest risk for DPM exposure. DPM is associated with “acute short term symptoms such as headache, dizziness, light headedness, nausea, coughing, difficulty breathing, tightness of chest, and irritation of eyes, nose and throat. Long-term exposure can result in increased probability of heart attacks, lung cancer, worsening of asthma, and infant mortality.”<sup>190</sup> Health risk assessments of rail terminals and ports have found significant cancer risks associated with DPM up to two miles from coal terminals.<sup>191</sup> The PEIS should quantify health impacts along the entire coal transportation corridor.

In addition, the PEIS should analyze air emissions from coal export facilities and shipping activities. For instance, air modeling for a proposed state of the art covered coal export facility at the Port of Morrow in Oregon showed major exceedances of particulate matter and NAAQs for NO<sub>x</sub>.<sup>192</sup> Storing coal in communities also generates large amounts of PM.<sup>193</sup> It is also well known that coal export can increase acid rain and mercury deposition in the Pacific Ocean and Western US from Asia.<sup>194</sup> These impacts should also be analyzed.

In evaluating the significance of air quality impacts due to coal storage and transportation, the analysis should not base its conclusions solely on National Ambient Air Quality Standards (“NAAQS”) because harms may occur at pollutant concentrations below the NAAQS standards. For example, epidemiological studies have shown associations between SO<sub>2</sub>

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<sup>188</sup> Pastor, Manuel Jr., et al., Waiting to Inhale? The Demographics of Toxic Air Release Facilities in 21st Century California, 85 SOCIAL SCIENCE QUARTERLY, no. 2, June, 2004.

<sup>189</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 19 (Ex. 35).

<sup>190</sup> Id.

<sup>191</sup> Id.

<sup>192</sup> See, e.g., AMI International, AIR QUALITY MODELING FOR THE PROPOSED ENCLOSED COAL EXPORT FACILITY AT THE PORT OF MORROW (2012), [http://media.oregonlive.com/environment\\_impact/other/AERMOD\\_Modeling\\_Morrow\\_vfin.pdf](http://media.oregonlive.com/environment_impact/other/AERMOD_Modeling_Morrow_vfin.pdf) (last visited July 28, 2016), attached as Ex. 38.

<sup>193</sup> See id.

<sup>194</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 7 (Ex. 35).

concentrations and emergency room visits and hospital admissions down to the 50 ppb level even though the NAAQS for SO<sub>2</sub> is 85 ppb.<sup>195</sup> Moreover, NAAQS does not account for the fact that some pollutants have higher localized impacts—pollutants like SO<sub>2</sub> concentrate locally. The PEIS should analyze the significance of the health impacts of the program associated with air emissions on downstream communities.

4. The PEIS should analyze the safety and economic impacts of traffic for downstream communities.

The PEIS should analyze the impact that coal trains cause at rail grade crossings. Coal trains are frequently 120 cars long.<sup>196</sup> Consequently, these coal trains adversely impact traffic at grade crossings.<sup>197</sup> They can create traffic jams during rush hour and hours of delay after spills or rail accidents. Coal trains also cause traffic jams with other freight trains. A 2014 study showed that congestion from coal and oil trains is already displacing and harming other economic sectors.<sup>198</sup> These economic impacts should be analyzed. Most significantly, coal trains can delay emergency vehicles, such as ambulances and fire trucks.<sup>199</sup> The PEIS must consider the frequency and magnitude of these impacts on communities.

5. The PEIS should analyze impacts to communities from train noise and vibration.

Noise from trains and their vibration is a serious issue for those residing near train tracks. In addition to general affects to quality of life, chronic noise exposure can affect health effects including cardiovascular disease, cognitive impairment in children, sleep disturbance (which has many secondary effects) fatigue, hypertension, arrhythmia, increased rate of accidents and

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<sup>195</sup> 75 Fed Reg. 35,547.

<sup>196</sup> See Polly Wood, Another Voice: Coal Transport Comments Needed Now, HOOD RIVER NEWS, Friday, January 11, 2013, available at <http://www.hoodrivernews.com/news/2013/jan/11/another-voice-coal-transport-comments-needed-now/> (last visited July 28, 2016); see also Hearing Transcript, July 29, 2010, Ar. Elec. Coop. Ass'n – Petition for Declaratory Order, Surface Transportation Board, Docket No. FD 35305, at 42:5 13.

<sup>197</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 18 (Ex. 35); see also Scott Gutierrez, The bane of all drivers in Seattle's SODO neighborhood: train crossings, SEATTLE PI, May 21, 2011, available at <http://www.seattlepi.com/local/transportation/article/Getting-There-How-long-can-trains-legally-block-1403713.php> (last visited July 28, 2016).

<sup>198</sup> Western Organization of Resource Councils, HEAVY TRAFFIC STILL AHEAD (2014), available at <http://heavytrafficahead.org/pdf/Heavy-Traffic-Still-Ahead-web.pdf> (last visited July 28, 2016).

<sup>199</sup> Comments of Phyllis Fox, Environmental Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, September 21, 2015, at 19 (Ex. 35).

injuries, exacerbation of mental health disorders, depression, stress and anxiety, and psychosis.<sup>200</sup> Federal rules require that engineers of all trains sound horns for at least 10-15 seconds at 96-110 decibels at all public crossings. At the lowest range, this is “very loud” and at the highest it is dangerous. Consequently, the PEIS should analyze the number of crossings within urban areas that coal trains pass through and the program’s cumulative impacts of noise on communities.

6. The PEIS should analyze the impact of accidents caused by federal coal transport and storage.

The PEIS should include a meaningful analysis of the potential safety, human and environmental risks of rail accidents, both those involving, and those proximately caused by, coal trains.

Rail accidents can release coal into the surface waters and water supply causing significant impacts. Moreover, coal is very difficult to clean up.<sup>201</sup> This affects downstream communities as coal released into water supply can degrade agricultural communities and municipal water supplies in addition to harming fish and other aquatic life.

The blast zone for coal trains is within one mile of the train tracks. These explosions disproportionately impact low income communities and communities of color—because these often are the communities that live near railroad tracks.<sup>202</sup> This impact should be analyzed as an indirect and cumulative impact, especially in light of other hazards these communities are exposed to.<sup>203</sup>

Coal trains, which weigh far more than other types of trains, also deposit coal dust on the tracks and in the track ballast. The additional stress on the tracks increases the probability of accidents.<sup>204</sup> Coal dust is highly combustible and causes risks from explosions and fire. The federal Surface Transportation Board has concluded that coal dust can impair track stability and lead to train derailment.<sup>205</sup> Consequently, coal trains are a proximate cause of rail accidents.<sup>206</sup>

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<sup>200</sup> Id. at 20.

<sup>201</sup> Id. at 9.

<sup>202</sup> “Crude Injustice on the Rails,” Communities for a Better Environment and Forest Ethics, (June 2015) at 3 (80 percent of the 5.5 million Californians with homes in the blast zone live in low income communities and communities of color).

<sup>203</sup> Id. at 11.

<sup>204</sup> Id. at 10.

<sup>205</sup> Surface Transportation Board Decision, Arkansas Electric Cooperative Corporation – Decision on Petition for Declaratory Order, Docket No. FD 35305 (Mar. 3, 2011); available at [http://stb.dot.gov/Decisions/readingroom.nsf/UNID/79B5382AE20F7930852578480053111F/\\$file/40436.pdf](http://stb.dot.gov/Decisions/readingroom.nsf/UNID/79B5382AE20F7930852578480053111F/$file/40436.pdf) (last visited July 28, 2016).

Spills are not uncommon during bunkering (or fueling), and spills into environmentally sensitive waters. The PEIS should evaluate this spill risk for both offshore bunkering—throughout the route—and onshore at port.

7. The PEIS should analyze induced growth and infrastructure.

The coal market is deteriorating, yet in the past several years we have seen numerous proposed projects to construct new coal terminals and other infrastructure. The PEIS should analyze the impacts of increased infrastructure based on proposed and reasonably foreseeable projects catalyzed by the federal coal leasing program. See Mid States Coal. for Progress, 345 F.3d at 549 (emphasizing the need, particularly for large projects, to examine the impacts that may occur as result of reasonably foreseeable effects of the action, including induced infrastructure build-out, and increased demand and use). These projects have the greatest impact on downstream communities. The purpose of a PEIS is to fully understand these impacts before deciding to maintain the program that causes them.

8. The PEIS must analyze environmental justice impacts.

The PEIS must address the environmental justice implications the federal coal program, particularly with regard to climate impacts. Minority and low-income communities bear a disproportionate risk of suffering adverse effects of climate disruption. According to EPA, “[C]limate change is an environmental justice issue. Low-income communities and communities of color already overburdened with pollution are likely to be disproportionately affected by, and less resilient to, the impacts of climate change.”<sup>207</sup> In addition, low-income communities and communities of color face multiple vulnerabilities due to threats to health, housing, healthy food, transportation, jobs, safety, and clean energy, among other things,<sup>208</sup> all of which the mining and burning of federal coal exacerbates.

EPA cites the Intergovernmental Panel on Climate Change’s (“IPCC’s”) Fifth Assessment Report, which concludes that climate disruption will hit low-income neighborhoods and people of color the hardest. According to the IPCC, “[m]any key risks constitute particular challenges for the least developed countries and vulnerable communities, given their limited ability to cope.”<sup>209</sup> These disproportionate risks relate to economic impacts and effects on

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<sup>206</sup> A recent draft EIS evaluating the impact of Millennium Bulk Terminals Longview in Washington State acknowledged that the coal project would increase the number of rail accidents by 22% statewide.

<sup>207</sup> Clean Power Plan, 80 Fed. Reg. 64,662, 64,914 (Oct. 23, 2015).

<sup>208</sup> National Association for the Advancement of Colored People, EQUITY IN BUILDING RESILIENCE IN ADAPTATION PLANNING at 2 available at [http://action.naacp.org/page/-/Climate/Equity\\_in\\_Resilience\\_Building\\_Climate\\_Adaptation\\_Indicators\\_FINAL.pdf](http://action.naacp.org/page/-/Climate/Equity_in_Resilience_Building_Climate_Adaptation_Indicators_FINAL.pdf) (last visited July 28, 2016), attached as Ex. 39.

<sup>209</sup> Intergovernmental Panel on Climate Change, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY: SUMMARY FOR POLICYMAKERS (2014), at 13.



human health. In the United States, researchers have found that African-Americans and Latinos are also more likely to reside in areas vulnerable to climate change impacts such as sea-level rise, flood risk, and wildfire risk, and that median household incomes are inversely related to these vulnerability risks.<sup>210</sup>

This is not a recently reached conclusion. EPA’s supporting documents in its 2009 Endangerment Finding summarized major assessment reports by the U.S. Global Change Research Program (USGCRP), the IPCC, and the National Research Council (NRC) of the National Academies, which found that that poor communities can be especially vulnerable to climate change impacts.<sup>211</sup>

According to EPA, recent studies reaffirm these conclusions. These studies, cited extensively in supporting documentation for EPA’s Clean Power Plan, “find that certain climate change related impacts—including heat waves, degraded air quality, and extreme weather events—have disproportionate effects on low-income populations and some communities of color, raising environmental justice concerns.”<sup>212</sup> Additionally, EPA concluded that climate disruption poses particular threats to health, well-being, and ways of life of indigenous peoples in the U.S.

As part of the PEIS process, DOI must, at a minimum, acknowledge the body of well-established research, endorsed by EPA, which concludes that “low income populations and some communities of color are especially vulnerable to the health and other adverse impacts of climate change.”<sup>213</sup> In addition to fully disclosing the climate impacts of its federal coal leasing program, DOI must disclose the likelihood that the impacts of any decision to continue leasing and burning taxpayer-owned coal will fall disproportionately on low-income communities and communities of color.

#### **D. The PEIS Should Evaluate the Economic Consequences of Federal Coal Leasing**

##### **1. The PEIS Should Examine Significant Non-climate Costs Associated with the Federal Coal Leasing Program.**

Consistent with BLM’s commitment in its scoping notice to conduct a broad analysis of the federal coal program’s socioeconomic impacts,<sup>214</sup> the PEIS must examine the non-carbon

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<sup>210</sup> English et al., Racial and Income Disparities in Relation to a Proposed Climate Change Vulnerability Screening Method for California, 4-2 THE INTERNATIONAL JOURNAL OF CLIMATE CHANGE: IMPACTS AND RESPONSES (Apr. 2013) at 1-18.

<sup>211</sup> Clean Power Plan, 80 Fed. Reg. 64,662, 64,940 (Oct. 23, 2015).

<sup>212</sup> Id.

<sup>213</sup> Id.

<sup>214</sup> Notice of Intent, 81 Fed. Reg. at 17,726.

environmental, health, and economic impacts of coal mining, transport, and combustion that are direct, indirect and cumulative impacts of federal coal leasing.

As discussed above, the June 2016 report of the White House Council of Economic Advisors acknowledged significant health-based costs associated with the continued mining and burning of federal coal.<sup>215</sup> Numerous reviews in the past several years support the findings of the White House Report in its analysis of harms from the non-carbon emissions from coal-fired electric generators: sulfur and nitrogen oxides, particulate matter, volatile organic compounds, ammonia, and mercury. These reviews show damage to longevity, health, quality of life, and property.<sup>216</sup> In addition to examining the harm that coal production, transport, and combustion cause to the environment and public health, the PEIS should calculate the economic impacts of this harm. Specifically, the PEIS should estimate the economic damage of costs associated with increased human mortality, increased human illness (morbidity), reductions in the productivity of forests, farms, and ranches, the accelerated deterioration of structures and equipment, and declines in quality of life due to reduced visibility and degraded recreation opportunities – all foreseeable impacts from coal production, transport, and combustion. The PEIS must address these environmental and socio-economic harms.

2. The PEIS Must Objectively Evaluate the Socio-economic Impacts of the Federal Coal Program on Coal Mining Communities.

The PEIS must take a hard look at the socio-economic impacts of federal coal leasing on local communities where mines are located. In doing so, the PEIS must disclose both the benefits and the damage that coal mining can cause. 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.

a. The PEIS 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 and misleading, and cannot be used to guide public decision making.

Recent empirical economic studies on the relationship between coal mining and local economic vitality and well-being paint contradict the rosy picture of coal mining's socio-economic impacts. For example, historical evidence shows that: coal and other metal mining

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<sup>215</sup> White House Fair Return Report, at 28

<sup>216</sup> Power Consulting, Inc., The Economic Consequences of the Federal Coal Leasing Program: Improving the Quality of the Economic Analysis (July 27, 2016) at 49 (Ex. 1).

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. The attached report by Power Consulting, Inc. et al. describes in detail studies supporting these conclusions.<sup>217</sup> The PEIS must take this evidence into account in preparing its socio-economic analysis.

b. The PEIS Must Carefully Identify the Scale at Which it Analyzes Socio-economic Impacts.

To take the “hard look” at the federal coal program’s socio-economic benefits, which NEPA requires, the PEIS must analyze the area where those impacts are likely to be most significant and measureable: 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 effect local communities, as the impacts from coal mining will be overwhelmed by other sectors of the economy. For this reason, the Powers Consulting report recommends focusing the analysis on the 51 rural counties where coal mining provided more than 5% of the employment in 1990.<sup>218</sup> The data Powers 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.”<sup>219</sup> This is the type of information that should inform the PEIS’s analysis as the Interior Department attempts to understand how the federal coal program impacts local mining economies.

**E. The PEIS Should Evaluate Unmet Reclamation Obligations**

The PEIS also must examine the impacts of federal coal leasing in light of the coal industry’s general 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. Pursuant to SMCRA, most states have primary coal-mine permitting authority under state regulatory programs that satisfy those minimum standards.

One key component of an application for a permit to mine is the “reclamation plan.” Id. § 1258. SMCRA requires the operator to restore the affected land to a condition capable of supporting the uses it could support before mining, or to “higher or better uses.” Id. § 1265(b)(2). The operator must also: restore the approximate original contour of the land by backfilling, grading, and compacting; minimize disturbances to the hydrologic system by avoiding acid mine drainage and preventing additional contributions of suspended solids to nearby streams and other water bodies; “insure that all reclamation efforts proceed in an

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<sup>217</sup> Id. at 8-13.

<sup>218</sup> See id. at 13-18.

<sup>219</sup> Id. at 18.

environmentally sound manner and as contemporaneously as practicable with the surface coal mining operations;” and establish a permanent vegetative cover in the affected area. Id. § 1265(b).

In addition, “after a surface coal mining and reclamation permit application has been approved but before such a permit is issued,” the operator must furnish a bond for the area of land on which mining will occur during the five-year permit term. Id. § 1259(a). “The amount of the bond required for each bonded area shall depend upon the reclamation requirements of the approved permit; shall reflect the probable difficulty of reclamation giving consideration to such factors as topography, geology of the site, hydrology, and revegetation potential, and shall be determined by the regulatory authority.” Id. The Secretary of the Interior may approve state programs that authorize “self-bonding” where “the applicant demonstrates to the satisfaction of the regulatory authority ... a history of financial solvency and continuous operation sufficient for authorization to self-insure or bond such amount or in lieu of the establishment of a bonding program.” Id. § 1259(c). Eighteen states currently allow self-bonding.<sup>220</sup>

Coal-mine operators almost universally fail to meet SMCRA’s reclamation standards, and increasingly fall short of their bonding obligations. 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.<sup>221</sup> Of 287,442 acres of disturbed land in Montana, North Dakota and Wyoming, only 29,673 acres have achieved Phase III bond release, demonstrating successful establishment of vegetation and soils to satisfy permit requirements for post mining land uses.<sup>222</sup> 257,769 acres—or more than 400 square miles—remain unreclaimed by federal standards. In addition, reclamation that is accomplished often is inadequate to restore pre-mining conditions, particularly hydrologic and habitat conditions. “Mining 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.”<sup>223</sup>

While reclamation of mined land historically has been inadequate, the problem is exacerbated by the dismal state of current coal markets and financial insolvency of coal producers. According to the most recent data reported by the States, outstanding self-bond obligations total approximately \$3.86 billion. Of that total, \$2.4 billion is held by coal companies currently or recently in bankruptcy.<sup>224</sup> As OSMRE observed, this raises “a concern about whether disturbed coal mines will be reclaimed by the bankrupt companies; whether the

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<sup>220</sup> Office of Surface Mining Reclamation and Enforcement, Notice of availability of petition to initiate rulemaking and request for comments on the petition, 81 Fed. Reg. 31,880 (May 20, 2016).

<sup>221</sup> National Wildlife Federation et al., UNDERMINED PROMISE II (June 2015), attached as Ex.40.

<sup>222</sup> UNDERMINED PROMISE, at 7

<sup>223</sup> Id. at 25.

<sup>224</sup> Office of Surface Mining Reclamation and Enforcement, Notice of availability, 81 Fed. Reg. at 31,880.

bankrupt companies will abandon their legal obligations to restore impacted lands and waters; whether the costs to restore the land and water will be shifted to taxpayers; and, whether the existing regulations are adequate to protect people, communities, and the environment as envisioned by Congress when it enacted SMCRA.”<sup>225</sup> Further, because coal companies have been allowed to self-bond so many acres of disturbed land, they have acquired significant leverage over state regulators desperate to avoid permit forfeitures and the associated transfer of reclamation liability to the state.

BLM echoed these concerns in the NOI, observing that given the state of the coal market, many stakeholders have expressed concern over the practice of “self-bonding” and noted that the combination of depressed market conditions and reluctant enforcement of existing regulations threaten to put states and taxpayers on the hook for coal companies’ unfunded reclamation obligations.<sup>226</sup> In response, BLM specifically sought input as part of the PEIS process on whether it should “[p]rohibit or otherwise limit leasing to entities that are not meeting their environmental responsibilities, such as ... Entities that have not met their reclamation or bonding (including bond release) requirements.”<sup>227</sup>

Consistent with BLM’s NEPA obligation to take a hard look at the economic and environmental consequences of its proposals, BLM must acknowledge the current state of the market—and the hundreds of millions of dollars of under-funded “self-bonds” held by companies currently in bankruptcy—and explain how BLM’s proposals could impact the economic effects of its considered alternatives, particularly the risks to taxpayers and states of continued reliance on self-bonding practices for coal mines situated on federal lands. Further, the PEIS must examine the environmental impacts of mining federal coal in light of the coal industry’s overall failure to meet SMCRA’s reclamation standards—a situation that is worsened by the proliferation of self-bonding and financial instability of the coal industry.

The Secretary of Interior should take action to prohibit financially vulnerable companies from utilizing “self-bonds,” including those that emerge from the recent spate of coal company bankruptcies. In the short term, however, OSMRE need not tie its action to the federal coal leasing PEIS process. On July 20, 2016, Sierra Club, Earthjustice, and nine other organizations submitted extensive comments to OSMRE in response to a call for public comments on a petition to initiate changes to existing self-bonding regulations.<sup>228</sup> Additionally, Sierra Club and more than thirty other organizations submitted similar comments on the same rulemaking on July 14, 2016.<sup>229</sup> As explained in those comments, extensive reliance on self-bonding puts taxpayers in an unnecessary and dangerous position. OSMRE should step in to correct this situation by

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<sup>225</sup> Id. at 31,881.

<sup>226</sup> Notice of Intent, 81 Fed. Reg. 17,724.

<sup>227</sup> Id. at 17,727.

<sup>228</sup> Letter from Sierra Club et. al to Office of Surface Mining Reclamation and Enforcement (July 20, 2016), attached as Ex. 41.

<sup>229</sup> Letter from Powder River Basin Resource Council et. al to Office of Surface Mining Reclamation and Enforcement (July 14, 2016), attached as Ex. 42.

taking immediate action under the existing regulations to transition self-bonded mine operators towards surety bonds or other financial instruments held by third parties.

The federal SMCRA statute authorizes self-bonds, but only where the regulator determines that there is “a history of financial solvency and continuous operation sufficient for authorization to self-insure or bond such amount.” 30 U.S.C. § 1259(c). The statute’s emphasis on the regulator’s discretion means that self-bonding may be authorized, but it is not mandatory. Furthermore, self-bonding should be available only in limited circumstances. The federal bonding regulations underscore this point by emphasizing that a “regulatory authority may accept a self-bond from an applicant for a permit if all of the [specified] conditions are met by the applicant or its parent corporation guarantor.” 30 C.F.R. § 800.23 (emphasis added). Like the enabling statute, the regulations are clear that even where a mine operator or its guarantor satisfies all of the enumerated financial conditions, the regulator nonetheless retains the discretion to deny an application for a new or renewed self-bond and require the use of a different form of bond.

SMCRA and its implementing regulations provide the regulatory authority with “case-by-case discretion to consider factors particular to a case which may indicate, for instance, that even though the applicant meets the general qualifications of the self-bonding rules, past behavior tending to undercut the soundness of the applicant, or other factors, may dictate refusal.” 48 Fed. Reg. at 36,420.

OSMRE should immediately release additional guidance to state regulators clarifying that due to the extremely high risk of insolvency within the coal mining industry at this time, self-bonding is not appropriate, even for companies that satisfy the 30 C.F.R. § 800.23(b)(3) criteria. In particular, OSMRE should emphasize that operators who have emerged from bankruptcy within the last five years are not eligible for self-bonding, even if they—or a separate guarantor—otherwise satisfy the specified criteria. Insolvency and bankruptcy represent precisely the sort of “past behavior” that OSMRE has determined should render an operator ineligible for self-bonding.

In the longer term, among other changes, OSMRE should revise its existing regulations to ensure that the financial fitness tests are strong enough to ensure that only truly sound companies qualify for the practice.<sup>230</sup> As explained in that letter, “recent history clearly demonstrates the financial fitness metrics in the current regulations do not properly ensure that only healthy, stable companies with low risk of bankruptcy can self-bond. The regulatory financial fitness tests should be thoroughly rewritten to ensure that self-bonded companies are financially sound enough to live up to their cleanup commitments.”<sup>231</sup>

While OSMRE is responsible for ensuring that coal companies meet their reclamation obligations under SMCRA, BLM must consider the implications of the coal industry’s enduring

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<sup>230</sup> Sierra Club et. al letter to Office of Surface Mining Reclamation and Enforcement at 5 (July 20, 2016) (Ex. 41).

<sup>231</sup> Id.

failure to satisfy those obligations—a failure likely exacerbated by the industry’s financial instability—in its analysis of the environmental consequences of the federal coal program.

**F. The EIS Must Analyze the Impacts of Federal Coal Exports and the Implications of Under-Valued Coal**

Federal coal leasing affects the environment at each stage of the coal lifecycle, from exploration, extraction, and transport, to processing and use. Coal export expands and intensifies this lifecycle. Exports can also effect coal price and increase coal consumption. 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). Consequently, the PEIS should analyze the impacts of allowing federal coal export, consider exports in its coal-price valuation, and, given the adverse impacts of coal exports, consider whether to lease federal land where the coal is likely bound for international markets.

1. BLM Should Analyze the Direct And Indirect Impacts of Exporting Federal Coal.

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, involves greater distances, requires expanded infrastructure (e.g., ports), and increases emissions due to often softened regulations overseas related to transport and combustion, compared to domestic emissions. The PEIS must analyze the direct, indirect and cumulative impacts from these activities.

At minimum, the PEIS should analyze the following:

Rail-related impacts: The cumulative and indirect 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: The PEIS should 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. Specifically, the PEIS must address the air quality impacts of all port operations at each of the US coal ports, including ship, locomotive, and truck emissions, water quality impacts (including wetland impacts), and fish and wildlife impacts, and impacts to human health and safety.

Exporting coal also increases vessel traffic. The PEIS should include an analysis of this impact. The PEIS should consider the impacts of foreseeable (proposed) export terminals as

well as analyze the potential for continued or expanded federal coal leasing to induce construction of new coal export terminals, particularly on the West Coast.

Shipping impacts: The PEIS should 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 EIS should 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 PEIS 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 PEIS 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.

The PEIS should analyze the impacts described above but should by no means be limited to these impacts. NEPA requires agencies to gather necessary information relevant to reasonably foreseeable impacts unless the cost of obtaining the data is exorbitant.<sup>232</sup> To this end, the agency must make every effort to analyze and assess these impacts.

2. BLM should consider exports in valuing/pricing leases and in deciding whether to issue leases intended for export.

Coal exports undermine our efforts both to reign in greenhouse gas emissions and to reduce pollution and hazards simply by extending and intensifying the coal lifecycle. Scenarios involving higher export volumes have correspondingly higher projected greenhouse gas emissions.<sup>233</sup> Offering cheap federal coal leases further frustrates efforts to realize national and international climate goals, degrades our shared environment and erodes our health; low coal prices can increase demand and with it, consumption.<sup>234</sup> The PEIS should analyze how exporting coal will influence demand, and hence coal consumption both in the U.S. and overseas.

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<sup>232</sup> See 40 C.F.R. § 1502.22(a).

<sup>233</sup> See Synapse Energy Economics, Analysis of the Tongue River Railroad Draft Environmental Impact Statement (Sept. 23, 2015), at 15-17, attached as Ex. 43.

<sup>234</sup> See *id.* at 3 (“a new source of coal that has a less expensive delivered price than some other coals currently being purchased should ‘shift the supply curve’ for coal”).



The coal leasing program also breathes life into a declining and damaging industry.<sup>235</sup> As one report summarizes, “Coal export is part of the last chance bailout strategy for an industry that is in a state of permanent, structural decline.”<sup>236</sup> Coal export prices to Asia, and the associated profits, have declined each year for the past five years.<sup>237</sup> Over the past four years, since 2012, the amount of coal producers have exported has dropped by half, from 125 million tons of coal to an estimated 72.3 million tons.<sup>238</sup> The market is suffering from oversupply.<sup>239</sup> In addition to oversupply, cheap leases can induce overbuild. Industry has proposed numerous West Coast export infrastructure projects over the past few years that would allow for a doubling or tripling of some states’ GHG emissions.<sup>240</sup>

At the same time, many of the nations that producers seek as export partners are transitioning away from coal. For instance, the Indian government, which currently imports coal, has announced a policy to reduce its imports to zero.<sup>241</sup> China has been reducing coal production over the past few years and has recently announced further steps to shrink its coal industry. These plans include closing 1,000 coal mines in 2016 alone, while transitioning as many as 1.8 million workers out of the coal and steel industries and into other fields.<sup>242</sup> It plans to convert to a greater share of natural gas.<sup>243</sup> And other nations in Asia have the capacity to shift from coal to natural gas.<sup>244</sup> These shifts are needed for the world to meet the GHG mandate to keep 80 percent of all fossil fuels unburned. A decision by BLM to buoy approaches that spur coal burning, by offering an abundance of cheap coal for export, steers us away from our joint

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<sup>235</sup> Testimony of Tom Sanzillo, City of Oakland, City Council Hearing, Institute for Energy Economics and Financial Analysis (Sept. 2015), at 3, attached as Ex. 44.

<sup>236</sup> Id. at 5.

<sup>237</sup> Williams-Derry, Clark, Unfair Market Value II: Coal Exports and the Value of Federal Coal, SIGHTLINE, June 2016, at 5, attached as Ex. 45.

<sup>238</sup> Testimony of Tom Sanzillo (Ex. 44) at 11.

<sup>239</sup> Id. at 7, 13.

<sup>240</sup> See, e.g., Columbia Riverkeeper, et al. Comments on Draft Environmental Impact Statement for Millennium Bulk Terminals Longview, at 69.

<sup>241</sup> Testimony of Tom Sanzillo (Ex. 44) at 11.

<sup>242</sup> Sophia Yan, China plans to cut 1.8 million coal and steel jobs, CNN Money, February, 29, 2016, available at <http://money.cnn.com/2016/02/29/news/economy/china-steel-coal-jobs/> (last visited July 28, 2016)

<sup>243</sup> Thomas Power, et al., Comments on the Greenhouse Gas Impacts of Modeling of Coal Flows in the Millennium Bulk Terminals Longview SEPA Draft Environmental Impact Statement (June 2016), attached as Ex. 46.

<sup>244</sup> Id.

commitments.<sup>245</sup> The PEIS must evaluate these environmental and economic impacts of coal exports, as well as options for limiting export of federal coal.

### **G. The PEIS Should Evaluate the Program’s Structural Flaws that Fail to Generate a Fair Economic Return**

The Mineral Leasing Act authorizes leasing of mineral resources on public lands only where the federal government recovers, at a minimum, the “fair market value” of coal. 30 U.S.C. § 201(a)(1); see also FLPMA, 43 U.S.C. § 1701(a)(9) (requiring that “the United States receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute”). The Department of the Interior and the state where the coal was mined share the revenues from federal coal leasing.<sup>246</sup> These revenues come from two primary sources: a one-time “bonus bid” payment based on the “fair market value” of the coal, and royalties on the sale of coal that is mined.<sup>247</sup> As discussed below, structural flaws in the existing federal coal leasing program with respect to both bonus bids and royalties currently prevent BLM from satisfying its statutory obligation to garner a fair return for American taxpayers. This is particularly true when the full costs, including social and environmental costs, of mining and burning federal coal are properly taken into account. The PEIS must evaluate the environmental impact of current bonus bid and royalty rate structures that fail to internalize social and environmental costs, and, in any alternative BLM studies that allow for future leasing, examine options to meet and exceed the “fair market value” requirement, considering the true costs of coal.<sup>248</sup>

#### 1. Bonus Bids Do Not Reflect the True Value or Costs of Federal Coal.

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<sup>245</sup> Sophia Yan, China plants to cut 1.8 coal and steel jobs supra note 238. In 2013, more than 25 percent of all federal coal produced in Montana and Wyoming was shipped overseas. In 2014, nearly 30 percent of all Montana coal sales were for export; Thomas Power, Comments on the Greenhouse Gas Impacts of Modeling of Coal Flows in the Millennium Bulk Terminals Longview SEPA Draft Environmental Impact Statement, June 2016 (Ex. 46). Increasing the price to reflect its true value in the international marketplace would be an important step toward ensuring that coal companies do not reap windfall profits while preventing the country from meeting its urgent goals.

<sup>246</sup> See Bureau of Land Management, Coal Operations, available at [http://www.blm.gov/wo/st/en/prog/energy/coal\\_and\\_non-energy.print.html](http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html) (last visited July 28, 2016).

<sup>247</sup> Annual rent of \$3 per acre makes up a negligible portion of federal coal-leasing revenue. See 43 C.F.R. § 3473.3-1.

<sup>248</sup> As recognized in the White House in June 2016 report on potential coal royalty reform options, the NEPA “environmental review process can also provide for the consideration of environmental externalities” not currently captured by royalty rates on federal coal. White House Fair Return Report, at 28 n. 16.

The first source of revenue from federal coal is a one-time “bonus bid” payment, which as discussed, must equal or exceed the “fair market value” of the coal tract (in dollars per ton), at the time the coal is leased. 43 C.F.R. § 3422.1; see also 30 U.S.C. § 201(a) (“No bid shall be accepted which is less than the fair market value, as determined by the Secretary, of the coal subject to the lease. Prior to his determination of the fair market value of the coal subject to the lease, the Secretary shall give opportunity for and consideration to public comments on the fair market value.”). BLM uses an appraisal to determine fair market value, which may be based either on an assessment of comparable leases with appropriate adjustments, or financial modeling that accounts for estimated annual revenues and expenses (the so-called “income approach”).<sup>249</sup> In a competitive lease sale, BLM does not disclose the fair market value to bidders. (In fact, BLM has refused to publically disclose the fair market value amounts and supporting analyses even after coal sales, citing FOIA exceptions for trade secrets and deliberative process materials.) Bids below the appraised value must be rejected. In Wyoming, bonus bid payments have ranged in recent years from \$0.85-1.35/ton.<sup>250</sup> Bonus bid payments have been lower in Montana, between \$0.18 and \$0.30/ton.<sup>251</sup>

Numerous scholars and critics have observed that BLM has failed to obtain the full measure of revenue required by law by undervaluing the fair market value of the coal at the bonus bid stage. In a 2012 report, Tom Sanzillo argued that BLM’s “fair market value” assessments systematically ignore market forces that should drive a higher price for Powder River Basin coal, including depletion of central Appalachian coal reserves, diminishing accessibility of Powder River Basin coal, and expanded coal export opportunities.<sup>252</sup> This undervaluation of coal resources is perpetuated by over-reliance on the “comparable sales” approach in BLM appraisals. Sanzillo concluded that BLM’s undervaluation of fair market value has translated into below-market bonus bid payments. Further, undervaluing fair market value has the indirect effect of depressing market prices for Powder River Basin coal, which translates into artificially low royalty payments.

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<sup>249</sup> See Bureau of Land Management, Economic Evaluation of Coal Properties (H-3070-1), available at [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information\\_Resources\\_Management/policy/blm\\_handbook.Par.29194.File.dat/h3070-1.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.29194.File.dat/h3070-1.pdf) (last visited July 11, 2014).

<sup>250</sup> See Bureau of Land Management, Successful Competitive Lease Sales Since 1990, Wyoming, at [http://www.blm.gov/wy/st/en/programs/energy/Coal\\_Resources/coaltables.html](http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/coaltables.html) (last visited July 7, 2014).

<sup>251</sup> See Bureau of Land Management, Successful Competitive Lease Sales Since 1990, Montana , available at <http://www.blm.gov/mt/st/en/prog/energy/coal/tables.html> (last visited July 28, 2016). The lower market value of Montana coal may reflect longer distances to domestic coal plants, higher production costs (i.e. higher strip rations), and the lower quality of some Montana coal. The upper end of this range was a 2012 bonus bid payment for the Signal Peak Mine near Roundup, Montana, which is an underground mine that is outside of the Powder River Basin.

<sup>252</sup> See Tom Sanzillo, THE GREAT GIVEAWAY: AN ANALYSIS OF THE UNITED STATES’ LONG-TERM TREND OF SELLING FEDERALLY-OWNED COAL FOR LESS THAN FAIR MARKET VALUE (June 2012), attached as Ex. 47.

Many of Sanzillo’s conclusions were repeated and amplified in subsequent reports by GAO. First, GAO noted in a December 2013 report that about 90 percent of coal-lease auctions in recent years involved only a single bidder, thus failing to generate competition that could yield higher bonus bids.<sup>253</sup> In a separate report from June 2013, GAO found that in determining the minimum bid amount that is supposed to reflect the fair market value of leases, “BLM does not fully account for export potential.”<sup>254</sup> The report further cited troubling inconsistencies in BLM’s “fair market value” determinations and recommended that BLM seek an independent peer review of its coal valuation practices.<sup>255</sup> In addition, the report observed that BLM often fails to prepare an appraisal or otherwise document “fair market value” for lease modifications, potentially resulting in a below-market return for this coal.<sup>256</sup> Similarly, GAO criticized the practice of some state BLM offices (not including the Wyoming office) of relying exclusively on comparable lease evaluations in determining fair market value, thereby ignoring market trends. GAO recommended that fair market value estimates account for “small but growing” export activity. Finally, GAO criticized lack of transparency in appraisal process.<sup>257</sup>

The Center for American Progress (“CAP”) also has critiqued the lack of competitive leasing practices resulting from the decertification of the Powder River Basin as a coal producing region.<sup>258</sup> CAP argued that “[d]ecertification has effectively given coal companies control over the federal leasing process, allowing them to select which tracts to lease, rather than having to follow a regional leasing plan where the secretary of the interior controls the process ... result[ing] in diminished competition, reduced environmental review of proposed coal leases, and lax oversight.”<sup>259</sup>

Undervaluation of federal coal resources is a particularly acute problem in the context of lease modifications. Since 2005, BLM has been authorized to expand coal lease tracts by up to

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<sup>253</sup> Government Accountability Office, Coal Leasing: BLM Could Enhance Appraisal Process, More Explicitly Consider Coal Exports, and Provide More Public Information, GAO-14-140 (Dec. 2013), attached as Ex. 48.

<sup>254</sup> Office of the Inspector General, U.S. Dep’t of the Interior, Coal Management Program, Report No. CR-EV-BLM-0001-2012, at 7 (June 2013), attached as Ex. 49.

<sup>255</sup> Id. at 9.

<sup>256</sup> Id. at 14.

<sup>257</sup> Government Accountability Office, Coal Leasing: BLM Could Enhance Appraisal Process (Ex. 48).

<sup>258</sup> Center for American Progress, Federal Coal Leasing in the Powder River Basin: A Bad Deal for Taxpayers (July 29, 2014), attached as Ex. 50.

<sup>259</sup> Id. at 2.

960 acres without a competitive bidding process. See 30 U.S.C. § 203(a)(3)(A).<sup>260</sup> And although regulations direct BLM to lease these tracts for fair market value, 43 C.F.R. § 3432.2(c), coal sold through lease modifications is generally much cheaper than coal sold through competitive bids. For example, BLM’s most recent lease sales were sold in 2012 for approximately \$1.10 per ton, and over the past six years, the sale price of competitive coal leases has ranged between \$0.71-1.35 per ton.<sup>261</sup> By contrast, the sale price of Powder River Basin coal lease modifications issued between 2006 and 2012 has ranged between \$0.06-0.10 per ton.<sup>262</sup> The Inspector General has criticized these sales, finding that “BLM might not be obtaining a fair return for lease modifications,” and that the 45 lease modifications issued since 2000 may have resulted in as much as \$60 million in lost revenues.<sup>263</sup>

For all of these reasons, the Obama administration has conceded that the federal coal leasing program “ha[s] not fostered an efficient, competitive system that provides a fair return to the taxpayers.”<sup>264</sup> And these problems are not new. Congress adopted the Federal Coal Leasing Amendments Act of 1976 in part to address concerns at the time that, “[r]ather than initiating a leasing program based on knowledge of existing Federal coal reserves, national energy needs and environmental considerations, the Department normally leased those portions of Federal coal lands for which industry interest was expressed.”<sup>265</sup> This resulted in a situation in which “72 percent of these ‘competitive’ sales had less than two bidders, not really reflective of a competitive environment” and “the public [wa]s being paid a pittance for its coal resources.”<sup>266</sup>

That underpayment of bonus bids is such an enduring problem likely reflects problems inherent in the coal leasing structure—including “asymmetric information” and a “thin bidding

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<sup>260</sup> Coal lease modifications can be even larger if the original coal mine encompasses multiple lease tracts. This was the case in High Country Conservation Advocates, where BLM sought to expand the West Elk coal mine through two separate lease modifications that totaled approximately 1701 acres. 2014 WL 2922751 at \*4; see also Environmental Assessment for the West Elk Coal Lease Modifications Application at 3 (June 2012), available at [http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/uncompahgre\\_field/ufo\\_nepa\\_documents0.Par.96415.File.dat/12-13](http://www.blm.gov/pgdata/etc/medialib/blm/co/information/nepa/uncompahgre_field/ufo_nepa_documents0.Par.96415.File.dat/12-13) (last visited July 28, 2016).

<sup>261</sup> Bureau of Land Management, Successful Competitive Lease Sales Since 1990, Powder River Basin, Wyoming (updated Aug. 2013) available at [http://www.blm.gov/style/medialib/blm/wy/programs/energy/coal/comp\\_lease-1990.Par.55365.File.dat/SuccSales080813.pdf](http://www.blm.gov/style/medialib/blm/wy/programs/energy/coal/comp_lease-1990.Par.55365.File.dat/SuccSales080813.pdf) (last visited July 28, 2016).

<sup>262</sup> See Letter from Deputy Inspector General M.L. Kendall to U.S. Senator Ron Wyden at 7-9 (Nov. 15, 2013).

<sup>263</sup> Office of the Inspector General, U.S. Dep’t of the Interior, Coal Management Program, Report No. CR-EV-BLM-0001-2012, at 13 (Ex. 49).

<sup>264</sup> White House Fair Return Report, at 2 (emphasis added).

<sup>265</sup> H.R. REP. 94-681, 11, 1976 U.S.C.C.A.N. 1943, 1947.

<sup>266</sup> H.R. REP. 94-681, 17, 1976 U.S.C.C.A.N. 1943, 1953.

pool”—that are not easily overcome.<sup>267</sup> For this reason, as described below, reforms to the manner in which the government collects royalties on coal production, including increasing royalty rates, may be the most appropriate way to garner a fair return to taxpayers and ensure that the federal coal leasing program reflects this Nation’s policies demanding decreasing reliance on fossil fuels, particularly coal, for domestic energy production.<sup>268</sup>

## 2. Royalties on Coal Production Fail to Generate a Fair Return to Taxpayers.

Other than bonus bid payments, the second primary source of federal income from coal leasing is royalties paid on the revenue generated from the sale of the coal, based on the price obtained at the first point of sale. 43 C.F.R. § 3473.3-2.<sup>269</sup> Royalties comprise the majority of the revenue from federal coal leases—nearly two-thirds of the total revenue over the period from fiscal years 2003 to 2012.<sup>270</sup> Minimum royalty payments are 12.5% of the coal value for surface mines and 8% of the coal value for underground mines. 43 C.F.R. § 3473.3-2(a). However, the Secretary of the Interior may reduce the royalty for any given mine “whenever he/she determines it necessary to promote development or finds that the lease cannot be successfully operated under its terms.” *Id.* § 3473.3-2(e); *see also id.* § 3485.2(c)(1) (same).<sup>271</sup> In addition, the Secretary may establish a different royalty rate—including a higher rate—at the time a lease is readjusted, *id.* § 3473.3-2, *i.e.* after the initial 20-year lease term and every 10 years thereafter, *id.* § 3451.1(a)(1).

The federal coal leasing program fails to generate a fair return for American taxpayers from royalties, just as it fails to do so from bonus bids. The GAO reported that BLM has reduced royalty rates to “enable continued operations in cases where mining conditions may be particularly challenging and costly, or to enable expanded recovery of federal coal.”<sup>272</sup> GAO calculated the effective royalty rates for the top federal coal producing states in 2012 at:

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<sup>267</sup> White House Fair Return Report, at 11.

<sup>268</sup> *Id.* at 11-12 (recognizing challenges with bonus bid reform, but concluding “royalty payments assessed on the production of coal have the potential to bring the return to the taxpayer” in line with Administration objectives to increase returns to taxpayers).

<sup>269</sup> Among the four states with the most production from federal coal leases—Colorado, Montana, Utah, and Wyoming—the average prices for coal originating in these states in 2011 were \$39.88/ton in Colorado, \$16.02/ton in Montana, \$33.80/ton in Utah, and \$13.56/ton in Wyoming. GAO Report, at 14 (citing EIA’s 2011 Annual Coal Report).

<sup>270</sup> Government Accountability Office Report, at 23.

<sup>271</sup> An application for a royalty reduction “shall contain a detailed statement of expenses and costs of operating the entire mine, the income from the sale of coal, and all facts indicating whether the mine can be successfully operated under the Federal rental and royalty provisions fixed in the Federal lease or why the reduction is necessary to promote development.” 43 C.F.R. § 3485.2(c)(2)(ii).

<sup>272</sup> Government Accountability Office Report at 24-25.

Wyoming – 12.2%; Montana – 11.6%; Utah – 6.9%; and Colorado – 5.6%.<sup>273</sup> When the average effective royalty rate is calculated based on the average delivered market prices that sellers receive for federal coal, that rate drops to only 4.9%.<sup>274</sup>

In addition to low effective royalty rates, other structural flaws have yielded royalty payments that do not reflect the coal’s true value and costs. First, royalties historically have been paid on the coal’s price at the first point of sale, for which the coal is almost certainly undervalued. As the White House recognized in its June 2016 report on the economics of federal coal leasing, “there is an incentive for companies to reduce reported coal sales prices in order to minimize the royalty payments owed and companies have employed several tactics to lower the selling price of coal without losing revenue.”<sup>275</sup>

Recognizing problems with its past approach to coal valuation, the Office of Natural Resources Revenue (“ONRR”) in July 2016 finalized reforms to its methodology for valuing coal for purposes of calculating royalty payments, establishing the value based on the first arm’s-length transaction.<sup>276</sup> These adjustments prevent companies from selling coal in captive transactions to subsidiaries at artificially low prices, paying royalties on that initial sale price, and then having the subsidiary re-sell in the open market for much higher prices without an additional royalty. Although ONRR’s reforms closed an important loophole in royalty collections procedures, the rule did not solve the problem of underpayment. First, ONRR did not set the point of valuation at the final sale to a power plant or other end-user of the coal, thus precluding any taxpayer return on the potentially substantial profit garnered after the first point of sale. Second, ONRR allows unlimited allowances for coal washing and transportation, which can significantly diminish the coal’s calculated value. Third, the rule did not modify royalty rates in a manner to account for the environmental externalities of coal production.

Thus, as ONRR recognized, its rulemaking “takes steps toward ensuring that the valuation process for Federal and Indian coal resources better reflects the changing energy industry while protecting taxpayers and Indian assets, its scope is not broad enough to address the many concerns the commenters raised. For that and other reasons, the U.S. Department of the Interior (Department) recently launched a comprehensive review to identify and evaluate potential reforms to the [f]ederal coal program in order to ensure that it is properly structured to provide a fair return to taxpayers and reflect its impacts on the environment, while continuing to

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<sup>273</sup> Government Accountability Office Report, at 25. While most mining in Wyoming and Montana is surface mining that is subject to the 12.5% default minimum royalty, more underground mining occurs on federal leases in Colorado and Utah, which is subject to the 8% default minimum royalty. *See id.* at 12.

<sup>274</sup> White House Fair Return Report, at 8 (citing M. Haggerty and J. Haggerty, Headwaters Economics, An Assessment of U.S. Federal Coal Royalties: Current Royalty Structure, Effective Royalty Rates, and Reform Options (2015), attached as Ex. 52).

<sup>275</sup> White House Fair Return Report, at 2.

<sup>276</sup> Office of Natural Resources Revenue, Final Rule, Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform, 81 Fed. Reg. 43,338 (July 1, 2016).

help meet our energy needs.”<sup>277</sup> In other words, ONRR deferred to this PEIS to evaluate effective reforms to provide a fair return on federal coal.

3. The PEIS Should Examine the Environmental and Economic Impacts of Failing to Require Coal Producers to Pay for Coal’s True Costs.

Structural failures of the federal coal leasing program that undervalue coal and fail to recognize its costs not only are inconsistent with the statutory requirement to garner a fair return for U.S. taxpayers, they unreasonably catalyze the environmental impacts of mining and burning coal where otherwise it may be uneconomic to do so. While BLM should identify a preferred alternative that ends federal coal leasing altogether, the PEIS also should examine opportunities to ensure that coal producers pay adequate royalties and also internalize the environmental consequences of their activities.

a. The PEIS Should Evaluate Options for Ensuring that Royalties are Paid on Coal’s Full Value.

Although ONRR enacted needed reforms to federal coal valuation for purposes of collecting royalties, additional reforms are essential to ensure royalties are paid on coal’s full value. Sierra Club and Earthjustice previously urged such changes in comments on ONRR’s proposed rule, which are incorporated here by reference.<sup>278</sup> In further reforms applicable to existing coal leases (and to the extent BLM continues leasing, to future coal leases), ONRR should eliminate the royalty distinction between arm’s-length and non-arm’s-length transactions and instead calculate royalties for all federal coal based either on the final sale price to a power plant or other end user, or applicable market prices. Indeed, the White House acknowledged that it would be appropriate to base the market value of coal on market prices for coal with similar characteristics.<sup>279</sup> This would eliminate disputes over whether initial sales are in fact arm’s-length transactions, eliminate the current benchmark approach, and provide industry, ONRR, and the public with greater certainty and clarity around the amount of royalties owed. More fundamentally, basing the valuation on final market prices would ensure that royalties are paid on the full value of all federal coal. By additionally eliminating or limiting transportation deductions and doing away with allowances for coal washing, ONRR can ensure that American taxpayers obtain a fair return on a public resource.

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<sup>277</sup> Id. at 43,338.

<sup>278</sup> See Sierra Club & Earthjustice, Comments on Proposed ONRR Rule: Consolidated Federal Oil and Gas and Federal and Indian Coal Valuation Reform, Docket No. ONRR-2012-0004 (May 8, 2015), attached as Ex. 51.

<sup>279</sup> White House Fair Return Report, at 18.



b. The PEIS Should Evaluate Options for Internalizing the Social and Environmental Costs of Coal Mining By Increasing Royalty Payments on Federal Coal.

An essential component of ensuring a fair return to American taxpayers for public resources is ensuring that the full social and environmental costs of mining federal coal—currently borne by impacted communities—are paid by coal producers. The June 2016 White House report also recognized the important objective of “addressing unpriced environmental externalities” in generating revenue from the coal leasing program.<sup>280</sup> Such externalities include water pollution, land degradation, and climate-forcing methane pollution from coal mining; emissions from transportation to coal markets; emissions of harmful air pollutants and greenhouse gases from coal combustion; and “severe water pollution” from disposal of coal combustion waste.<sup>281</sup> Incorporating the costs of these externalities in the price of coal not only maximizes public revenues, it discourages the imposition of these unacceptable environmental and social harms by reducing the volume of coal that may be economically mined. The PEIS should evaluate these options.<sup>282</sup>

c. The PEIS Should Evaluate Options to Eliminate Royalty Rate Reductions.

As discussed, the Secretary of the Interior “may” reduce the royalty for coal leases 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 it is necessary to promote development, or when the lease cannot be successfully operated under its terms. 43 C.F.R. §§ 3473.3-2(e), 3485.2(c)(1). Because such royalty relief encourages the production of coal that would otherwise not be economic, and thus results in more coal production that would otherwise occur, royalty rate reductions are generally not in the public interest, and we therefore recommend that BLM adopt policy that will eliminate the granting of royalty rate reductions. At a minimum, it is reasonable for BLM to evaluate an alternative that eliminates royalty rate reductions because the Secretary has the discretion under the law to deny every request for such reductions.

The Interior Department and BLM have made clear that the agencies intend to address royalty rates through, and even before the completion of, the PEIS process. The PEIS scoping notice recognized that royalty rate reductions were controversial.<sup>283</sup> The notice further directs

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<sup>280</sup> Id. at 3.

<sup>281</sup> Id. at 28.

<sup>282</sup> See infra Section III.B.

<sup>283</sup> Notice of Intent, 81 Fed. Reg. 17,720, 17,724 (Mar. 30, 2016) (“Stakeholders also criticize the Federal coal program for obtaining even lower returns through certain types of leasing actions, such as lease modifications, and through royalty rate reductions, which may result in royalty rates as low as 2 percent.”); see also Secretarial Order 3338, at 4 (Jan. 15, 2016) (making same observation).

that the PEIS “will address whether the bonus bids, rents, and royalties received under the Federal coal program are successfully securing a fair return to the American public for Federal coal, and, if not, what adjustments could be made to provide such compensation.”<sup>284</sup> “To address concerns about fair returns to taxpayers, the BLM is considering evaluating the following approaches: ... [including] Limit the use of royalty rate reductions.”<sup>285</sup> A fact sheet issued contemporaneously with the Secretarial Order directed that BLM would act on royalty reductions before the PEIS was complete: “in the near term, the BLM will issue guidance that ... [c]larifies the process through which the BLM may consider requests for royalty rate reductions.”<sup>286</sup>

Royalty relief is controversial because it is common, because it has deprived taxpayers of hundreds of millions of dollars, and because its very purpose is to encourage coal mining that might not otherwise occur. Figures from 2014 indicated that BLM had granted royalty rate reductions on more than one-third of all federal coal leases sold since 1990.<sup>287</sup>

A recent report estimated that royalty rate reductions permitted coal companies to retain nearly \$288 million that otherwise taxpayers would have received.<sup>288</sup> The widespread use of royalty rate reduction is in large part responsible for the effective royalty rate in many states being far below the statutory minimum of 12.5% for surface mines and 8% for underground mines. As noted above, the General Accounting Office concluded in 2013 that the effective royalty was 6.9% in Utah and 5.6% in Colorado.<sup>289</sup> “The lower reported rates are largely a function of the rate reductions offered for coal extracted from federal leases in these states.”<sup>290</sup>

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<sup>284</sup> 81 Fed. Reg. at 17,725; Secretarial Order 3338, at 7 (Jan. 15, 2016) (directing that PEIS will address royalties).

<sup>285</sup> 81 Fed. Reg. at 17,726.

<sup>286</sup> Department of the Interior, Fact Sheet: Modernizing The Federal Coal Program (Jan 16, 2016) at 3, available at [http://www.blm.gov/style/medialib/blm/wo/Communications\\_Directorate/public\\_affairs/news\\_release\\_attachments.Par.47489.File.dat/Coal%20Reform%20Fact%20Sheet%20Final.pdf](http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.47489.File.dat/Coal%20Reform%20Fact%20Sheet%20Final.pdf) (last visited July 28, 2016).

<sup>287</sup> M. Haggerty & J. Haggerty, An Assessment of U.S. Federal Coal Royalties, HEADWATERS ECONOMICS (Jan. 2015) at 8 (“Royalty rate reductions occurred on at least 30 out of 83 leases (36 percent of leases) offered for sale since 1990.” (emphasis added)), attached as Ex. 52, and available at <http://headwaterseconomics.org/wphw/wp-content/uploads/Report-Coal-Royalty-Valuation.pdf> (last visited July 28, 2016).

<sup>288</sup> See *id.* at 14 (Figure 4, showing loss of value due to royalty rate reductions); *id.* at 15, Table 3 (Estimated Value of Royalty Rate Reductions, Federal Coal Leased Since 1990) (estimating nearly \$288 million total in royalties lost due to royalty rate reductions since 1990).

<sup>289</sup> General Accounting Office, Coal Leasing: BLM Could Enhance Appraisal Process, More Explicitly Consider Coal Exports, and Provide More Public Information, GAO-12-140 (Dec. 2013) at 24-25 (Ex. 48).

<sup>290</sup> M. Haggerty & J. Haggerty, An Assessment of U.S. Federal Coal Royalties (Ex. 52), at 8.

Other experts, using a modified definition, concluded that the effective royalty rate was no greater than 8% in some states and may be less than 1% in others, apparently in part due to royalty rate reductions.<sup>291</sup>

Analysts have criticized the impacts of royalty rate reductions, alleging that they “distort the energy market by subsidizing coal production, even when it is uneconomical. It is not rational for the federal government to support uneconomical coal production; this runs counter to its ‘fair market value’ mandate.”<sup>292</sup> Others have stated that the “need for royalty reduction is no longer justified” because the original intent of such reductions was to cushion the blow of the 12.5% royalty rate set by Congress in 1976.<sup>293</sup>

Two examples from Colorado illustrate how rate reductions can be subject to abuse, reinforcing that BLM must consider eliminating royalty rate reductions in its PEIS. First, in late 2015, BLM’s Colorado State Office proposed approving a royalty rate reduction for a lease on the Oxbow mine. However, the mine was idled and being demolished, so the reduction would be retroactive for coal already mined, and could in no way encourage future mining. It would simply result in a check to Oxbow for coal already mined. The proposed decision was close to final; a draft was forwarded to Colorado’s governor for review.<sup>294</sup> When media reported on the proposed decision, which would have resulted in a significant payout to billionaire mine owner Bill Koch while encouraging no new mining, BLM ultimately (and belatedly) denied Oxbow’s request.<sup>295</sup> Because the royalty rate reduction could not possibly have impacted Oxbow’s then-terminated operations, any award of royalty relief would have violated the law, regulations and policy governing rate reductions. The fact that BLM even considered this request demonstrates how prone to abuse rate reduction requests can be.

Second, Colorado BLM is currently weighing and may shortly approve a proposal to reduce the royalty paid by Arch Coal’s West Elk mine on two leases the company is already mining. There is little evidence that Arch cannot operate the mine without the subsidy of a rate

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<sup>291</sup> *Id.* at 17, Figure 6 (concluding effective royalty rate for federal coal leases for the years 2008-2012 at between 0.7% and 7.8% depending on the state).

<sup>292</sup> J. Hein & P. Howard, *Illuminating the Hidden Costs of Coal: How the Interior Department Can Use Economic Tools to Modernize the Federal Coal Program*, Institute for Policy Integrity (Dec. 14, 2015) at 8-9, attached as Ex. 53, and available at <http://policyintegrity.org/publications/detail/hidden-costs-of-coal> (last visited July 28, 2016).

<sup>293</sup> Taxpayers for Common Sense, *Federal Coal Leasing, Fair Market Value and a Fair Return for the American Taxpayer* (Sep. 2013) at 16, attached as Ex. 54, and available online at [http://www.taxpayer.net/images/uploads/downloads/TCS\\_Federal\\_Coal\\_Leasing\\_Report\\_-\\_Final\\_-\\_Updated\\_10.4.13.pdf](http://www.taxpayer.net/images/uploads/downloads/TCS_Federal_Coal_Leasing_Report_-_Final_-_Updated_10.4.13.pdf) (last visited July 28, 2016).

<sup>294</sup> See letter from R. Welch, Colorado State Director, BLM to Gov. J. Hickenlooper (Dec. 4, 2015), and enclosed Draft Decision, attached as Ex. 55.

<sup>295</sup> See P. Rucker, U.S. taxpayer due to subsidize Koch-controlled mine, Reuters (Jan. 2016), attached as Ex. 56, and available at <http://www.reuters.com/article/usa-koch-coal-idUSL2N14W1JJ20160112> (last visited July 28, 2016).

reduction. In fact, Arch has operated the mine for the last 19 months without royalty relief while the request has been pending.<sup>296</sup> Further, Arch Coal has told its shareholders that West Elk is a “lower cost” mine, and the company’s reports indicate that West Elk is among Arch’s most profitable mines when comparing the operating margin per ton of coal mined.<sup>297</sup> Arch also continues to pay its executives millions every year, far in excess of what it is likely to save from gaining a royalty rate reduction, casting further doubt on whether the rate reduction is necessary.<sup>298</sup> All of these are factors that BLM should weigh in evaluating the application for a royalty rate reduction. But there is no evidence that the agency has considered anything other than Arch’s representations that mining in the area is made more difficult by adverse geologic and engineering conditions – conditions that have not, apparently, cut into Arch’s ability to profit from the coal at issue or to pay its executives huge salaries. Colorado BLM’s willingness to entertain such a royalty rate reduction request, apparently without investigating the mine’s or the company’s financial status, further demonstrates that such reductions are prone to abuse and may be awarded even when they are unlikely to not meet the criteria established by law.

BLM should address such issues in the PEIS by evaluating whether eliminating royalty rate reductions is appropriate to ensure a fair return on coal mined and that coal is not mined if it is not economic to do so.

### **III. THE PEIS SHOULD EVALUATE A RANGE OF REASONABLE ALTERNATIVES**

BLM must examine reasonable alternatives that meet the nation’s energy needs while avoiding the extreme social and environmental costs of federal coal leasing. NEPA’s implementing regulations require BLM to “[r]igorously explore and objectively evaluate all reasonable alternatives” to its proposed actions. 40 C.F.R. § 1502.14(a). “The alternatives section is ‘the heart of the environmental impact statement.’” City of Sausalito v. O’Neill, 386 F.3d 1186, 1207 (9th Cir. 2004) (quoting 40 C.F.R. § 1502.14). The reasonableness of alternatives is governed by the agency’s statement of the “purpose and need” for the action. See Wyoming v. U.S. Dep’t of Agric., 661 F.3d 1209, 1244 (10th Cir. 2011) (alternatives need not be considered that do not meet purpose and need for project); Pac. Coast Fed’n of Fishermen’s Associations v. Blank, 693 F.3d 1084, 1100 (9th Cir. 2012) (same).

Here, the purpose and need of the PEIS is to “consider whether and how the [federal coal leasing] may be improved and modernized to foster the orderly development of BLM administered coal on Federal lands in a manner that gives proper consideration to the impact of that development on important stewardship values, while also ensuring a fair return to the American public.”<sup>299</sup> As discussed, those stewardship values include, most prominently for

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<sup>296</sup> See letter from E. Zukoski, Earthjustice to R. Welch, Colorado State Director, BLM (Feb. 25, 2016) at 1, attached as Ex. 57.

<sup>297</sup> Id. at 2-3.

<sup>298</sup> See letter from E. Zukoski, Earthjustice to R. Welch, Colorado State Director, BLM (Mar. 16, 2016) at 1, attached as Ex. 58.

<sup>299</sup> Secretarial Order No. 3338, at 1.

purposes of the PEIS, our nation’s commitments to dramatically reduce greenhouse gas emissions. While these comments suggest numerous opportunities to reduce greenhouse gas emissions attributable to burning federal coal, BLM must examine, at a minimum, two overarching alternatives: first, an alternative that ends federal coal leasing; and second, an alternative that requires coal companies to internalize the climate costs of mining and combusting federal coal.

#### **A. The PEIS Should Evaluate an Alternative that Ends Federal Coal Leasing**

Consistent with this country’s overarching climate goals, the PEIS should identify as its preferred alternative an end to federal coal leasing, phased in by declining to issue new leases and by not renewing or modifying existing leases. Such an action is both authorized and achievable.

BLM has the discretion to 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). Here, the public interest—as will be reflected in BLM’s thorough analysis in the PEIS—overwhelmingly supports an end to federal coal leasing.

BLM cannot reject this alternative on grounds that creating an electric generating sector in the U.S. that relies on 100 percent clean energy is infeasible. As explained in a recent paper by Environment America “at least seven detailed studies of clean energy systems – conducted by academics, government agencies and nonprofit organizations– suggest that we have the tools we need to make the transition.”<sup>300</sup>

For many years, scholars explained that the primary barriers achieving a 100 percent clean energy economy were political rather than technological. In 2010, the peer-reviewed journal *Energy Policy* published an article analyzing the feasibility of providing world-wide energy for electric power, transportation, and heating and cooling exclusively from wind, water, and sunlight.<sup>301</sup> In particular, that paper analyzed current and future energy demand; availability of wind, water and sunlight energy resources; the number of facilities then in use and needed to harness sufficient wind, water, and sunlight energy; and the variability of renewable resources; the economics of massive renewable deployment; and material requirements; and policy implications. The paper concluded that a combination of wind turbines, concentrated solar

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<sup>300</sup> Environment America Research & Policy Center, *WE HAVE THE POWER: 100% RENEWABLE ENERGY FOR A CLEAN, THRIVING AMERICA*, ES-7 (Spring 2016), attached as Ex. 59.

<sup>301</sup> Mark Z. Jacobson & Mark A. Delucchi, *Providing All Global Energy with Wind, Water, and Solar Power*, 39 *ENERGY POLICY* 1154–1169 (2011), attached as Ex. 60.

plants, PV solar plants, rooftop PV solar systems, geothermal plants, hydro-electric power plants, wave devices, and tidal turbines could supply all the energy the world requires by 2030.<sup>302</sup> Further, the study concludes that doing so would reduce world power demand by 30 percent, require only 0.59 percent more of the world's land for energy production, and entail similar energy costs.<sup>303</sup>

More recently, the Intergovernmental Panel on Climate Change (“IPCC”) and others have explained that in order to achieve the necessary carbon reductions to keep global temperatures within 2 degrees Celsius of pre-industrial times, the global electricity sector must be decarbonized by 2050.<sup>304</sup>

#### **B. BLM Should Evaluate an Alternative that Forces Coal Companies to Internalize the Climate Costs of Mining and Combusting Federal Coal**

In any alternative that allows for continued coal leasing, the PEIS should ensure that the extraordinary costs of mining and burning coal on our global climate are reflected in the price of federal coal by, at a minimum, incorporating into royalties the social costs of carbon and methane. In addition to identifying the value that would accurately reflect those costs, BLM should analyze whether such an alternative would sufficiently discourage federal coal mining to meet U.S. carbon-reduction targets.

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.<sup>305</sup> Their findings indicated that if the Clean Power Plan (“CPP”) is either struck down or otherwise not implemented, 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 EPA anticipates under the Clean Power Plan. The analysis also finds that in a scenario where the CPP is upheld by the courts and ultimately implemented, 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.<sup>306</sup> Under both a Clean Power Plan and non-Clean Power Plan Scenario, 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

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<sup>302</sup> Id. at 1154.

<sup>303</sup> Id.

<sup>304</sup> Lindee Wong, David de Jager, & Pieter van Breevoort, The Incompatibility of High-Efficient Coal Technology with 2 Degrees Scenarios, ECOFYS 1 (April 2016), attached as Ex. 61.

<sup>305</sup> 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 Ex. 62.

<sup>306</sup> Id. at 3.

GHGs emitted from the electric sector.<sup>307</sup> Further, as the White House Council of Economic Advisors recognized, even if carbon dioxide emissions from coal combustion are completely internalized through downstream regulation such as the CPP (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.<sup>308</sup>

#### **IV. THE PEIS SHOULD EVALUATE OPPORTUNITIES TO ENSURE AN ECONOMICALLY JUST TRANSITION OF COAL-DEPENDENT COMMUNITIES TO A RENEWABLE ENERGY FUTURE**

Through the PEIS process, BLM must evaluate opportunities and actions to help ensure an economically just transition to a clean energy economy for communities most affected by the downturn in the coal market. BLM must evaluate ways to promote economic diversification within those communities most directly affected by the essential and irreversible shift away from burning fossil fuels. The PEIS should 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.<sup>309</sup>

The opportunities that BLM identifies must 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.<sup>310</sup> The PEIS should identify measures for a fair and just transition in which affected workers, their unions, and communities are equal partners in a well-planned, carefully negotiated and managed transition from fossil fuels to clean energy. Such measures should bring good job opportunities to those traditionally left behind and job security and livelihood guarantees to affected workers. Workers’ pensions and health care benefits should be preserved, and workers and members of affected

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<sup>307</sup> Id.

<sup>308</sup> White House Fair Return Report, at 28.

<sup>309</sup> 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 ....”).

<sup>310</sup> 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 Ex. 63; Caroline Farrell, A Just Transition: Lessons Learned From the Environmental Justice Movement, 4 DUKE FORUM FOR LAW & SOCIAL CHANGE 45 (2012), attached as Ex. 64.

communities should receive right of first employment for any jobs that are created by power plant decommissioning or site reclamation. In addition, the PEIS should evaluate measures in which workers receive education and training for industries, ideally unionized, with similar pay and benefits.

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, 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 to be held accountable for cleaning it up so that communities are left with usable land and clean water.

## **V. BLM MUST COMPLY WITH ENDANGERED SPECIES ACT CONSULTATION REQUIREMENTS FOR THE FEDERAL COAL PROGRAM**

The BLM is obligated to conserve species listed under the Endangered Species Act (“ESA”), 16 U.S.C. § 1536. Under section 7 of the ESA, federal agencies must “insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical.” 16 U.S.C. § 1536(a)(2).<sup>311</sup> Because alternatives to be considered in the PEIS “may affect” threatened or endangered species and their critical habitat, 50 C.F.R. § 402.14(a), BLM is required to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (together, “Services”) under ESA section 7 to avoid adversely affecting these resources.

Under ESA section 7, an agency undertaking an action determines, usually with the assistance of the Services, whether listed species or designated critical habitat exist in the area affected by the action. BLM has recognized the importance of engaging with the Services early in this process.<sup>312</sup> If the agency(s) identify resources protected by the ESA, they proceed to formal consultation over the proposed action unless it is determined that the potential effects of the action are insignificant, discountable or wholly beneficial to listed species and their habitat. Working with the Services, the action agency develops a Biological Assessment that describes how the proposed action may affect threatened and endangered species and critical habitat. The Services (either or both, as appropriate) evaluate the effects of the proposed action on listed species and critical habitat, which is communicated in a Biological Opinion (“BO”). The BO may identify reasonable and prudent alternatives for the proposed action that would avoid jeopardizing species listed under the ESA.

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<sup>311</sup> See also BLM Manual 6840.1E3 (committed to “ensuring that actions are not likely to jeopardize the continued existence of any endangered species or threatened species or destroy or adversely modify designated critical habitat”).

<sup>312</sup> BLM Manual 6840.1F.



The threshold for effects that trigger ESA section 7 consultation is low, and is met when an action “may affect” threatened or endangered species and their critical habitat. 50 C.F.R. § 402.14(a); see also Western Watershed Project v. Kraayenbrink, 632 F.3d 472, 498 (9th Cir. 2011) (citation omitted) (describing “may affect” threshold); Pacific Rivers Council v. Shepard, No. 03:11-CV-00442-HU, 2011 WL 7562961, at \*9 (D. Or. Sept. 29, 2011), report and recommendation adopted as modified, No. 03:11-CV-442-HU, 2012 WL 950032 (D. Or. Mar. 20, 2012)) (affirming “how low the threshold is for triggering such consultation”). The “may affect” standard is broadly interpreted, and includes proposed actions that may indirectly affect listed species, and regardless of whether a species or habitat occurs on BLM lands.<sup>313</sup> ESA regulations define “effects of the action” as:

Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

50 C.F.R. § 402.02. The Services have clarified that “[a]ny possible effect, whether beneficial, benign, adverse or of an undetermined character, triggers the formal consultation requirement.”<sup>314</sup>

The federal coal program meets these criteria for triggering ESA section 7 consultation. As BLM’s Notice of Intent acknowledged, “[t]he Federal coal program has other potential impacts on public health and the environment, beyond climate impacts, that will also be assessed in the Programmatic EIS. These include the effects of coal production on . . . wildlife, including endangered species.”<sup>315</sup> As described elsewhere in these comments, the extraction, transportation and combustion of federally owned coal fragments, degrades, and eliminates fish and wildlife habitat, and contributes to climate change, causing many known impacts on listed

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<sup>313</sup> BLM Manual 6840.1F1a

<sup>314</sup> Final Rule, Interagency Cooperation Endangered Species Act of 1973, as Amended, 51 Fed. Reg. 19,926, 19,949 (June 3, 1986).

<sup>315</sup> Notice of Intent, 81 Fed. Reg. at 17,726.

species, both within the coal fields and well beyond.<sup>316</sup> The last programmatic consultation for the federal coal program was two decades ago, and evaluated only reclamation activities.<sup>317</sup> As BLM reviews the environmental consequences of the federal coal program in the PEIS, it must also initiate consultation in order to comply with BLM's duty to ensure that the program "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species." 16 U.S.C. § 1536(a)(2),

## CONCLUSION

The federal coal program PEIS comes at a crucial time for our climate and our communities. By keeping federal coal unburned, we improve our chances of avoiding a climate catastrophe. On the other hand, business as usual almost guarantees a crisis. The NEPA process provides a much needed opportunity both to understand the full range and depth of the program's impacts and to take action to reduce or eliminate the program's detrimental effects. In its Notice of Intent, BLM has already committed to analyzing many of these issues. In this letter we emphasize the need to evaluate the program's climate change impacts, safety and health impacts to communities, impacts on wildlife, the economics of the program including royalty rates, leasing prices, exports, and the role that economics plays in increasing coal consumption at a time when we desperately need to transition to clean energy sources. In evaluating these impacts for each of the studied alternatives, it should be clear that ending federal coal leasing and taking immediate action to reduce climate change impacts on existing leases is essential. We also urge that BLM take action to ensure a "just transition" for workers and for affected communities as a

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<sup>316</sup> In recent years, several species have been listed primarily because of climate change threats resulting from continued greenhouse gas emissions, including the polar bear in 2008, the bearded seal and ringed seal in 2012, and 20 coral species in 2014. Further, courts have recognized that climate change threats alone may be sufficient to endanger certain species. See, e.g., Greater Yellowstone Coal., Inc. v. Servheen, 665 F.3d 1015, 1030 (9th Cir. 2011) (rejecting FWS's speculation that Yellowstone grizzly bears may adapt to alternate food sources in decision to delist the population, where science indicated that the population's primary food source—whitebark pine seeds—were declining in response to climate change); Defs. of Wildlife v. Jewell, No. 14-247-M-DLC, 2016 WL 1363865, at \*24 (D. Mont. Apr. 4, 2016) (rejecting FWS's reliance on uncertainty of climate change impacts on wolverine denning habitat in its decision not to list the species under the ESA, where science indicated that loss of snowpack in denning areas may imperil the species).

<sup>317</sup> See Memorandum, Formal Section 7 Biological Opinion and Conference Report on Surface Coal Mining and Reclamation Operations Under the Surface Mining Control and Reclamation Act of 1977 (Sept. 24, 1996), available at <http://www.osmre.gov/lrg/docs/BiologicalOpinionMemo092496.pdf> (last visited July 28, 2016).

whole. We appreciate BLM's serious consideration of these comments and look forward to engaging in this process as it moves to the next stage.

Sincerely,

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Jenny Harbine, Staff Attorney  
Edward B. Zukoski, Staff Attorney  
Earthjustice

Nathaniel Shoaff, Staff Attorney  
Sierra Club

Mark Salvo, Senior Director, Landscape Conservation  
Defenders of Wildlife

CC: The Hon. Tom Vilsack, Secretary, U.S. Department of Agriculture  
Mr. Robert Bonnie, Under Secretary, U.S. Department of Agriculture  
Ms. Cynthia Giles, Assistant Administrator for the Office of Enforcement and Compliance Assurance, EPA  
Ms. Christy Goldfuss, Managing Director, Council on Environmental Quality  
Mr. Brian Deese, Senior Advisor to the President  
Ms. Janice Schneider, Assistant Secretary for Land and Minerals Management, U.S. Department of the Interior

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