National Wildlife Federation
Association of Northwest Steelheaders
Citizens for Pennsylvania's Future
Montana Wildlife Federation
New Mexico Wildlife Federation

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Sally Jewell, Secretary
United States Department of Interior
1849 C Street NW
Washington, DC 20240

Neil Kornze, Director
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Room 5665
Washington, DC 20240

Via Email: BLM_WO_Coal_Program_PEIS_Comments@BLM.gov

Dear Secretary Jewell and Director Kornze:

I. INTRODUCTION AND OVERVIEW

Thank you for the opportunity to comment on the scope of the Department of Interior's (DOI) Bureau of Land Management (BLM) Programmatic Environmental Impact Statement (PEIS) to reform the federal coal leasing program. We commend the Secretary Jewell and the DOI for halting new federal leasing while this critical program is reviewed to ensure that is in line with interests of wildlife, natural resources and users – which can be all of us – of our federal public lands.

The National Wildlife Federation (NWF) is a national organization with more than 6 million members and supporters, many of which are wildlife enthusiasts, wildlife watchers, hunters, anglers, hikers, gardeners, teachers and general nature enthusiasts who interact with federal public lands on a frequent basis. NWF is also a federation family of 50 independent state affiliate organizations, of which many are in coal states. For 80 years, NWF has been a strong voice for wildlife conservation.

This coal leasing reform process comes at a critical time. The coal industry is rapidly changing, coal use is declining, our energy sector is transforming towards cleaner sources of generation, and coal companies are facing increasing financial difficulties making ends meet and delivering

on required environmental obligations. Between 2008 and 2013, U.S. coal production fell by 16% and worldwide exports are dropping too, with a 21% decline from 2014 to 2015.[1]

Additionally, the high costs of coal are becoming increasingly apparent. Land, water and habitat areas impacted by coal mining are not being reclaimed as required by federal laws designed to protect the lands, waters, resources, wildlife and communities affected by coal mining. With coal companies in bankruptcy, it looks increasingly more likely that the public at large is going to assume many of these costs.

In addition to likely having to assume high clean-up costs, the public is not getting a fair return for the leasing of this coal, with royalty rates too low and companies able to manipulate the system to get real royalty rates that are even lower. In fact, about 90% of coal lease sales only receive bids for a single bidder and lease modifications and royalty rate reductions can result in effective royalty rates as low as 2%, well below what is required by law.[2] Also, as wildfires increase; drought, flood, warming temperatures and decreased snow pack rapidly alter our water systems; sea levels rise and begin to inundate coastal habitats; and other impacts of climate change take hold, the high costs of carbon pollution are becoming real. Wildlife suffering from these costs, from declining moose populations in northern states to trout and salmon that are finding it harder to survive in streams to sea turtles that are seeing beeches needed for reproduction wash away.

In January 2016, Secretary Jewell issued Secretarial Order 3338 which required BLM to review the entire regulatory framework that guides BLM's coal program. Reforms are urgently needed to bring this program in line with a very different and rapidly changing realities around coal and public lands.

As Secretary Jewell's Order lays forth, reform is long overdue. The coal leasing program has not been modernized since 1979[3] when laws governing surface mining had just been passed and little was known about the climate disrupting effects of carbon pollution. A generation later, much has changed. A program this massive, with this many impacts to our wildlife, our public lands and our climate, must change too.

The scope of federal coal program is substantial and has wide-ranging impacts. The production of federally managed coal accounts for about 41% of all coal produced in the nation and BLM is responsible for coal leasing on approximately 570 million acres.[4] According to the Secretary's Order, federal coal generated about 14% of the country's electricity in 2015 and accounts for about 10% of total U.S. GHG emissions.[5] Federal coal is leased from Appalachia to Alaska, but most of the federal coal production (85%) occurs in the arid region of Wyoming and Montana known as the Powder River Basin.[6]

[1] Secretary of Interior, Order No. 3338 (Jan 15, 2016) at 5.
[2] *Id*. at 4.
[3] *Id*. at 1.
[4] *Id*.
[5] *Id*. at 2 and 4.
[6] *Id* at 2.

This is not the first time a pause has been imposed on new federal coal leasing to allow for thoughtful reforms to modernize the program. As the Secretary points out, two other comprehensive reform reviews and new leasing moratoriums of the coal program resulting in reforms have occurred: one in the late-1960s and the second in the early 1980s.[7] The Secretary's current halt on new coal leasing is a prudent measure that will allow for comprehensive reforms to be considered before placing new land under risk. The halt will have virtually no impact on coal mining or coal supply as there is a 20 year supply of coal already under lease.[8]

Meanwhile, the costs of business-as-usual is high and well documented. Numerous reports and audits have found that the revenue system of bonus bids, annual rents, and royalties is not securing a fair return to the taxpayer. Indeed, the American people have been shortchanged by nearly $30 billion over the past three decades.[9] Current policies are thus depriving the states and taxpayers of much needed revenue to account for these costs and pay for other services, such as the maintenance of our public lands.

Specifically, the PEIS will:

> [P]rovide a vehicle for the Department to undertake a comprehensive review of the 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, while also ensuring a fair return to the American public.[10]

According to the Secretary's Order, the PEIS will examine: when, how and where to lease; fair return; climate impacts; socio-economic considerations; exports; and energy needs.[11]

It is of utmost importance that this PEIS provide the basis to reform the coal leasing program in a manner that protects wildlife from the vast impacts of federal coal mining and use. Wildlife are too often the first to be impacted by poor land management actions, unbridled energy development, and an increasingly warming world that threatens species extinction and decline. It is essential that the federal coal program be in sync with where this country is going toward building a clean energy future that is oriented to sustainable land and water conservation, and managed for the public's long term interest. It is also important that the federal coal program be updated to reflect the realities of the modern coal industry: an industry that is in a state of extreme instability and long-term decline, and one that has a standing legacy of failure to achieve basic promised and required environmental, wildlife and land use outcomes.

Wildlife is affected by coal mining in many ways. Mining and related activities cause direct wildlife mortalities and disturb and displace wildlife. Reptiles, amphibians and small mammals

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[7] *Id*. at 5-6.
[8] *Id*. at 2.
[9] Tom Sanzillo, *The Great Giveaway: An analysis of the costly failure of federal coal leasing in the Powder River Basin* (June 2012) at 4, *available at* https://docs.google.com/file/d/0B_qWeYLAqoq1V2YyX3hnR25lcXM/edit.
[10] Secretary of Interior, Order No. 3338 at 1.
[11] *Id*. at 7-8.

are generally not mobile enough to avoid mining equipment and are often directly killed during mining. Birds die when they collide with electrical transmission lines and other mine support structures. Fish and other aquatic wildlife are killed when streams are re-routed, and from construction and mining activities that occur near stream channels.[12]

Coal mining also fragments habitat and causes extreme disturbances that displace larger, more mobile wildlife. Displaced wildlife are placed at risk because, among other impacts like road crossings, they must move to locations already occupied by other wildlife and will experience greater competition for resources they need to survive.

Wildlife in habitat near mines like pronghorn and raptors are often forced to move given the intense noise and destructive activity associated with mining. For example, it has been shown that energy development taking place within 3 kilometers (1.86 miles) or less of greater sage grouse leks – areas where male sage grouse perform in front of females as part of the birds' mating ritual – can cause an increase in the distance females travel to nesting sites and result in lower rates of nest initiation.[13], [14]

Coal mining also harms wildlife by polluting nearby water and air. Mining equipment emits sulfur dioxide, nitrous oxide, and toxic trace metals such as lead in areas that oftentimes would otherwise be relatively free of these pollutants. In areas near access roads and other locations with heavy traffic, "increased levels of lead in vegetation and wildlife have been observed."[15] Over time, increased exposure of wildlife to trace elements through dust from various mining activities can cause animals to "suffer from disorders of the mucous membranes and pulmonary complication."[16] Surface water contamination from increased sediment loads and the leaching of toxic elements from exposed ores and rocks can cause decreases in aquatic oxygen content and light penetration, reducing the growth of aquatic plants and resulting in fish mortality as well as habitat degradation and destruction in streams.[17]

Carbon pollution from coal combustion and other sources further presents profound impacts to wildlife. We are already experiencing record-breaking and destructive storms and floods; unprecedented severe droughts; earlier, more frequent and more intense wild fires; decreased

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[12] U.S. Forest Service General Technical Report INT-126, "Wildlife: User guide for mining and reclamation," (July 1982), *available at* http://babel.hathitrust.org/cgi/pt?id=umn.31951d03009787s.
[13] A.G. Lyon and S.H. Anderson, "Potential gas development impacts on sage grouse nest initiation and movement," *Wildlife Society Bulletin* 31(2)486-491 (2003), *available at* http://www.jstor.org/stable/3784329.
[14] U.S. Department of Interior, Bureau of Land Management Instruction Memorandum No. 2014-100, "Gunnison Sage-grouse Habitat Management Policy on Bureau of Land Management-Administered Lands in Colorado and Utah," (May 30, 2014), *available at* http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2014/IM_2014-100.html.
[15] U.S. Forest Service General Technical Report INT-126, "Wildlife: User guide for mining and reclamation," (July, 1982), *available at* http://babel.hathitrust.org/cgi/pt?id=umn.31951d03009787s.
[16] *Id.*
[17] *Id.*

snow pack; ocean acidification; and other troubling impacts.[18] This warming is projected to get more intense.[19]

With a warming world comes shifting habitats and changes in suitable wildlife ranges. As a result, many wildlife species are finding or will find themselves without a home. Plant and animal species are moving their entire ranges in search of colder locales, in many cases two-to-three times faster than scientists anticipated.[20] If carbon pollution continues at the current rate, scientists predict that higher temperatures will lead to extinctions of 50% of species around the globe.[21]

It is also important to detail the rapidly changing coal market. Coal use in the United States has been in a steady decline since 2005 and is approaching historic lows.[22] While coal use has risen and fallen over the last 60 years, shifting market forces such as a burgeoning renewable energy industries like wind and solar, cheaper gas along with an evolving regulatory and political landscape that better patrols the harmful effects of coal combustion have made it uneconomical to build new coal plants and have worked to take many existing plants off-line.

The result is that the recent decline in coal is not part of the historic ups and downs of the industry, but instead marks a significant market transformation that signals a permanent switch away from coal combustion and towards cleaner, renewable sources of energy to generate power. As a result of this market shift, the industry has seen previously financially secure coal company giants, like Arch Coal, Peabody Coal, and Alpha Natural Resources, file for bankruptcy, putting significant reclamation commitments made by these companies under a cloud of doubt as restructuring plans are worked out and the future of these companies remains uncertain. The realities and challenges posed by this rapidly changing industry should guide the coal leasing reform effort to ensure that communities and natural resources are properly protected.

With this backdrop, our recommendations for the scope of the PEIS, detailed more extensively in the end section of these comments, are driven by the need for DOI and BLM to address the following fundamental needs for reform to improve the program for wildlife and our members:

- **Scope a protective purpose and need that leads to protective alternatives that protect wildlife and communities from the impacts of federal coal leasing.**
- **Integrate the reform process with other critical agencies, particularly OSM.**
- **Ensure that federal coal mining is compliant with existing law before permitting new or expanded leasing.**
- **Fix coal reclamation before opening up more land to coal mining.**
- **End the practice of leasing to companies that are self-bonded**.

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[18] U.S. Global Change Research Program, *2014 National Climate Assessment* (2014), *available at* http://nca2014.globalchange.gov/report/our-changing-climate/observed-change.
[19] *Id.*
[20] National Wildlife Federation, *Wildlife in a Warming World* (Jan. 2013), *available at* www.nwf.org/climatecrisis.
[21] Intergovernmental Panel on Climate Change, *Climate Change 2007: Synthesis Report.* Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the IPCC (2007), Geneva, Switzerland, *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf.
[22] U.S. Energy Information Administration, *Monthly Energy Review* (June 2016) at Tbl.1 Primary Energy Consumption by Source, *available at* http://www.eia.gov/totalenergy/data/monthly/pdf/sec1_7.pdf.

- **Modernize the federal coal royalty system and increase rates to ensure a fair public return for the publicly held resource.**
- **Ensure an open and transparent leasing process and end leasing-by-application.**
- **Mining should not occur in unsuitable lands or environmentally sensitive lands.**
- **Address underfunded needs, particularly on public lands, by adjusting the federal coal royalty rate.**
- **Federal coal program must be consistent with federal carbon reduction policy and goals, including the Administration's Climate Action Plan, and properly internalize the costs of carbon pollution to industry**.
- **The federal coal program must be reformed to allow from a just transition to cleaner sources of energy.**

II. THE NATIONAL ENVIRONMENTAL POLICY ACT: THE UNDERPINNING OF THE PEIS

The PEIS is governed by the National Environmental Policy Act (NEPA). NEPA "is our basic national charter for protection of the environment."[23] 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,"[24]; 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."[25]

NEPA regulations require that there be a stated "purpose and need" for a proposed action.[26] Regulations provide that a "purpose and need" statement "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."[27] Additionally, NEPA requires that the agency "provide full and fair discussion of significant environmental impacts and shall inform decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment."[28] The alternatives analysis must include a "No Action" alternative.[29] Since the "reasonable alternatives" to be considered relate to the purpose and need cited by the agency, the way in which the agency shapes the purpose and need of the PEIS becomes critical to determining the alternatives that are examined.

The NEPA discussion must also include an analysis of "direct effects," which are "caused by the action and occur at the same time and place," as well as "indirect effects which . . . are later in time or farther removed in distance, but are still reasonably foreseeable."[30] An EIS must also consider the cumulative impacts of the proposed federal agency action together with past,

[23] 40 C.F.R. § 1500.1(a).
[24] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).
[25] *Id*. at 349.
[26] 40 C.F.R. § 1502.13.
[27] *Id*.
[28] 40 C.F.R. § 1502.1.
[29] 42 U.S.C. § 4332(2)(C).
[30] 40 C.F.R. § 1508.8.

present, and reasonably foreseeable future actions, including all federal and non-federal activities.[31]

Agencies may conduct a programmatic review under NEPA. As laid out in guidance by the Council of Environmental Quality:

> NEPA reviews may be on a site- or project-specific level or on broader – programmatic – level. Programmatic analyses have value by setting out the broad view of environmental impacts and benefits for a proposed decision. That programmatic NEPA review can then be relied upon when agencies make decisions based on the Programmatic Environmental Assessment (PEA) or Programmatic Environmental Impact Statement (PEIS) such as a rulemaking or establishing a policy, program, or plan, as well as when decisions are based on a subsequent – tiered – NEPA review. Programmatic NEPA reviews should result in clearer and more transparent decisionmaking, as well as provide a better defined and more expeditious path toward decisions on proposed actions.[32]

CEQ's guidance goes on to state that, "Programmatic NEPA reviews are governed by the same regulations and guidance that apply to non-programmatic NEPA reviews."[33]

NEPA further requires discussions of "[e]nergy requirements and conservation potential of various alternatives and mitigation measures,"[34] as well as "possible conflicts between the proposed action and the objectives of Federal, State, and local land use plans, policies and controls for the area concerned."[35] Case law has additionally established that climate change should be considered in documents prepared under NEPA. In perhaps the most important case on the issue, *Center for Biological Diversity v. National Highway Traffic Safety Admin.*, the Ninth Circuit stated, "The impact of greenhouse gas emissions on climate change is precisely the

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[31] *Id*. § 1508.7.

[32] Council on Environmental Quality, Memorandum for Heads of Federal Department and Agencies: Effective Use of Programmatic NEPA Reviews (Dec. 18, 2014) at 6-7, *available at* https://ceq.doe.gov/current_developments/docs/Effective_Use_of_Programmatic_NEPA_Reviews_Final_Dec2014_searchable.pdf.

[33] *Id*. at 7. Programmatic NEPA reviews are allowed pursuant to 40 CFR §§ 1502.4(b)-(c), which state:

> (b) Environmental impact statements may be prepared, and are sometimes required, for broad Federal actions such as the adoption of new agency programs or regulations (§ 1508.18). Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decision-making.
> (c) When preparing statements on broad actions (including proposals by more than one agency), agencies may find it useful to evaluate the proposal(s) in one of the following ways:
> (1) Geographically, including actions occurring in the same general location, such as body of water, region, or metropolitan area.
> (2) Generically, including actions that have relevant similarities, such as common timing, impacts, alternatives, methods of implementation, media, or subject matter.
> (3) By stage of technological development, including Federal or Federally assisted research, development or demonstration programs for new technologies which, if implemented, could significantly affect the quality of the human environment….

[34] 42 U.S.C. § 4322.

[35] 40 C.F.R. § 1502.16(c) & 1508.27(b)(10).

kind of cumulative impacts analysis that NEPA requires agencies to conduct."[36] Courts have rejected an agency's NEPA document based, in part, on the agency's failure to analyze the impact of increased greenhouse gas emissions.[37]

III. THE FEDERAL COAL LEASING PROGRAM

The Mineral Leasing Act of 1920[38] (MLA) established a leasing process for all deposits of coal, phosphate, sodium, potassium, oil, and gas on federal land. The goal of Congress in passing the MLA was to encourage better management of federal land and mineral resources. Under the MLA, the two principal methods for leasing coal were public sale by competitive bidding (in areas containing known quantities of coal deposits),[39] and prospecting permits with a right to obtain a preference right lease upon discovery of commercial quantities of coal (in unclaimed and undeveloped areas with no known coal deposits).[40] As is discussed herein, other federal laws impact federal coal mining and leasing decisions. These laws – some of which are administered by other agencies within DOI – must be considered as part of the reform process, particularly issues concerning reclamation, bonding and regulation of surface mining pursuant to the Surface Mining Control and Reclamation Act (SMCRA) administered by OSM. These concerns are addressed below.

Congress amended the MLA with the passage of the Federal Coal Leasing Amendments Act (FCLAA) in 1976.[41] The intent of Congress was to remedy several problems with federal coal leasing and enforcement of the MLA, including:

1. **Competition among leaseholders**. Expanded the definition of control and established a 100,000 acre national limit on lease acres controlled by any corporation or its affiliates.[42] (The MLA prohibits issuing leases to companies with more than 75,000 acres of leases or permits within a single state, or to companies with more than 150,000 acres of leases or permits throughout the U.S.).
2. **Fair return to the public**. Repealed the preference right leasing system subject to valid existing rights.[43] All leases awarded on basis of competitive bids, and a bid cannot be

[36] *Center for Biological Diversity v. National Highway Traffic Safety Admin*., 538 F.3d 1172, 1213, 1217 (9th Cir. 2008).
[37] *See, e.g., Border Power Plant Working Group v. Department of Energy*, 260 F. Supp. 2d 997 (S.D. Cal. 2003) (emissions from Mexican power plants had to be considered in NEPA review of electricity transmission lines to connect power plants with power grid in California); *Center for Biological Diversity*, 538 F.3d 1172 (failure to consider the impact of new Corporate Fuel Economy standards on greenhouse gas emissions); *Mid States Coalition for Progress v. Surface Transp. Bd*., 345 F.3d 520 (8th Cir. 2003) (failure to consider impact on air quality from increased use of coal due to new rail line).
[38] 30 U.S.C. §§181 *et seq*. (1920).
[39] *Id*. § 201(a) (1970), *amended by* scattered sections of 30 U.S.C. §§ 181-352 (1988).
[40] *Id*. § 201(b) (1970), *repealed*, subject to valid existing rights, by scattered sections of 30 U.S.C. §§ 181-352 (1988).
[41] Pub. L. No. 94-377, 90 Stat. 1013 (codified in scattered sections of 30 U.S.C. §§ 181-352 (1988)); *see* Harold P. Quinn, Jr., *Lessons from the Coal Law – The Future of Natural Resource Development*, Proceedings of the Rocky Mountain Mineral Law Forty-First Annual Institute (1995); *see also* Mark Squillace, *The Tragic Story of the Federal Coal Leasing Program*, 27 NAT. RESOURCES J. 3, at 29 (Winter 2013).
[42] FCLAA § 11, 30 U.S.C. § 184(a)(1).
[43] FCLAA § 4, 30 U.S.C. § 201(b).

accepted unless it represents the fair market value as determined by the Secretary.[44] A minimum royalty of 12.5% of the value of the coal imposed on new leases with readjustment every ten years after the twenty-year primary term.[45]

3. **Environmental protection, planning, and public participation**. Prohibits coal leasing until areas included in a comprehensive land use plan. Prior to leasing a tract, a public hearing must be held in the area to consider the effects lease issuance might have on environment, community, and local economy.[46]

BLM is responsible for coal leasing on roughly 570 million acres of federally owned coal. The surface estate of these lands could be controlled by BLM, the United States Forest Service, private landowners, state land owners, or other Federal agencies.[47] BLM conducts coal lease sales either through a regional leasing process or a leasing-by-application process. BLM also supervises the exploration, development and production operations for coal on both federal and Indian lands.[48]

The basic structure for the federal coal leasing program established under FCLAA was set out in the 1979 and 1982 regulations, which are now outdated.[49] The process begins with the establishment of "coal production regions."[50] In designated federal coal production regions, the BLM carries out a four-stage leasing process: (1) land use planning; (2) regional leasing level planning; (3) coal lease activity planning; and (4) lease sale.[51] In areas outside coal production regions, the coal leasing process is simplified to expedite leasing, often with competition cut out of the process. As a practical matter this means that, contrary to the plain language of FCLAA and BLM rules, the coal industry – not the government – drives the coal leasing process.[52] In 1990, the PRB – despite the fact that vast majority of federal coal leased comes from that region – was decertified as a coal production region.[53]

According to regulations promulgated under the FCLAA, coal leasing is carried out in four phases: Other laws affect certain stages of the leasing process.

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[44] FCLAA § 2, 30 U.S.C. § 201(a).
[45] FCLAA § 6, 30 U.S.C. § 207(a).
[46] FCLAA § 3, 30 U.S.C. § 201(a)(3). *See also* 30 U.S.C. § 207(c) (1988) (operation and reclamation plan).
[47] *See* U.S. Bureau of Land Management, Coal Operations, *available at* http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html. U.S. government-owned lands hold about 60% of U.S. recoverable coal reserves.
[48] *See* Memorandum of Understanding OSM – BIA – BLM, Management of Coal Mining on Indian Lands (Dec. 2001), *available at* http://www.wrcc.osmre.gov/programs/2002-BIA-BLM-OSM-MOU.pdf.
[49] 43 C.F.R. §§ 3400-3487.
[50] The rules do not define the term "coal production regions," but the words seem self-explanatory. The meaning of the phrase "coal production region" is critical to the operation of the leasing program because the rules make clear that "[c]oal production regions shall be used for establishing regional leasing levels... ." 43 C.F.R. § 3400.5 (2011).
[51] For a more detailed description of the coal leasing process and the requirements of the MLA and FCLAA, see Mark Squillace, *The Tragic Story of the Federal Coal Leasing Program*, 27 NAT. RESOURCES J. 3, AT 29 (Winter 2013); *see also* U.S. Bureau of Land Managment, Federal Coal Leasing, *available at* http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html; U.S. Bureau of Land Management, Coal Operations, *available at* http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html.
[52] Mark Squillace, *The Tragic Story of the Federal Coal Leasing Program* at 29, 27 NAT. RESOURCES J. 3 (Winter 2013).
[53] 55 Fed. Reg. 784-85 (Jan. 9, 1990).

Land Use Planning. The land use planning process helps BLM and other federal land management agencies evaluate which public lands are available for and suitable for coal leasing. On federal coal lands, the lands review process involves blending the land use planning requirements of Federal Land Policy and Management Act, FCLAA, and SMCRA.[54] There are four specific land use screening steps that are unique to developing land use planning decisions for federal coal lands. These are: (1) identification of coal with potential for development (quantity and quality); (2) determining whether lands may be unsuitable for mining; (3) assessing multiple use conflicts; and (4) consulting with surface owners to obtain the necessary consent for mining as required by SMCRA.[55] At the completion this process, the land management agency adopts a final land use plan (Resource Management Plans (RMPs) on BLM lands and Land and Resource Management Plans (LRMPs) on Forest Service lands).

An important part of this process is identifying areas that are not suitable for mining. Section 522 of SMCRA calls for designation of lands unsuitable for coal mining.[56] This provision represents Congress' decision to protect a wide range of public and private interests through discretionary and mandatory prohibitions on surface mining activities. Under section 522, coal mining is flatly prohibited on lands where reclamation under the Act's standards is not technologically or economically possible,[57] on certain categories of federal land[58] and on private lands located in close proximity to proposed coal mines.[59] The only exception to these prohibitions is for valid existing rights.[60] SMCRA also gives the states discretionary authority to designate certain other lands as unsuitable for mining.[61] Additionally, states "may establish additional or more stringent criteria" and the Secretary may establish "additional criteria" for unsuitability determinations.[62]

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[54] The implementing regulations for each of these statutory land use planning requirements are found at: 43 C.F.R. Part 1600 (FLPMA); 43 C.F.R. §§ 3420.1-4 to 3420.1-8 (FCLAA); 43 C.F.R. Subpart 3461 (SMCRA).
[55] 43 C.F.R. § 3420.1-4
[56] 30 U.S.C. § 1272.
[57] *Id*. § 1272(a)(2).
[58] *Id*. § 1272(e)(1) (lands within the boundaries of units of the National Park System, the National Wildlife Refuge Systems, the National System of Trails, the National Wilderness Preservation System, the Wild and Scenic Rivers System, and National Recreation Areas); *id*. § 1272(e)(2) (any Federal lands within the boundaries of any national forest, with some exceptions); *id*. § 1272(e)(3) (publicly owned park or places included in the National Register of Historic Sites unless approved jointly by the regulatory authority and the Federal, State, or local agency with jurisdiction over the park or the historic site); *id*. § 1272(e)(4) (within one hundred feet of a public road, except that the road may be relocated).
[59] *Id*. §1272(e)(5) (within three hundred feet from any occupied dwelling, unless waived by the owner thereof, nor within three hundred feet of any public building, school, church, community, or institutional building, public park, or within one hundred feet of a cemetery).
[60] *Id*. §1272(e). The valid existing rights exception was established to protect private property rights against infringements by the government that would otherwise be considered unconstitutional. Congress did not provide a statutory definition for valid existing rights.
[61] *Id*. § 1272(a)(3). These include lands where surface mining will: (A) be incompatible with existing State or local land use plans or programs; or (B) affect fragile or historic lands in which such operations could result in significant damage to important historic, cultural, scientific, and esthetic values and natural systems; or (C) affect renewable resource lands in which such operations could result in a substantial loss or reduction of long-range productivity of water supply or of food or fiber products, and such lands to include aquifers and aquifer recharge areas; or (D) affect natural hazard lands in which such operations could substantially endanger life and property, such lands to include areas subject to frequent flooding and areas of unstable geology.
[62] 30 C.F.R. § 762.12.

During coal lease activity planning, the RCT guides the tract delineation process, including the selection of tracts that will meet the leasing level set by the Secretary.[63] The activity planning phase includes a review of the land use plan, a long-range market analysis and a call for expressions of interest in leasing that is supposed to help BLM decide whether to proceed with leasing. The RCT, with the assistance of an appointed panel of science advisors and an internal BLM review council, identifies, ranks, analyzes, and selects tracts for study in a regional coal lease sale EIS. The regional lease sale decision is then published in the Federal Register.

Finally, the lease sale is scheduled. Public comment is solicited on fair market value and appropriate mining methods to achieve the maximum economic recovery of the coal resource. A regional evaluation team then prepares its own estimate of the value of each lease tract. Following a 30 day period of public notice, the lease sale is offered by means of sealed bids. This is sometimes called the "bonus bid," and it is paid up-front to the federal government by the high bidder, assuming BLM accepts the high bid as representing fair market value.[64] A post-sale analysis of the bids is then made recommending acceptance of the high bids. Only high bids representing fair market value may be accepted. A successful bidder must also pass an antitrust review by the Department of Justice.

There are no exceptions to the phase one land use planning and phase four lease sale activity requirements. But the rules establish a "lease on application" process (usually described as "lease by application" or LBA) that effectively allows BLM to avoid phases two and three of the leasing process – the stages where the federal government sets the leasing levels and designs tracts for lease sale – in two circumstances.[65] First, LBAs are allowed for emergency leasing within designated federal coal production regions. Second, LBAs are allowed for leases issued "outside coal production regions."

The Powder River Basin was decertified as a coal production region in 1990.[66] The practical effect is that the area where the vast majority of coal leases occur by LBAs, which require a lesser level of review.

Among other requirements, an applicant for a new coal lease must provide a self-certified statement that it is in compliance with all applicable laws and regulations, including SMCRA and other laws that are designed to ensure the reclamation and environmental integrity of areas being mined.[67]

A federal coal lease grants the right to explore for, extract, remove, and dispose of some or all of the coal deposits that may be found on the leased lands for an initial term of 20 years.[68] Coal leases are granted on the condition that the lessee will obtain the appropriate permits and licenses

[63] 43 C.F.R. §§ 3420.3 – 3420.4.
[64] The bonus bid is paid on top of a 12.5% production royalty for federal surface-mined coal as provided under the FCLAA. 30 U.S.C. § 207; 43 C.F.R. § 3473.3–2(a)(1). The royalty rate for coal mined by underground methods is set at 8%. *Id.* at § 3473.3–2(a)(2). Both the bonus bid and royalty payments are shared equally by the state and federal governments.
[65] 43 C.F.R. §§ 3425.0-1 – 3425.5.
[66] 55 Fed. Reg. 784-785 (Jan. 9, 1990).
[67] 43 C.F.R. § 3472.1-2(e)(1).
[68] *Id*. § 3475.2.

from the BLM, OSM, and any affected state and local governments.

Revenues from Coal Leasing. The BLM receives revenues from coal leasing at three points:

1. **Bonus.** A bonus that is paid at the time BLM issues a lease.
2. **Rental Fees.** The annual rental rate for coal leases is $3 per acre (or fraction thereof). After the lease is issued, rentals must be received by the Department of the Interior's Office of Natural Resources Revenue (ONRR) on or before the lease anniversary date to prevent cancellation of the lease.
3. **Production Royalties.** The royalty for federal coal has been established by law at 12.5% of the gross value of the coal produced. The 12.5% royalty rate applies to coal severed by surface mining methods.

All receipts from a lease are shared equally with the state in which the lease is located.[69]

IV. COAL LEASING AND PUBLIC LANDS: A BROKEN AND ANTIQUATED SYSTEM

As stated above, coal mining on federal public land accounts for 41% of all coal produced in the United States, 85% of which originates in the Powder River Basin of Wyoming and Montana. Three companies in particular dominate federal coal production: Peabody Energy, Arch Coal, and Cloud Peak Energy. Two of these companies, Arch Coal and Peabody Energy, have recently declared bankruptcy. Federal coal accounted for 88% of Cloud Peak Energy's total coal production, 83% of Arch Coal's, and 68% of Peabody Energy's total 2014 US coal production.[70]

Due to subsidies and loopholes, coal companies currently pay effective royalty rates of 4.9% (and, as the Secretary's Order notes, as low as 2%), which is well below the 12.5% required by

[69] U.S. Bureau of Land Management, Federal Coal Leasing, *available at* http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html. For coal mined by underground methods, the statute provides that the Secretary may establish a lesser royalty rate. By regulation, the BLM requires an 8% royalty for coal severed by underground mining methods. *Id*.

[70] Greenpeace, *Corporate Welfare for Coal: The biggest coal mining companies depend on subsidized federal coal, even as they attack federal climate and clean air policies* (March 2016) at 3, *available at* http://www.greenpeace.org/usa/wp-content/uploads/2016/03/corporate-welfare-for-coal.pdf?f3025c.

law.[71] This is costing taxpayers about one billion dollars every year in lost revenues.[72] Additionally, 90% of all coal lease sales only have a single bidder, and the formula DOI uses to estimate fair market value is kept confidential along with the rates applied to each leased and the cost deductions given to the coal companies.[73]

Since 1990, all federal coal leasing has taken place through an LBA process where companies propose lease tracts to be put up for sale by BLM.[74] Tracts are leased out for an initial 20-year period, so long as the lessee produces coal in commercial quantities within a 10-year period.

Even though RMPs show millions of acres of federal coal available for leasing, the vast majority of lease applications BLM receives are proposed by coal companies adjacent to companies' existing coal mines, allowing current mining operations to continue. Despite having "suitability" criteria that should guide whether BLM actually makes lands available for coal leasing and a broad multiple use mandate that requires the agency to consider how to protect other uses and values, BLM has failed to take lands off the table – neither finding lands "unsuitable" nor determining other resources should be protected.

The effect of DOI's insufficient fair market value appraisal process has resulted in a loss of nearly $30 billion in revenue to the U.S. Treasury from the federal coal program during the preceding 30 years. Outdated federal coal revenue policies also distort U.S. energy markets. In particular, the federal coal leasing program provides an unfair advantage to companies mining Powder River Basin coal resulting in Powder River Basin coal being significantly undervalued.

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[71] Greg Zimmerman, Claire Moser, Jessica Goad, and Matt Lee-Ashley, *Fair Share Scorecard: Ensuring Taxpayers Receive a Fair Share* (*Fair Share*) (Center for American Progress and Center for Western Priorities Aug. 2015) at 7, *available at* https://cdn.americanprogress.org/wp-content/uploads/2015/08/14133642/FairShareScorecard-report-817.pdf, *citing* Matt Lee-Ashley and Nidhi Thakar, *Cutting Subsidies and Closing Loopholes in the U.S. Department of the Interior's Coal Program* (Washington: Center for American Progress, 2015), *available at* https://cdn.americanprogress.org/wp-content/uploads/2015/01/CoalSubs-brief2.pdf.; Mark Haggerty, HEADWATERS ECONOMICS, AN ASSESSMENT OF U.S. FEDERAL COAL ROYALTIES: CURRENT ROYALTY STRUCTURE, EFFECTIVE ROYALTY RATES, AND REFORM OPTIONS (2015) at 1, *available at* http://headwaterseconomics.org/wphw/wp-content/uploads/Report-Coal-Royalty-Valuation.pdf. The FCLAA specifically provides that surface mine leases will be charged a minimum royalty of 12.5% and that the secretary of the interior sets by regulation the royalty rate for underground mine leases. "A lease shall require payment of a royalty in such amount as the Secretary shall determine of not less than 12 1/2 per centum of the value of coal as defined by regulation, except the Secretary may determine a lesser amount in the case of coal recovered by underground mining operations." 30 U.S.C. § 207(a).

[72] Zimmerman et al., *Fair Share* at 7, *citing* Headwaters Economics, *An Assessment of U.S. Federal Coal Royalties: Current Royalty Structure, Effective Royalty Rates, and Reform Options* (2015), *available at* http://headwaterseconomics.org/wphw/wp-content/uploads/Report-Coal-Royalty-Valuation.pdf

[73] Zimmerman, et al., *Fair Share*, at 7-8, citing Bureau of Land Management, "Coal Operations," available at http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.print.html (last accessed August 2015); Headwaters Economics, *An Assessment of U.S. Federal Coal Royalties: Current Royalty Structure, Effective Royalty Rates, and Reform Options*; Claire Moser and others, "Cutting Greenhouse Gas from Fossil-Fuel Extraction on Federal Lands and Waters" (Washington: Center for American Progress, 2015), *available at* https://cdn.americanprogress.org/wpcontent/uploads/2015/03/PublicLandsEmissions-brief.pdf.

[74] General Accounting Office, *Coal Leasing, BLM Could Enhance Appraisal Process, More Explicitly Consider Coal Exports, and Provide More Public Information* (Dec. 2013) at 2, *available at* http://www.gao.gov/assets/660/659801.pdf.

It sells for less than one-third of the price of Appalachian coal, even when accounting for Appalachian coal's higher heat content.[75]

Coal leasing on federal land has high external costs that are not being borne by the industry. Major areas of failure include basic compliance with environmental safeguards, particularly reclaiming mined land that serves as important habitat for wildlife; protecting the public through adequate bonds that are third party backed and keep clean-up costs from being passed on to the public; and failure to account for the high and increasing costs of carbon pollution associated with every life-cycle phase of federal coal mining.

As a particularly apt example, a recent report has found that reclamation – a basic requirement of mining– suffers from chronic failure, particularly in the west where the vast majority of federally leased coal in mined.[76] The report finds that coal companies in the west are not fully reclaiming mines to final standards, and the public faces increasing long-term liability for massive reclamation costs of up to $2 billion and damage to landscapes, wildlife and crucial water supplies. More specifically, after decades of mining, of the 450 square miles of disturbed mined land in Montana, North Dakota, and Wyoming, only 46 square miles has met the final reclamation requirements for final phase III and IV bond release.[77] This calls into question the industry's prospects and capabilities of successfully reclaiming the harsh, brittle and arid ecosystems of western states.

The coal industry is in a period of rapid transition as the United States and world energy markets shift speedily away from coal due to changing fuel prices, concerns of over carbon pollution, and the development of cleaner, often cheaper, fuel and energy sources. Unlike other periods in coal's history, these changes appear to be long term and signal the end of the dominance of coal as a source of electric and power generation. It is important DOI and BLM's reform of the coal program account for this seismic shift in the coal and energy sector.

Until recently, coal had been by a significant number the primary source of electricity generation at over or about 40% of all generation, but production and use are falling fast.[78] The numbers paint a clear picture. In 2016, coal production is on pace to fall 16.7%, a 25% decrease in coal production since 2014. The largest production cuts to come from the Appalachian and western regions, at 15% and 20%, respectively.[79] This falling production comes in the face of falling demand. According to the U.S. Energy Information Administration, domestic coal-fired generators burned an average of 948 million tons annually from 1997 through 2015 compared to

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[75] Nidhi Thakar and Michael Madowitz, *Federal Coal Leasing in the Powder River Basin: A Bad Deal for Taxpayers* (Center for American Progress July 29, 2014), *available at* https://www.americanprogress.org/issues/green/report/2014/07/29/94204/federal-coal-leasing-in-the-powder-river-basin/.

[76] Alexis Bonogofsky, Amanda Jahshan, Hillary Yu, Dan Cohn, Margie MacDonald, *Undermined Promise II* (National Wildlife Federation and Natural Resources Defense Council 2015), *available at* http://www.underminedpromise.org/UnderminedPromiseII.pdf.

[77] *Id*. at 4.

[78] U.S. Energy Information Administration, Annual Energy Review 2011 at 185-218 (Sept. 2012), *available at* http://www.eia.gov/totalenergy/data/annual/pdf/aer.pdf.

[79] Institute for Energy Economics and Financial Analysis, *EIA: 2016 Will Mark Biggest U.S. Coal Production Decline on Record* (May 11, 2016), *available at* http://ieefa.org/eia-2016-will-mark-biggest-u-s-coal-production-decline-record/.

a projected 682 million tons for 2016.[80] Last month, the government projected coal would account for roughly 31% of the nation's electricity needs to natural gas' 33.9% in 2016, but the latest projections have coal providing roughly 30.5% of generation to natural gas' 34%.[81]

As such, the amount of coal used for electricity generation in the U.S. has sunk to a 45-year low and has fallen by 29% from its peak in 2007. From 2001 through 2013 the percentage of U.S. electricity generation from natural gas increased by 53% and wind and solar energy increased from 0.2% to 4% nationally. Not included in these figures is the electricity generated by distributed solar electricity such as from rooftop solar panels. In 2014 there were 8,500 MWs of distributed generating capacity compared to 10,000 MWs installed at larger solar power plants. During the same timeframe, generation from coal in the U.S. declined by 22%.

V. THE IMPACTS OF COAL MINING

Despite federal laws passed in the 1970s that stopped some of the worst practices and put in place protections, coal mining on federal lands – and the resulting combustion of that coal – continues to result in long-term damage to the soil, water, air, climate and wildlife. The major direct impacts of surface mining – the primary method used to extract most federally leased coal, particularly in the arid west –are massive disturbances of large areas of land and disruption of surface and groundwater patterns. Other significant impacts include emissions of fugitive dust and other air pollutants, carbon pollution emissions, disposal of overburden/waste rock, and water pollution. The disturbances have both immediate and long term impacts on people and wildlife populations.

Impacts on Land Resources[82]

Surface coal mining severely alters the landscape, disrupting virtually all ecological and aesthetic elements of the landscape and reducing the value of the natural environment in the mined area and surrounding land. Strip mining destroys the genetic soil profile, eliminates existing vegetation, displaces or destroys wildlife and habitat, and to some extent permanently changes the general topography of the area mined. This often results in a scarred landscape with no scenic value. Soil disturbance results in conditions conducive to erosion. Soil removal from the area to be mined alters or destroys many natural soil characteristics and reduces its biodiversity and productivity for revegetation and agriculture. Paleontological, archeological, cultural, and other historic features and values may be endangered due to the disruptive activities of mining coal.

[80] *Id.*
[81] *Id.*
[82] Much of this description of environmental impacts is taken from Mark Squillace, THE STRIP MINING HANDBOOK at Ch. 2 and Ch. 4 (Common Problems), *available at* https://sites.google.com/site/stripmininghandbook/. For a review of the environmental impacts of coal development, from mine to power plant, *see* Clean Air Task Force, CRADLE TO GRAVE: THE ENVIRONMENTAL IMPACTS FROM COAL (June 2001), *available at* http://www.catf.us/resources/publications/files/Cradle_to_Grave.pdf.

Impacts on Water Resources[83]

Surface coal mining adversely affects surface water and groundwater. Coal beds often contain underground aquifers, which are dewatered or destroyed during mining, which in turn leads to lowering of water levels in adjacent areas and changes in flow direction within aquifers. Other adverse impacts include contamination of usable aquifers below mining operations due to infiltration (percolation) of poor-quality mine water as well as increased infiltration of precipitation on spoil piles, which can result in increased runoff of poor-quality water and erosion from spoil piles, recharge of poor-quality water to shallow groundwater aquifers, and poor-quality water flow to nearby streams. Infiltration may contaminate both groundwater and nearby streams for long periods.

Deterioration of stream quality results from acid mine drainage, toxic trace elements, high content of dissolved solids in mine drainage water, and increased sediment loads discharged to streams. When coal surfaces are exposed, pyrite comes in contact with water and air and forms sulfuric acid, which moves into waterways during precipitation events. Also, waste piles and coal storage piles can yield sediment, acid, and toxic trace elements to streams that can harm wildlife. Surface waters may be rendered unfit for agriculture, human consumption, bathing, or other household uses.

Open-pit mining requires large amounts of water for coal preparation plants and dust suppression. To meet this need, mines acquire (and remove) surface or groundwater supplies from nearby agricultural or domestic users, which reduces the productivity of these operations or halts them. These water resources, once separated from their original environment, are rarely returned after mining, presenting flow harms for wildlife and harming other water uses. This can be a significant problem in places like the arid west, which comprise the vast majority of federal coal leasing.

Impacts on Wildlife Resources[84]

Surface mining of coal causes direct and indirect damage to wildlife. The impact on wildlife stems primarily from disturbing, removing, and redistributing the land surface. Some impacts are short-term, and confined to the mine site; others have far-reaching, long-term effects. The most direct effect on wildlife is destruction or displacement of species in areas of excavation and spoil piling. Pit and spoil areas are not capable of providing food and habitat for most species of wildlife. Mobile wildlife species like game animals, birds, and predators leave these areas. More sedentary animals like invertebrates, reptiles, burrowing rodents, and small mammals may be destroyed. The community of microorganisms and nutrient-cycling processes are upset by movement, storage, and redistribution of soil.

Degradation of aquatic habitats is a major impact by surface mining, and may be apparent many miles from a mining site. Sediment contamination of surface water is common with surface mining. Sediment yields may increase to a thousand times their former level as a result of strip mining. The heaviest sediment pollution of a drainage normally comes within 5 to 25 years after

[83] *See* note 82.
[84] *See* note 82.

mining. In some areas, unreclaimed spoil piles continue to erode even 50 to 65 years after mining.

The effects of sediment on aquatic wildlife vary with the species and the amount of contamination. High sediment levels can kill fish directly, bury spawning beds, reduce light transmission, alter temperature gradients, fill in pools, spread stream flows over wider, shallower areas, and reduce production of aquatic organisms used as food by other species. These changes destroy the habitat of valued species, and may enhance habitat for less-desirable species.

Impacts on Big Game

A recent study detailing population trends of big game and greater sage-grouse in Southeast Montana and Northeast Wyoming, which is the heart of federal coal leasing, found big game not faring well.[85] Studying trends starting in the 1980s and continuing through 2012 and 2013, the report demonstrates the vulnerability of mule deer, pronghorn antelope, and sage-grouse populations in the area to events like habitat fragmentation and climate change that are being exacerbated by federal coal mining.[86] The report specifically cites "human development" as causing "additional impacts" on the species in this area.[87] The impacts the study examines include coal mining and habitat conversion.[88]

The study finds that both mule deer and pronghorn antelope in the Powder River Basin have "shown declines in population size or productivity or both in the past 32 years."[89] For example, of eight mule deer herds examined, only one was found to be in good condition, three in fair condition, and half in poor condition. The report concludes that "[mule deer] populations are especially vulnerable to additional habitat loss or degradation."[90] Similarly, of twelve pronghorn herds examined, none received a good rating. The rest were either fair or poor and one could not be rated for lack of data.[91] At-risk herds were again determined to be "especially vulnerable to loss of habitat."[92]

This report demonstrates that big game and other wildlife populations in the area are vulnerable to the impacts of coal leasing, both directly from mining but also from indirect and cumulative impacts such as coal rail transport and climate change. Declines in habitat have direct impacts on local economies. Nearly 11 million tourists travel through Montana annually, largely driven by recreation and wildlife-watching opportunities. Visitors to Montana support over 38,000 jobs

[85] John Ellenberger and A. Eugene Byrne, *Population Status and Trends of Big Game and GreaterSage-Grouse in Southeast Montana and Northeast Wyoming* (Jan. 2015) at 3 (attached hereto).
[86] *Id*. at 3
[87] *Id*.
[88] *Id*.
[89] *Id*. at 4.
[90] *Id*.
[91] *Id*. at 6.
[92] *Id*.

and generate $3.9 billion to the state economy. In Wyoming, tourism created 31,510 jobs and totaled $3.33 billion in revenue.[93]

Impacts on Air Quality

Substantial air emissions arise from every stage of coal fuel cycle that have impacts on wildlife: from coal mining to transportation to combustion. These emissions significantly impact air quality at local, regional, and global scales. The harms caused by these emissions on the climate, the environment, and human health are widely documented.[94]

Air pollution from coal mining comes from the engines driving mining equipment, from mine construction and development activities,[95] and from the transportation of coal away from the mine pit.[96] As discussed in more detail below, coal mining emits greenhouse gases (GHGs) via the release of such gases in coal deposits, the release of carbon sequestered in plant matter, and exhaust from the many engines used.[97] Fugitive emissions are a major source of air pollution from coal mining.[98] The air pollutants released by surface coal mines include:

- **Carbon Dioxide (CO_2).** Carbon dioxide is released in great quantities from the burning of fossil fuels and is an important GHG. A 2012 EPA inventory of industry-reported emissions shows that coal mines nationwide release the equivalent of nearly 28 million metric tons of carbon dioxide annually, as much as 8 coal-fired power plants.[99]
- **Methane.** Methane is the naturally occurring product of the decay of organic matter as coal deposits are formed. Methane is a GHG with more than 25 times the heat-trapping effect of carbon dioxide over a hundred year period.[100]

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[93] National Wildlife Federation and Natural Resources Defense Council, *Losing Ground Energy Development's Impacts on the Wildlife, Landscapes, and Hunting Traditions of the American West* (Nov. 2015) at 11, *available at* https://www.nrdc.org/sites/default/files/wil_15111601a.pdf.

[94] *See, e.g.*, Center for Health, Environment & Justice, *The Health Impacts of Mountaintop Removal Mining*, *available at* http://www.chej.org/wp-content/uploads/MTR_Mining_Final_April_18_2013.pdf; Synapse Energy Economics, Inc., *The Hidden Costs of Electricity: Comparing the Hidden Costs of Power Generation Fuels (Hidden Costs)*, *available at* http://www.civilsocietyinstitute.org/media/pdfs/091912%20Hidden%20Costs%20of%20Electricity%20report%20FINAL2.pdf.

[95] Fugitive dust emissions are increased by the removal of vegetative cover, hauling and stockpiling of topsoil, construction of haul roads, excavation and blasting of coal seams and overburden, displacement of overburden, and hauling of coal. Storage and handling of coal generates dust at rates which can be 3 kilograms (kg) per metric ton of coal mined, with the ambient dust concentration ranging from 10 to 300 micrograms per cubic meter (above the background level) at the mine site. Multilateral Investment Guarantee Agency, World Bank Group, *Coal Mining and Production*, *available at* http://www.miga.org/documents/CoalMiningandProduction.pdf.

[96] Synapse Energy Economics, *Hidden Costs*, *supra*.

[97] *Id.*

[98] Fugitive emissions are unintended emissions of any type (including carbon dioxide and methane) that arise during the production of coal. Fugitive emissions are released from the coal and surrounding rock strata when previously trapped methane and carbon dioxide gas are released into the atmosphere as coal seams are mined. *See* International Council of Mining and Metal, *Fugitive Methane Emissions in Coal Mining* (Aug. 2011), *available at* http://www.icmm.com/news-and-events/fugitive- emissions-and-climate-change.

[99] U.S. Environmental Protection Agency, Facility Level Information on Greenhouse Gases Tool (FLIGHT), 2012 Greenhouse Gas Emissions from Large Facilities, *available at* http://ghgdata.epa.gov/ghgp/main.do.

[100] U.S. Environmental Protection Agency, Overview of Greenhouse Gases, Methane Emissions, https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

- **Nitrogen dioxide (NO_2).** A poisonous gas that reacts with sunlight to form ozone, nitrogen dioxide forms from blasting at surface coal mines, which creates poisonous orange clouds. According to a petition filed by environmental groups, in Wyoming alone, the amount of nitrogen dioxide released by strip mining equals the amount normally released by 1.12 million passenger vehicles.[101]
- **Particulate matter (PM).** During the coal mining process, PM originates from: use of haul roads; wind erosion of overburden, exposed areas, and coal piles; bulldozing; blasting a drilling; draglines; loading and dumping overburden and coal; conveyors and transfers; and transportation of coal on conveyors, trains, and trucks.[102] In the U.S., coal mines release more than 17,000 tons of PM annually, including more than 10,000 tons of PM less than 2.5 microns in diameter, the most dangerous form of particulates.[103]
- **Volatile organic compounds (VOCs).** VOCs are gases that react with sunlight to form ground-level ozone, the key ingredient of smog. Coal mines nationwide release more than 1,790 tons of VOCs every year.[104]

Tribal Impacts

In addition, NWF has significant concerns about the environmental and cultural impacts of mining to our tribal partners. We have worked with the Northern Cheyenne Tribe, and many other tribes, for over a decade to prevent the development of the largest proposed coal mine in the U.S., the Otter Creek Mine. The threat of this mine to tribal communities is immense and is dramatically amplified by the fact that mining companies are subject to a low royalty rate and that federal lands are opened up to new coal development prior to the companies meeting their obligations for reclamation of existing mines. Taxpayers should not be left on the hook for the costs of mine cleanup, nor should tribes and other Americans suffer the brunt of new mines before existing mines are reclaimed.

VI. IMPACTS ON CLIMATE

It is virtually undisputed that carbon pollution from the extraction, use and combustion of fossil fuels is causing warming global temperatures leading to accelerating climate change. In 2014, the Intergovernmental Panel on Climate Change (IPCC) released its Fifth Assessment Report,

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[101] Earthjustice, Press Release, Coal Mines Clouding America's Air: *Lawsuit filed against EPA to protect public health, safety, and the climate from coal mine air pollution* (Nov. 23, 2011), *available at* http://earthjustice.org/news/press/2011/coal-mines-clouding-america-s-air; *see* WildEarth Guardians, Center for Biological Diversity, the Environmental Integrity Project, and Sierra Club, Petition for Rulemaking Under the Clean Air Act to List Coal Mines as a Source Category and to Regulate Methane and Other Harmful Air Emissions from Coal Mining Facilities Under Section 111 (filed with the U.S. Environmental Protection Agency June 16, 2010) at 13-14, *available at* http://www.wildearthguardians.org/Portals/0/support_docs/Petition_Coal_Mine_6_16_10.pdf.

[102] New South Wales Office of Environment and Heritage, *NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining* (June 2011) at 151-194, *available at* http://www.epa.nsw.gov.au/resources/air/KE1006953volumeI.pdf.

[103] Earthjustice, Press Release, *Coal Mines Clouding America's Air: Lawsuit filed against EPA to protect public health, safety, and the climate from coal mine air pollution*, *supra*.

[104] Earthjustice, Press Release, *Coal Mines Clouding America's Air: Lawsuit filed against EPA to protect public health, safety, and the climate from coal mine air pollution*, *supra*; *see* WildEarth Guardians et. al, Petition for Rulemaking Under the Clean Air Act to List Coal Mines as a Source Category and to Regulate Methane and Other Harmful Air Emissions from Coal Mining Facilities Under Section 111, *supra*, at 12-13.

stating that "[w]arming of the climate system is unequivocal," and that "[h]uman influence on the climate system is clear."[105] "[M]ore than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in [greenhouse gas ("GHG")] concentrations."[106] Furthermore, between 1970 and 2010, "CO_2 emissions from fossil fuel combustion and industrial processes contributed about 78% to the total GHG emission increase."[107] As detailed below, the potential impacts from climate change are immense and threaten wildlife and communities globally. Of fossil fuels, coal accounts for the greatest amount of carbon pollution from its extraction and use. In the United States, a significant amount of those coal emissions can be traced to federally leased coal.

The costs of these emissions are immense: increased droughts, floods, forest fires, coastal erosion, threats to water supplies and many other impacts. Currently, these costs are not being accounted for in leasing decisions or being borne by the coal companies responsible for them.

The single greatest cause of increasing global temperatures is emissions resulting from the combustion of fossil fuels such as coal.[108] Coal is one of the dirtiest fossil fuels in terms of contributing to the GHGs that are causing climate change. Scientists estimate that in order for worldwide emissions to stay below a level that will push the earth above 2 degrees Celsius of warming – a threshold world leaders have agreed is too dangerous to cross – 95% of U.S. coal reserves will have to remain undeveloped.[109] In Paris, world leaders agreed to aspire to keep warming below a safer target of 1.5 degrees Celsius. To achieve these needed reductions, the President has made clear that he intends to lower U.S. emissions by up to 28% by 2025.[110] On August 3, 2015, the Environmental Protection Agency finalized a rule – the Clean Power Plan – intended to reduce the emissions of GHGs from the power sector, primarily by demanding reductions in coal consumption.[111] While these rules are being challenged in court, it is almost certain federal policies will continue to move our power sector away from coal.

Climate change poses a direct threat to wildlife and communities. With a warming world comes habitat shifts, and many wildlife species are finding themselves without a home and many species could go extinct. 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.[112] 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.[113] Due to irreversible changes, fish like trout are already

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[105] Intergovernmental Panel on Climate Change, *Climate Change 2014: Synthesis Report* (*IPCC Report*) (Nov. 2014) at 2, 4, *available at* http://ar5-syr.ipcc.ch/ipcc/ipcc/resources/pdf/IPCC_SynthesisReport.pdf.
[106] *Id*. at 48.
[107] *Id*. at 4.
[108] *Id.* at 39.
[109] Christophe McGlade and Paul Ekins, *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, NATURE, Vol 517 (Jan. 8, 2015) at 189.
[110] White House, FACT SHEET: U.S. Reports its 2025 Emissions Target to the UNFCCC, https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc.
[111] 80 F.R. 64661(Oct. 23, 2015).
[112] IPCC Report, Observed Change, http://nca2014.globalchange.gov/report/our-changing-climate/observed-change
[113] NWF, *Wildlife in a Warming World*, *supra*.

disappearing from streams, big game populations such as moose are being pushed out of their historic range, and duck and wetland habitats are vanishing.[114]

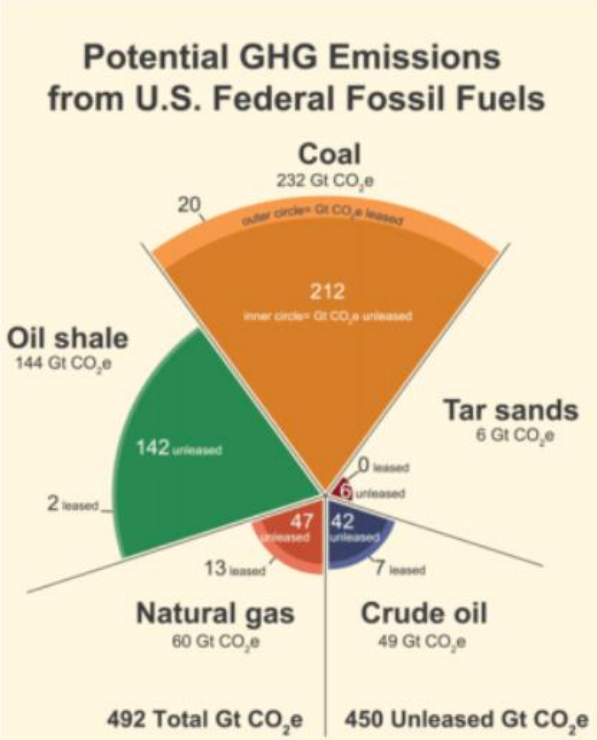

Figure 1. Potential emissions of leased and unleased federal fossil fuels. [115]

Climate change is also affecting many areas directly impacted by federally leased coal mining. According to the U.S. National Climate Assessment, climate change impacts the Great Plains region, including the Powder River Basin area, by causing "more frequent and more intense droughts, severe rainfall events, and heat waves."[116] As acknowledged by a recent Draft Environmental Impact Statement on the proposed and now rejected Tongue River Railroad, Montana has already "experienced a warming trend in the past five decades, and annual average maximum temperatures have increased by 1.4°F."[117] This trend is expected to continue:

> Across Montana, hot summer temperatures (those at the 90th percentile) could rise by 4.8 to 5.0°F in moderate and high GHG concentration scenarios from 2025

[114] Lisa A. Eby, Olga Helmy, Lisa M. Holsinger and Michael K. Young, *Evidence of Climate-Induced Range Contractions in Bull Trout* Salvenius confluentus *in a Rocky Mountain Watershed, U.S.A.*, PLOS: ONE (June 2014), *available at* http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0098812.

[115] Chart from Ecoshift Consulting et al., *The Potential Greenhouse Gas Emissions from U.S. Federal Fossil Fuels* (August 2015) at Fig. 1, *available at* http://www.ecoshiftconsulting.com/wp-content/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf

[116] U.S. National Climate Assessment, *Climate Change Impacts in the United States*, (May 2014) at 442, *available at*, http://s3.amazonaws.com/nca2014/high/NCA3_Climate_Change_Impacts_in_the_United%20States_HighRes.pdf?download=1.

[117] Surface Transportation Board, Draft Environmental Impact Statement (DEIS) (April 2015) at 5.3-5, *available at* http://www.stb.dot.gov/decisions/readingroom.nsf/fc695db5bc7ebe2c852572b80040c45f/e7de39d1f6fd4a9a85257e2a0049104d?OpenDocument.

> to 2050, relative to the 1950 to 2005 period. Cold winter temperatures (those at the 10th percentile) are projected to increase by 3.8 to 4.5°F in moderate and high GHG concentration scenarios over 2025 to 2050, relative to the 1950 to 2005 period.[118]

Likewise, in western Montana and the northwestern United States, "warmer and drier conditions have helped increase the number and extent of wildfires …. Higher temperatures and drought stress [] contribut[e] to outbreaks of mountain pine beetles that are increasing pine mortality."[119] Climate change also threatens western fisheries by "increas[ing] disease and/or mortality in several iconic salmon species,"[120] as well as "lead[ing] to increasing fragmentation of remaining habitats and accelerated decline" of Montana's native Bull trout.[121] To reduce other stressors, fishing restrictions during periods of high water temperatures are being put in place for trout fisheries like the Bitterroot, Blackfoot, and Clark Fork Rivers due to warm water conditions. The average number of days each year that are thermally stressful for trout has nearly tripled in Montana's Madison River since the 1980s.[122] Closures of these popular fishing locations during summer vacations can have major economic implications. The fishing opportunities in Yellowstone National Park, where there have also been closures, are valued at between $67.5 and $385 million annually.[123]

Energy development on public lands, particularly the coal program, is responsible for as much as 21% of all America's greenhouse gas emissions in 2012 originated from coal, oil and gas extracted from public lands.[124] As the Secretary's order notes, the federal coal program accounts for a substantial share of those emissions – 10% of total US greenhouse gas emissions according to the order.

BLM has only recently begun to disclose the amount of carbon pollution associated with its coal leasing decisions and take steps toward analyzing the consequences of those emissions. It is important for the American people to have an understanding of how their resources are contributing to climate change and how the managers of those resources, the federal government, are working to reduce the impact on the climate over time.

In 2014, the National Wildlife Federation estimated that the CO_2 emissions from burning the coal leased under nine leases in the Powder River Basin would be equivalent to about 250 coal-fired power plants working non-stop for ten years. Additional proposals on public lands in Colorado, Utah, West Virginia, and Alaska would add an additional one billion tons of CO_2 to

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[118] *Id*. (citation omitted).
[119] U.S. National Climate Assessment, *supra*, at 495.
[120] *Id*. at 491.
[121] Bruce E. Reiman et al., *Anticipated Climate Warming Effects on Bull Trout Habitats and Populations Across the Interior Columbia River Basin*, 136 TRANSACTIONS AM. FISHERIES SOC'Y 1552 , 1552 (2007).
[122] NWF, *Wildlife in Hot Water*, at 8.
[123] *Id*.
[124] Ecoshift Consulting et al., *The Potential Greenhouse Gas Emissions from U.S. Federal Fossil Fuels* (August 2015) at 7, *available at* http://www.ecoshiftconsulting.com/wp-content/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf, *citing* Stratus Consulting, *Greenhouse Gas Emissions from Fossil Energy Extracted from Federal Lands and Waters* (2014), *available at* http://wilderness.org/sites/default/files/FINAL%20STRATUS%20REPORT.pdf.

the atmosphere, equivalent to bringing 31 coal-fired power plants online. This would make the total impact of burning leased coal would be the addition of over 10.5 billion tons of CO_2 released.[125]

Additionally, a report commissioned by the Wilderness Society in 2012, updated in 2014, that details the carbon emissions from fossil fuel extraction on federal lands, and how these emissions compare to the ability of federal lands to absorb carbon. The report found that CO_2 emissions in 2012 generated from energy development on public lands could make up almost 21% of all U.S. greenhouse gas emissions – equal to the annual emissions from more than 280 million cars.[126]

A recent study has concluded that introduction of higher royalty rates would reduce carbon dioxide emissions of coal even with demand side policies, like the Clean Power Plan, in place.[127] This would be in part due to the induction of substitution of lower carbon emitting fuel and energy sources for coal.[128] The study finds significant reductions in CO_2 emissions with the imposition of royalty rates that internalized carbon pollution costs by reflecting the social cost of carbon in the royalty rate.[129] While scenarios vary depending on demand side policy, with strong CPP implementation a carbon adder to royalty rates as low as 20% of the SCC could further lower carbon emissions by between 59 and 25 million metric tons in 2020 and by 39 and 10 million metric tons in 2030 depending on CPP implementation schemes.[130] The reason for the larger near term increase in emissions reductions is that the increased costs of coal will speed near term investment in lower carbon fuel sources including renewables.[131] The effects of a royalty rate increase without the CPP is also quite substantial. If the CPP is not implemented, a royalty rate at or equal to 100% of the SCC would result in carbon emission reduction equal to 70% of those that would have been achieved by the CPP as currently designed.[132]

VII. RECLAMATION AND BONDING

While not administered by BLM, the Surface Mining Control and Reclamation Act of 1977 (SMCRA),[133] is critical to addressing chief shortcomings in the mining of federally leased coal. As such, coordination with the Office of Surface Mining and Reclamation and Enforcement (OSM) regarding failures in SMCRA regulation and enforcement must be a central component of BLM's and DOI's effort to reform the federal coal leasing program. Failing to coordinate in this manner will not achieve needed reforms and be a much wasted opportunity. This is

[125] National Wildlife Federation, *Issue Brief: Accounting for Carbon Pollution from Coal Mining on Federal Lands* (2014) at 3-4, *available at* http://www.nwf.org/~/media/PDFs/Global-Warming/Policy-Solutions/2014/nwf_issue_briefs_layout_web.pdf.
[126] Stratus Consulting, *Greenhouse Gas Emissions from Fossil Energy Extracted from Federal Lands and Waters: AN Update* (Prepared for: The Wilderness Society, Washington D.C. 2014) at 11, *available at*. http://wilderness.org/sites/default/files/Stratus-Report.pdf.
[127] Spencer Reed and James H. Stock, *Federal Coal Leasing Reform Options: Effects on CO2 Emissions and Energy Markets, Executive Summary* (Feb 2016) at 1, *available at* http://www.vulcan.com/MediaLibraries/Vulcan/Documents/FedCoalLeaseModelResults_ExecutiveSummary_Vulcan_FINAL_16Feb2016.pdf
[128] *Id*.
[129] *Id*. at 4.
[130] *Id*. at 4 and 6.
[131] *Id*. at 6.
[132] *Id*. at 8.
[133] 30 U.S.C. § 1201 *et seq*.

particularly true regarding significant failures regarding mine site reclamation and bonding to secure that reclamation.

SMCRA establishes federal standards for the regulation of coal mining in order to protect natural resources from its impacts. The overriding purpose of SMCRA is to make mine operators conduct their operations in a way that will avoid environmental and public health injury, and to restore the land after mining to its pre-mining condition.[134] SMCRA allows states "to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations."[135] Using the federal standards as a guide, each state may propose a state regulatory program to control surface coal mining on private and state lands. The federal OSM must approve any state program that meets or exceeds the federal standards (therefore, the federal standards are an appropriate benchmark against which a state program can be measured). States with approved programs, such as Wyoming and Montana, can also enter into cooperative agreements with OSM to carry out their programs on federal lands as well.[136]

In a state with an approved regulatory program, an operator's obligations are determined by state law, state regulations, and a state-issued permit – which must be at least as stringent as the respective federal standards under SMCRA – and the state is responsible for enforcing these obligations.[137] OSM provides oversight of each state's implementation of its regulatory program by conducting mine inspections, reviewing permits issued by the state regulatory agency, analyzing state coal mining data, and evaluating whether regulatory programs are meeting statutory and regulatory requirements.

SMCRA regulates the environmental impacts and reclamation of ongoing and new mines through a prescriptive set of performance standards[138] as applied to a specific operation through a permit system.[139] The underlying premise of these standards is that coal mining serves as only a temporary land use and that mine operators must restore the land to the same or better use than before mining. These performance standards set levels of environmental damage that are deemed unacceptable and, in some cases, they actually tell the operator how a mining operation must be conducted to protect the environment. The mine operator's performance is intended to be guaranteed through a system of monitoring and inspections,[140] penalties for failing to comply with performance standards and permit requires,[141] and a performance bond.[142]

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[134] 30 U.S.C. § 1202; s*ee also* Mark Squillace, THE STRIP MINING HANDBOOK at Ch.1, *available at* https://sites.google.com/site/stripmininghandbook/.

[135] 30 U.S.C. § 1253. Congress intended that the states would have the primary governmental responsibility for regulating surface mining and ensuring reclamation because of the diversity in terrain, climate, biologic, chemical, and other physical conditions in areas subject to mining operations. All of the major coal states have received federal approval of their state programs. However, a federal program was implemented in Tennessee when citizen groups uncovered serious problems with the state's administration of surface mining controls. Today, Tennessee remains the only significant coal mining state with a federal program.

[136] U.S. Office of Surface Mining Reclamation and Enforcement, 2006 REPORT TO THE PRESIDENT AND CONGRESS at 10 (Oct 1, 2006), *available at* http://www.osmre.gov/resources/reports/2006.pdf.

[137] *See National Wildlife Federation v. Lujan*, 928 F.2d 453 (D.C. Cir. 1991) (Wald, concurring, at note 1).

[138] 30 U.S.C. §§ 1265-1266.

[139] *Id*. §§ 1256-1264.

[140] *Id*. § 1267.

[141] *Id*. § 1268.

[142] *Id*. §§ 1259, 1269.

In summary, SMCRA requires the mine operator to:

- Minimize disturbances to the hydrologic system by avoiding acid mine drainage and preventing additional contributions of suspended solids (sediments from erosion) to nearby streams and other water bodies.
- Reclaim the land as soon as practicable after the coal has been extracted, and even as the mining operation moves forward.
- Restore the affected land to a condition capable of supporting the uses it could support before mining, or to "higher or better uses."
- Restore the approximate original contour (AOC) of the land by backfilling, grading, and compacting.
- Establish a permanent vegetative cover in the affected area.

These – and some 15 other performance standards for, among others, wildlife protection, road construction and maintenance, and disposal of excess spoil material – apply to all surface mines.[143]

Key among SMCRA's requirements is that reclamation occur and that reclamation obligations be backed by bonding.[144] SMCRA prohibits surface coal mining where reclamation is "not feasible."[145] Companies must submit a "reclamation plan"[146] that demonstrates reclamation can be accomplished.[147] Mining operators must, *inter alia*, restore the land "to a condition capable of supporting the uses which it was capable of supporting prior to any mining," restore "the approximate original contour of the land," and minimize disturbances to surface and ground water systems.[148]

SMCRA also requires that mining companies file "a bond for performance" before being permitted to mine, in order to assure that reclamation will occur.[149] Performance bonds must "be [in an amount] sufficient to assure the completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture[.]"[150] The three major types of bonds are corporate surety bonds, collateral bonds (cash, certificates of deposit, first-lien interests in real estate, etc.) and self-bonds (legally binding corporate promises, available only to permittees who meet certain financial tests).[151] Regulatory authorities (states) have discretion as to whether to allow self-bonding, so long as self-bonding "achieve[s] the objectives and purposes of the bonding program," which is to ensure that the regulatory authority has funding to perform

[143] *See id*. § 1265; 30 C.F.R. Part 816.
[144] Bonding is also required under the MLA. Under the MLA, before the BLM issues a coal lease, the lessee must furnish a bond in an amount determined by the agency to ensure compliance with the terms and conditions of the lease. At a minimum, a bond is required that will cover one-fifth of the bonus bid if there is any remaining unpaid balance, as well as one year of advance rental and one-quarter year of estimated royalties if the lease is in production.43 C.F.R. Part 3470.
[145] 30 U.S.C. § 1202(c).
[146] *Id*. § 1258(a).
[147] *Id*. § 1258(a)(5).
[148] *Id*. § 1265(b)(2), (3), and (10).
[149] *Id*. § 1259(a).
[150] *Id*.
[151] 43 C.F.R. § 3474.1.

reclamation should the mine company walk away.[152] States do not have to permit self-bonding, and OSM can withdraw or not approve state programs that do not adequately provide assurances in instances of self-bonding.[153]

Reclamation generally proceeds in three phases, which correspond to the three phases of bond release: (1) backfilling and grading; (2) revegetation; and (3) full reclamation under the standards of SMCRA. Each phase has certain criteria that must be met before part of a bond is released.

Federal law and related state laws require reclamation to begin as contemporaneously as practicable.[154] Contemporaneous reclamation promotes environmental protection of land and water resources by: minimizing the length of time lands are disturbed, maintaining stable, non-eroding mine sites; reducing fugitive dust from unvegetated areas; and helping to achieve productive post-mining land uses.[155] Specific requirements vary from state to state, but are generally similar to the federal law outlining the phases of bond release.

At the final stage of a mining operation, the permitting agency releases operators from the bond. Release of the bond releases the operator from any responsibility imposed by SMCRA for damages from the mining operation. Thus, the regulatory agency should not release a bond unless operators have reclaimed the mined land in accordance with the terms of their permits and in the manner required by the applicable federal and state laws.

Another aspect of reclamation is restoration of water resources, including surface and groundwater hydrology. SMCRA requires coal operators to: assure the protection of the quality and quantity of surface water systems from the adverse effects of mining; restore the recharge capacity of the mined area to approximate pre-mining conditions; and, in Western states, preserve the essential hydrologic functions of most alluvial valley floors.[156] Where they cannot assure that the quantity of water will be protected, surface mine operators must provide an alternative water source.[157] Since coal seams serve as aquifers in much of the western United States, such as in the Powder River Basin, demonstrating the ability of water (both pre-mining quality and quantity) to return to mined lands can be the most difficult reclamation requirement.

Due to concerns over water, Montana law provides for a fourth phase of reclamation and bonding, focusing exclusively on restoration of the hydrologic balance.[158] To achieve Phase IV

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[152] 30 U.S.C. § 1259(c).

[153] Under applicable regulations, if a state allows self-bonding, the applicant demonstrate solvency be meeting certain criteria: having an "A" rating or higher for its most recent bond issued by either Moody's Investor Service or Standard and Poor's Corporation; a tangible net worth of at least $10 million, a ratio of total liabilities to net worth of 2.5 times or less, and a ration of current assets to current liability of 1.2 times or grater; or the applicants fixed assets in the United States total at $20 million and the application has a ratio of total liabilities to net worth of 2.5 times or less, and a station o current asses to current liabilities of 1.2 times or greater. 30 C.F.R. §§ 800.23(b)(3) and (d).

[154] 30 C.F.R. § 816.100.

[155] Western Organization of Resource Councils, *Coal Mine Reclamation and Bonding Fact Sheet* (May 2011), *available at* http://www.worc.org/userfiles/file/Coal/Coal_Mine_Reclamation_&_Bonding.pdf.

[156] Mark Squillace, THE STRIP MINING HANDBOOK at Ch. 7 (Participating in Bond Release Proceedings), *available at* https://sites.google.com/site/stripmininghandbook/

[157] *Id*. at Ch. 5 (Reviewing a Permit Application).

[158] Montana Rule 17.24.1116, *available at* http://www.mtrules.org/gateway/ruleno.asp?RN=17.24.1116.

bond release in Montana, an entire drainage must meet all reclamation standards, including restoration of the hydrologic balance. In arid eastern Montana, this final stage is critical to the long-term productivity of mined land for wildlife, agriculture, recreation, and other uses.[159] Reclamation has been a failure under SMCRA and bonding is not adequate to protect the public from companies non-compliance with reclamation requirements. This is especially true where self-bonding is at issue and financially broke coal operators can not make good on their bonding obligations.

According to a report by NWF and partners, of 450 square miles of disturbed land in Montana, Wyoming and North Dakota, only 46 square miles have achieve Phase III bond release demonstrating successful establishment of vegetation and soils to satisfy permit requirements for post mining land uses.[160] Broken down by state, only 6% of disturbed acres in Wyoming have achieved Phase III bond release, just under 10% in Montana, and slightly over 20% in North Dakota. Wyoming has almost five times the amount of disturbed lands as Montana, and well over twice the amount of disturbed land as North Dakota.[161]

Surface coal mining is an extraordinarily destructive process. Although SMCRA requires that land be reclaimed contemporaneously with mining, the alarmingly weak financial state of coal companies mining federal coal raises serious questions about the companies' capacity to fulfill reclamation requirements. Currently, in nine states, reclamation self-bonds can be secured by assurances or assets that may not be available in the event of a reclamation claim.

Even for reclaimed sites, the true value of these lands compared to pre-mining conditions is questionable. While some sites may achieve vegetation coverage – the type of vegetation needed that is essential to support pre-mining – native habitats may take decades to become re-established. For example, reclaiming mined lands to sagebrush habitat for sage grouse may take between 15-60 years to develop native shrub communities comparable to pre-mining conditions.[162]

Indeed, due to challenges of restoring native habitat in the arid west, no mined areas have been able to reclaim pre-mining conditions – topography is gentler, shrub density lighter, and water balance is changed.[163] Soil storage is often a problem, with nutrients leaking from soils and/or becoming deposited within nutrient hot spots on soil storage sites. The result is that when soil is reapplied to mining sites, areas are either too nutrient rich or too nutrient poor to support native vegetation, and the vegetation fails.[164] Non-natives and invasions are often primed to outcompete native plants, and weeds will quickly establish themselves on mined areas. Even in areas where natives are planted and take hold, the overall diversity of plants do not match pre-mining conditions, lessening habitat quality.[165]

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[159] Western Organization of Resource Councils, *Coal Mine Reclamation and Bonding Fact Sheet* (May 2011), *available at* http://www.worc.org/userfiles/file/Coal/Coal_Mine_Reclamation_&_Bonding.pdf.
[160] Bonogofsky, et al., *Undermined Promise II*, *supra* at 4.
[161] *Id*. at 7.
[162] *Id*. at 5.
[163] *Id*. at 25
[164] *Id*. at 26-28.
[165] *Id*. at 28-29.

Water balance on sites is also extremely difficult to reclaim. Groundwater tables are often disturbed and lowered, impacting stream flow and timing, drying up wetland areas, and reducing water availability for plants. Coal mining also can cause long term water pollution and sediment issues.[166] With climate change altering hydrological cycles and resulting in conditions favorable for invasives, the challenge of establishing pre-mining conditions gets steeper.

Again, these failures are exacerbated and made more urgent by the precarious position self-bonding has put the public in, with underwater companies no longer likely good for their bonds. According to a recent survey, more than $3.6 billion in self-bonding obligations were reported by states.[167] The state with by far the highest amount of reclamation obligations backed by self-bonded was Wyoming (63% of bonds for a total of $2,138,201,079), where a vast amount of federal coal resides. Other states with federal coal, like Colorado (57% of bonds for a total of $117,000,000 in obligations), have a substantial amount of reclamation obligations backed by self-bonding.

It is important to note that many of these self-bonds are held by subsidiaries of companies, like Arch Coal and Peabody Energy Company, that do not themselves even qualify for self-bonding by virtue of their current insolvency and financial woes.[168] While these subsidiaries are technically structured in a manner that does qualify them for self-bonding, the fact they are backed by insolvent parents demonstrates how tenuous this bonding structure is. With parent companies in bankruptcy, it is highly unlikely the subsidiary companies will be able to fulfill the obligations of their self-bonds, as has been indicated in recent bankruptcy filings. In essence, assets – which have likely proved overvalued particularly as companies' worth has crashed – are obligated first to creditors, with little to none left over to satisfy bonding obligations. This means that the taxpayers are at extreme risk of being left holding the bag for high reclamation and clean-up costs.

RECOMMENDATIONS

In light of the above overview of the federal coal leasing program and the needs to reform it, NWF makes the following recommendations for issues that need to be examined during the PEIS and measures that need to be taken to appropriately protect wildlife from the impacts of the leasing of federal coal:

- **Purpose and need.** In order to properly arrive at alternatives that will address the current shortcomings of the federal coal leasing program, it is critical that BLM and DOI set forth the purpose and need of the PEIS so as to reflect the public need to protect wildlife, ensure mining occurs in a manner that is compatible with the spirit and requirements of the law, ensure reclamation occurs, ensure the public is protected and receives fair

[166] *Id*. at 29-30.
[167] Interstate Mining Compact Commission, Self-bonding Survey, *available at* http://imcc.isa.us/Self%20Bonding%20Survey.pdf.
[168] For examples, at the end of 2014 before declaring bankruptcy, Arch Coal had a ratio of total liabilities to net worth of 4.05 and Peabody had a ratio of total liabilities of net worth of 3.84, both well in excess of the permitted equal to or less than 2.5. Similarly, Peabody's reported self-bonding has exceeded 25% of its net worth repeatedly since at 2003 (e.g., 37.9% in 2003, 37.9% in 2004, 30.8% in 2005, 26.4% in 2006, 25.8% in 2012, 34.6% in 2013, and 49.9% in 2014. Bonogofsky, *Undermined Promise II*, *supra* at 15 & 17.

compensation for the use of its resource, ensure a just transition for communities as coal use declines, and achieve the climate reduction goals needed to meet domestic and international carbon reduction goals. The purpose and need must, therefore, address the following concerns:

  - Whether, where, when and how to lease federal coal to best meet the needs of all Americans.
  - Whether adjustments are needed in order to provide a fair return to the American public.
  - How best to protect wildlife, habitat and other natural resources from the impacts of coal mining.
  - How best to assess the climate impacts of federal coal production and combustion.
  - How to ensure that coal mines operating under current and future leases comply with environmental protection and reclamation requirements
  - Whether the current coal program adequately accounts for externalities including environmental, climate, economic and social impacts.
  - The degree to which federal coal should support fulfilling the energy needs of the United States and the role of coal exports.

- **Integration with other critical agencies, particularly OSM.** Many of the failings the federal coal leasing program cannot be fully addressed without cooperation with and action from other agencies, particularly OSM. We urge BLM to make this reform process a cross-agency effort that comprehensively addresses all of the aspects of federal coal mining.
- **Ensure that federal coal mining is compliant with existing law before permitting new or expanded leasing.** The PEIS should examine and recommend implementation of a federal coal leasing framework that establishes an inter-agency management approach to ensure that coal companies operating under current or new federal coal leases bring their operations into full compliance with the SMCRA, the Clean Water Act and other environmental requirements governing coal mining and development as well as BLM's mandates under the MLA, the Federal Land Policy Management Act and other statutes. Any company not in compliance with both the spirit and letter of these laws should be prohibited from receiving new or extended federal coal leases until it achieves compliance.
- **Fix coal reclamation before opening up more land to coal mining.** For decades, the federal coal program has opened up large areas of the arid west for mining. The requirements of existing law promise and require that land, water, and habitat be protected in the siting and operation of the mines, and fully reclaimed to demonstration standards after mining concludes. While it is primarily the job of the OSM and the states to regulate how coal mining and reclamation occur on federal lands, BLM should work with these sister agencies to ensure lands and waters are properly protected. As such, before BLM opens up more new coal leases for development, it should require that it be demonstrated by that reclamation is occurring contemporaneously and providing land reclaimed at a higher and better use and that water quality and water resources are protected, even if this means that new rules are promulgated under SMCRA to provide more assurances that reclamation and reclamation enforcement occur.

- **End the practice of leasing to companies that are self-bonded**. While allowed in some states, the financial woes of the coal industry make the practice of self-bonding extremely risky and greatly increase the likelihood that the public will be left holding substantial mine clean-up costs. It is critical that the public not be left responsible for these costs. As such, BLM should not allow leases for companies that are not adequately bonded by a third party surety, even if relevant states allow for such bonding. However, it is important that bonding reforms that can be made now to better protect the public from the liabilities of failed reclamation move forward now and not wait for or depend upon the PEIS or reform process.
- **Modernize the federal coal royalty system and increase rates to ensure a fair public return for the publicly held resource.** The mineral royalties system is out of date, out of touch, and inequitable. The current rate of 12.5% serves as a below market subsidy that must be ended. It is also inconsistent with what federal offshore mineral royalty rates are set at, 18.75%. In many of the western states that BLM assesses the rate of 12.5% for oil, gas and coal produced on federal land parcels, the states themselves charge significantly higher rates ranging from 16-19% for the energy resources on state parcels. Moreover, due to manipulations of the system, many coal companies are paying effective rates that far below 12.5%. This structure must be modernized and adjusted to match comparative fair market rates and ensure a maximum return of revenue to the taxpayers for the value of their resources. It must also be adjusted to internalize significant costs being borne by the public-at-large. Loopholes allowing companies to escape high royalty rates by manipulating the sale price through less than arms' length transactions need to be closed, as reflected by the recent rule change by the Office of Natural Resources Revenue.
- **Ensure an open and transparent leasing process and end lease-by-application.** Lease decisions must be open, transparent and competitive. The practice of LBA must be ended, and leases must occur pursuant to five years plans that are consistent with the goals of protecting wildlife, natural resources, achieving successful reclamation and meeting carbon reduction goals.
- **Mining should not occur in unsuitable lands or environmentally sensitive lands.** BLM should work with sister agencies to more appropriately determine areas that are unsuitable for mining and prohibit leases for mining in unsuitable areas, particularly those that cannot be reclaimed and those that are especially environmentally sensitive or have special habitat value. This includes areas where the hydrological balance cannot be restored to pre-mining conditions. BLM should also identify areas where coal development should be avoided due to high conflicts with wildlife and fisheries, water, air and protected lands, and amend resource management plans to exclude them from future leasing.
- **Underfunded needs can be helped by adjusting the federal coal royalty rate.** The proceeds of royalty rates should be used to enhance the public lands assets we all value. These include hunting, fishing, recreation and maintenance of our public lands. There are more than 37 million hunters and anglers in America who spend nearly $50 billion a year in these activities. More broadly, the Outdoor Industry Association reports that the broader outdoor recreation economy generates more than $600 billion in direct consumer spending and supports more than 6 million jobs. Public lands are treasured and heavily used by hunters, anglers, wildlife watchers, outdoor enthusiasts. Given their importance

to national and regional economies, these uses deserve to have their public lands – Americas' public lands – adequately managed, maintained, and funded.

- **Federal coal program must be consistent with federal carbon reduction policy and goals, like the Administration's Climate Action Plan, and properly internalize the costs of carbon pollution to industry**. The Obama Administrations has put forth a bold climate initiative aimed to aggressively reduce greenhouse gas emissions to levels that scientists tell us we must by aiming for carbon pollution reductions of between 26-28% by 2025. In December of last year, the U.S. made international commitments to achieving worldwide reductions that will limit warming to below 2 degrees Celsius with an aspirational goal of not exceeding warming of 1.5. degrees Celsius. Two degrees Celsius is the level of warming scientists have told policy makers is the amount of warming the earth can likely occur without triggering the most calamitous impacts of climate change. 1.5 degrees is considered a safer and more prudent level, especially for lower lying areas, but harder to achieve. The federal coal program must be reformed so as to in sync with these goals. The Federal coal program can no longer be divorced from the nation's climate policy. To align the federal coal leasing program with climate goals, BLM and DOI should:
    - Properly account for the carbon pollution impacts from coal mining by looking at the cradle to grave emissions from coal.
    - Manage the federal coal program to strategically reduce the production of coal to help achieve reduction of associated greenhouse gas emissions by 26-28% below 2005 levels by 2025 through five-year leasing plans.
    - Develop quarterly estimates of all greenhouse gas emissions associated with the extraction, transport, and consumption of federal coal to serve as basis for future decisions regarding the federal coal program and report the carbon emissions and impacts for all agency leasing decisions.
    - Fully analyze the true life-cycle impacts of greenhouse gas emissions from federal coal leasing and development. Protocols should be established to consider upstream and downstream impacts for methane and carbon including monetizing the impacts using the EPA's social cost of methane and the Interagency Working Group's social cost of carbon methodologies.
    - Include stipulations in every lease, permit and plan of operations to require mines to capture or offset methane releases.
    - Ending substitution analyses that do not add up.
    - Once the costs of carbon pollution from coal mining have been assessed, incorporate these costs into coal royalty rates so as to internalize the carbon pollution costs to the lessee companies.
- **The federal coal program must be reformed to allow from a just transition to cleaner sources of energy.** With the future of coal declining and the market for coal drying up, it is important that the federal coal leasing program take into account the concerns of communities that will be most impacted by the shift away from coal. This means, as recommended above, protecting resources these communities must depend on long-term, like water. It means ensuring that the destruction from coal mines is cleaned up and mine sites are reclaimed. BLM should identify regional mitigation strategies to avoid, minimize, and when unavoidable, compensate for resource impacts at regionally-selected mitigation sites. The mitigation strategy should include identifying areas that are

sources or sinks for carbon. BLM should further direct funding and revenue decisions should be made in a manner that assists these communities in a shift to a healthy, prosperous and just post-coal economy.

CONCLUSION

We thank the Secretary for the opportunity to offer comments on this important leasing reform process and look forward to further engagement with DOI as this process moves forward.

Respectfully,

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