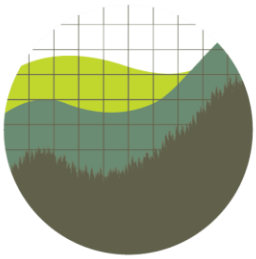

Institute *for*
Policy Integrity
NEW YORK UNIVERSITY SCHOOL OF LAW

June 10, 2019

VIA ELECTRONIC SUBMISSION

Attn: Bureau of Land Management, Department of Interior

**Re: Comments on BLM's Draft Environmental Assessment: Lifting the Pause on the Issuance of New Federal Coal Leases for Thermal (Steam) Coal, DOI-BLM-WO-WO2100-2019-0001-EA**

The Institute for Policy Integrity at New York University School of Law[1] respectfully submits these comments to the Bureau of Land Management (BLM) on its draft Environmental Assessment (EA) for "Lifting the Pause on the Issuance of New Federal Coal Leases for Thermal (Steam) Coal."[2] Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decision-making through advocacy and scholarship in the fields of administrative law, economics, and public policy.

Policy Integrity's comments explain that the EA is deficient for several reasons:

- **The EA wrongly implies that BLM has no authority to continue the pause on coal leasing.** BLM's implication that it cannot pause coal leasing is false and perplexing in light of the lengthy history of prior Interior leasing moratoria. BLM's mistaken view of its authority under federal law may have resulted in a truncated NEPA analysis that fails to analyze reasonable alternatives.

- **The EA fails to analyze a range of reasonable alternatives and mischaracterizes the "no action" alternative.** The EA analyzes only two alternatives, which in BLM's characterization, are identical save for a two-year delay between them. BLM also fails to analyze the feasible alternative of finishing the programmatic environmental impact statement (PEIS) that was in progress and adopting one or more of the reforms enumerated in Interior's Scoping Report that would have measurably reduced greenhouse

[1] No part of this document purports to present New York University School of Law's views, if any.
[2] BUREAU OF LAND MANAGEMENT, ENVIRONMENTAL ASSESSMENT: LIFTING THE PAUSE ON THE ISSUANCE OF NEW FEDERAL COAL LEASES FOR THERMAL (STEAM) COAL (May 2019) [hereinafter "EA"].

gas (GHG) emissions. Further, BLM fails to properly define and analyze the "no action" alternative.

- **BLM's assumption that the two alternatives it analyzes in this EA have identical environmental effects, including GHG emissions, is likely wrong in light of option value and other changes between 2017 and 2019.** BLM fails to account for option value and other significant potential changes between March 2017 and March 2019 that could affect greenhouse gas emissions and other environmental impacts. BLM also fails to conduct an energy substitution analysis, and fails to account for the differences in energy substitution analysis between 2017 and 2019.

- **BLM failed to quantify upstream and transportation emissions from the eight pending lease applications, rendering its analysis incomplete.** BLM's reasoning for excluding the upstream and transportation-related emissions of the eight pending leases that it processed between March 2017 and 2019 is flawed, as there are available tools and methodologies that BLM has used in the past to do exactly this type of analysis.

- **BLM fails to properly evaluate the environmental effects of reviving the entire federal coal program, and must prepare an EIS because these effects are significant.** Although Interior's decision restarts the coal leasing program responsible for approximately 40 percent of all U.S. coal production, the EA attempts to minimize the effects of the federal action by focusing on only three coal leases and eight pending leases between April 2018 and March 2019. The EA does not provide the depth of analysis on potentially affected resources that is required by NEPA. BLM must prepare an EIS to properly conduct this analysis.

- **BLM fails to use the Social Cost of Carbon to monetize emissions**. As explained further in the joint comments filed by Policy Integrity and other groups in this proceeding, BLM should take the simple step of monetizing GHG emissions by using the Interagency Working Group (IWG) social cost of greenhouse gases metric. Placing a dollar value on climate damages provides more information and valuable context than simply comparing emissions with the total greenhouse gas emissions of the entire country.

Each of these points is discussed in more detail, below.

## I. Federal Coal Mining Is at the Discretion of BLM, and BLM's Statements to the Contrary Call into Question the Adequacy of Its NEPA Analysis.

The EA's statement that Interior has no authority to pause coal leasing is false, and calls into question whether the agency has fully complied with NEPA.

BLM states in the EA: "This statutory and regulatory framework does not provide explicit authority to pause BLM's leasing of federal coal deposits."[3] BLM goes on to make other statements that strongly imply that it views its coal leasing obligation as non-discretionary. Because of this mistaken view of its legal authority, BLM may not have fully evaluated feasible alternatives, as it is required to do under NEPA. In fact, BLM has clear statutory discretion to pause coal leasing, including during preparation of a programmatic environmental impact statement (PEIS), and has done so on several prior occasions.

The Secretary of the Interior has broad discretion under the Mineral Leasing Act with respect to when, how, and whether federal coal leases may be offered.[4] Mineral Leasing Act section 201 authorizes the Secretary of the Interior to "*in his discretion*, upon the request of any qualified applicant or on his own motion, *from time to time*, offer such lands for leasing."[5] The MLA further states that the Secretary may lease coal as he or she finds "appropriate and in the public interest."[6] The federal coal program is explicitly at the discretion of the Secretary, who can pause leasing, curtail the issuance of leases, and impose a variety of conditions on leasing and production. Similar to coal, the MLA provides the Secretary with broad discretion with respect to leasing oil and gas on federal lands, stating: "All lands subject to disposition under this chapter which are known or believed to contain oil or gas deposits *may be leased* by the Secretary."[7]

Federal courts have held that Interior has clear discretion to not lease fossil fuel tracts, as well as to issue pauses on all leasing. In 1965, in *Udall v. Tallman*, the Supreme Court held that an application for a federal oil and gas lease is a hope or expectation, not a right, and the Secretary may, in the exercise of his statutory discretion, reject any application.[8] More than a decade later, in *Krueger v. Morton*, the U.S. Court of Appeal for the D.C. Circuit held that the Secretary had legal authority to suspend issuance of coal prospecting (or exploration) permits, and to reject pending prospecting applications, while it studied and reconsidered the federal coal program.[9]

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[3] EA at 1.
[4] 30 U.S.C. § 201(a)(1); *see* Arnold v. Morton, 529 F.2d 1101, 1105-1106 (9th Cir. 1976); WildEarth Guardians v. Salazar, 783 F. Supp. 2d 61, 63 (D.D.C. 2011); *see also* U.S. Department of the Interior, Secretarial Order No. 3338 at 6 (Jan. 15, 2016).
[5] 30 U.S.C. § 201(a)(1) (emphasis added).
[6] *Id*.
[7] 30 U.S.C.A. § 226 (a) (emphasis added).
[8] 380 U.S. 1, 4 (1965).
[9] Krueger v. Morton, 539 F.2d 235, 240 (D.C. Cir. 1976).

In fact, Interior has paused coal, oil, and natural gas leasing on multiple occasions previously. Interior placed a moratorium on federal coal leasing that lasted from May 1971 to 1981, due to concerns with speculation, nonproductive leases, and lack of a clear regulatory framework. During that timeframe, Congress passed two new statutes governing the federal coal program, and BLM conducted a programmatic review of the federal coal leasing program, culminating in a PEIS, to establish a new regulatory structure for coal leasing.[10] After adopting multiple reforms, Interior lifted the moratorium in 1981. In 1973, Interior Secretary Morton also imposed a moratorium on all new coal prospecting (exploration) permits for existing leases, citing section 201(b) of MLA, pending the reconceptualization of the coal program.[11] The D.C. Circuit upheld the pause on exploration permits in *Krueger*.[12]

In 1979, Interior Secretary Andrus issued a moratorium on all new oil and gas leasing on acquired lands within military reservations, while BLM studied the "controversy over noncompetitive oil and gas leasing generally and the procedures used in leasing acquired military and naval lands in particular."[13] In 1999, Interior Secretary Babbitt put in place an eighteen-month moratorium on offshore drilling in regions off the California coast pending further scientific study on the effect of more leases.[14] Owing to a California ban on offshore drilling in state coastal waters and opposition to coastal infrastructure, no federal lease sales off the California coast have taken place since 1984.[15] And in 2010, following the Deepwater Horizon oil spill, Secretary Salazar issued a six-month moratorium on all deepwater oil and gas leasing, permitting, and production in the Outer Continental Shelf.[16]

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[10] In 1979, BLM published the Final Programmatic Environmental Statement Federal Coal Management Program. 44 Fed. Reg. 42584. The result of this effort provided the framework for a largely revised coal leasing program, including guidance for the administration of existing leases, the processing of Preference Right Lease Applications, and the review of federal lands to determine unsuitability for certain types of mining. The new final regulations established standards and procedures for determining when, where, and how to lease federal coal (principally through competitive sales under a regional leasing program). INTERIOR, FEDERAL COAL PROGRAM, PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT – SCOPING REPORT, Vol. I, (Jan. 2017) at 5-6 [hereinafter, "Scoping Report"].

[11] SEC'Y OF THE INTERIOR, Order No. 2952, 38 FED. REG. 4682 (Feb. 17, 1973); *see also* 30 U.S.C. § 201(b).

[12] Krueger v. Morton, 539 F.2d 235, 240 (D.C. Cir. 1976).

[13] Oil and Gas Leasing; Noncompetitive Leasing of Acquired Military and Naval Lands, 44 FED. REG. 64,085 (Nov. 6, 1979).

[14] *See* Jane Kay, *Babbitt Delays Offshore Drilling*, SF GATE (Nov. 13, 1999), https://www.sfgate.com/news/article/Babbitt-delays-offshore-drilling-3058671.php.

[15] Keith Schneider and Tony Barboza, *California Offshore Drilling Could Be Expanded for the First Time Since 1984 Under Federal Leasing Proposal*, LOS ANGELES TIMES (Jan. 4, 2018), https://www.latimes.com/nation/la-na-offshore-drilling-20180104-story.html; *see also* Cal. Assembly Bill No. 1775 (Sept. 8, 2018) (prohibiting the leasing of California state waters for new construction of oil and gas-related infrastructure).

[16] DEP'T OF THE INTERIOR, MINERALS MGMT. SERV., NTL No. 2010-N04, Notice to Lessees and Operators of Federal Oil and Gas Leases in the Outer Continental Shelf Regions of the Gulf of Mexico and the Pacific to Implement the Directive to Impose a Moratorium on All Drilling of Deepwater Wells (2010), https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/MORATORIUM_NTL.pdf (citing 30 C.F.R. § 250.172(b) ("[T]he Regional Supervisor may grant or direct a suspension when activities pose a threat of serious, irreparable, immediate harm or damage, this would include a threat to life, property,

In January 2016, former Interior Secretary Jewell imposed a moratorium on new coal leasing pending preparation of a PEIS for the federal coal program in order to consider "how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation's energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts."[17] Jewell's Secretarial Order 3338 found that "[c]ontinuing to conduct lease sales or approve lease modifications during this programmatic review *risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal*."[18] And even in the present administration, in 2019, Secretary Bernhardt declared his intent to impose a one-year moratorium on leasing within in the 10-mile perimeter surrounding the Chaco Culture National Historical Park while BLM drafts its Resource Management Plan for the area and Congress considers the Chaco Cultural Heritage Area Protection Act.[19] In short, over the last half century, Interior Secretaries appointed by both political parties have issued moratoria and pauses on fossil fuel leasing for various lengths of time.

The EA's implication that BLM has no authority to continue the pause on coal leasing is false and misleading. Interior previously placed a moratorium on coal leasing between 1971 and 1981, while it conducted a PEIS, and other examples abound. If the agency believed that continuing the moratorium was not possible, as it implies in the EA, this misguided belief may have tainted BLM's analysis of viable alternatives besides resuming the coal program as quickly as possible. Indeed, the manner in which BLM conducted the alternatives analysis in this EA, including by failing to consider the alternative of continuing the pause until the PEIS is completed, strongly suggests that BLM has a mistaken view of its authority under federal law, resulting in a truncated NEPA analysis that fails to properly assess the effects of its major federal action.

## II. The EA Fails to Analyze a Range of Reasonable Alternatives and Mischaracterizes the "No Action" Alternative.

NEPA requires agencies to review a range of reasonable alternatives in EAs as well as EISs.[20] Without substantive, comparative environmental impact information regarding

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mineral deposit, or marine coastal or human environment."); 30 C.F.R. 250.106 (requiring safe lease operations)).

[17] SEC'Y OF THE INTERIOR, ORDER NO. 3338, DISCRETIONARY PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT TO MODERNIZE THE FEDERAL COAL PROGRAM 8 (Jan. 15, 2016), https://www.eenews.net/assets/2016/01/15/document_gw_04.pdf [hereinafter, "Sec. Order 3338"].

[18] *Id*. (emphasis added).

[19] Press Release, Sen. Heinrich, *Heinrich Secures Commitments from Interior Secretary to Protect Chaco Canyon* (May 28, 2019), https://www.heinrich.senate.gov/press-releases/heinrich-secures-commitments-from-interior-secretary-to-protect-chaco-canyon.

[20] 40 C.F.R. § 1508.9.

other possible courses of action, an EA or EIS cannot inform agency deliberation or facilitate public involvement, in derogation of NEPA's purposes.[21]

BLM's EA evaluates only two alternatives. And in BLM's characterization, these two alternatives are nearly identical and result in identical environmental effects, save for a two-year delay between them. Part III, below, explains why BLM's assumption that the two alternatives have identical environmental effects, including GHG emissions, is highly questionable and likely wrong.

While there is no hard rule on the number of alternatives that an agency must analyze in an EA or EIS in order to meet NEPA requirements, the scope of the alternatives analysis should align with the scope of the contemplated federal action. The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a "hard look" by the agency, and thereby to permit informed public comment on the proposed action and any choices or alternatives that might be pursued with less environmental harm.[22] Agencies are required to consider alternatives in both EAs and EISs and must give full and meaningful consideration to all reasonable alternatives.[23]

Here, BLM analyzed only two very similar alternatives, which, in BLM's estimation, would have identical environmental effects. BLM could have assessed a number of viable alternatives that would have resulted in fewer, or different, environmental effects than its chosen course of action. By failing to analyze even one alternative that would result in different environmental effects, such as lower GHG emissions, BLM neglects NEPA's requirements.[24]

BLM also failed to analyze a feasible and obvious alternative: finishing the PEIS and adopting one or more of the possible reforms enumerated in Interior's Scoping Report for the PEIS for the federal coal program, released in January 2017.[25] The reforms enumerated in the PEIS Scoping Report include several viable, substantive changes to the federal coal leasing program that Interior identified for further consideration after years of public "listening sessions" and comment opportunities, Secretarial Order 3338, and a robust Notice of Intent that identified areas in need of evaluation, including fair return and climate change effects.[26] The Scoping Report homes in on several reforms that would lead to

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[21] *See* New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 708 (10th Cir. 2009).
[22] *See* 42 U.S.C. § 4332(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"); Te-Moak Tribe of W. Shoshone of Nevada v. U.S. Dep't of Interior, 608 F.3d 592, 601–02 (9th Cir. 2010); Lands Council v. Powell, 395 F.3d 1019, 1027 (9th Cir. 2005).
[23] Native Ecosystems Council v. U.S. Forest Serv., 428 F.3d 1233, 1245 (9th Cir. 2005); *see also* 40 C.F.R. § 1508.9(b).
[24] *See id*.
[25] INTERIOR, FEDERAL COAL PROGRAM, PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT – SCOPING REPORT, Vol. I, (Jan. 2017) [hereinafter, "Scoping Report"].
[26] BLM, NOTICE OF INTENT TO PREPARE A PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT TO REVIEW THE FEDERAL COAL PROGRAM AND TO CONDUCT PUBLIC SCOPING MEETINGS, 81 FED. REG. 17,720 (Mar. 30, 2016), *available at* https://eplanning.blm.gov/epl-front-office/projects/nepa/65353/79586/92248/Notice_of_Intent.pdf.

significant decreases in greenhouse gas emissions and other environmental effects from the federal coal program, and states that Interior will evaluate them through the PEIS. Among the potential reforms laid out in the Scoping Report that Interior planned to study and potentially adopt, are:

- Raising federal coal royalty rates (including by applying GHG emission "royalty adders"), which would reduce total GHG emissions and other environmental effects by lowering the total amount of federal coal produced;
- Ramping down federal coal production in order to reduce GHG emissions and other environmental effects;
- Leasing fewer coal tracts at a time in order to increase the return to taxpayers and reduce emissions and other environmental effects; and
- No new leasing of federal coal at all, with limited exceptions.[27]

Each of these reforms would significantly reduce GHG emissions, other air pollution, and other environmental effects relative to resuming the federal coal program without any reforms. BLM should analyze the option of continuing the pause on new coal leasing until the PEIS is completed and Interior adopts one or more of these reforms that would reduce GHG emissions, which it previously believed merited close consideration.[28]

In addition to analyzing too few alternatives, BLM's definition of the "no action" alternative is wrong. The no action alternative in an EA or EIS allows policymakers and the public to compare the environmental consequences of the status quo to the consequences of the proposed federal action.[29] The no action alternative is meant to provide a baseline against which alternative actions may be compared.[30]

The federal district court's order leaves no doubt that the relevant federal action for this NEPA analysis is the Zinke Order, which ended the coal leasing moratorium and the PEIS, and resumed the federal coal leasing program. The court states, "The Court has concluded that the Zinke Order constituted a major federal action. The Zinke Order constituted a NEPA triggering event."[31] It is clear that the Zinke Order lifting the pause on leasing is the proposed federal action.[32] The "no action" alternative, by contrast, is *continuing* the state of the world that existed before the federal action in question was taken.[33] Therefore, the "no action" alternative is maintaining the moratorium on new coal leasing at least until a PEIS is completed.

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[27] Scoping Report at 6-6 – 6-20.
[28] *See id*.
[29] Ctr. for Biological Diversity v. U.S. Dept. of Interior, 623 F.3d 633, 642 (9th Cir. 2010).
[30] *Id*.
[31] Citizens for Clean Energy et al. v. U.S. Department of the Interior et al., No. CV-17-30-GF-BMM, 2019 WL 1756296 (D. Mont. Apr. 19, 2019) at 27.
[32] *See id*. at 27, 19.
[33] *See, e.g.*, Pac. Coast Fed'n of Fishermen's Associations v. U.S. Dep't of the Interior, 929 F. Supp. 2d 1039, 1050 (E.D. Cal. 2013) ("'No action' in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting

BLM defines the "no action" alternative, however, as retaining the pause on leasing until March 2019, and then lifting the moratorium and reinstating the coal program with no changes. BLM misleadingly treats its previous, estimated deadline for completing the PEIS, March 2019, as a hard deadline for the duration of the pause on leasing. But this is an inaccurate characterization of the pause on coal leasing. The moratorium on new coal leasing was not set to automatically expire in March 2019; it was set to continue *at least* until completion of a PEIS for the federal coal program, and then Interior would decide whether, where, and on what terms, to reinitiate coal leasing. Secretarial Order 3338 expressed Interior's concern about locking coal production in for decades, "under current rates and terms that the PEIS may ultimately determine to be less than optimal."[34] The PEIS Scoping Report outlined BLM's plan for completing the PEIS, stating: "The BLM plans to release the Draft PEIS in January 2018. The BLM will incorporate public comments received on the Draft PEIS and prepare a Final EIS by January 2019, *with a Record of Decision to follow by March 2019*."[35] BLM tries to treat this March 2019 target date for a Record of Decision on the PEIS as a termination date for the pause on leasing. This is an arbitrary and capricious interpretation of the Scoping Plan.

The Zinke Order ended both the coal leasing moratorium and the PEIS that it was intrinsically tied to. This EA is the first NEPA analysis to be prepared in connection with lifting the moratorium. The "no action" alternative is keeping the moratorium in place at least until completion of a PEIS for the federal coal program. BLM fails to properly define and analyze the "no action" alternative.

## III. BLM's Assumption That the Two Alternatives It Analyzes in the EA Have Identical Environmental Effects Is Likely Wrong in Light of Option Value and Other Changes Between March 2017 and March 2019.

BLM's assumption that the two alternatives it analyzes in this EA have identical environmental effects, including GHG emissions, is highly questionable and very likely wrong. BLM assumes that there would be no difference in total GHG emissions and other environmental effects between lifting the pause in March 2017—the action it took—and March 2019 (the arbitrary deadline BLM sets in this EA for lifting the moratorium).[36] However, a lot can change in two years that could have affected BLM's assessment of the coal leases it analyzes in this EA, and of coal leasing in general, in 2019 versus 2017. The environmental effects of leasing and production, itself, are likely different given changes in mining and transportation technology, coal markets, and the broader energy market in which coal competes with renewable energy, natural gas, and other energy resources. BLM's failure to account for any of these differences between its alternatives renders its

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the proposed activity or an alternative activity to go forward.") (citing Council on Environmental Quality, Memorandum to Agencies Containing Answers to 40 Most Asked Questions on NEPA Regulations, 46 Fed. Reg. 18,026–01 (March 23, 1981));

[34] Sec. Order 3338.

[35] Scoping Report at 6-52 (emphasis added).

[36] EA at 19.

NEPA analysis insufficiently detailed, and deprives the public of a meaningful opportunity to weigh-in on the choices the agency had before it.[37]

BLM fails to account for the option value, or informational value of delay, of not leasing at all in March 2019, or leasing much less coal than it chose to lease in March 2017. Option value is the value of waiting for more information on energy prices, markets, environmental effects, or other factors before deciding whether, when, and on what terms to lease the public's non-renewable energy resources to private companies.[38] As the D.C. Circuit recently indicated with respect to offshore oil leasing, there is "a tangible present economic benefit to delaying the decision to drill," and failing to account for this value undervalues public resources.[39]

First, even if BLM never completed the PEIS for the coal program, the agency may not have leased an identical amount of coal in March 2019, and on identical terms, that it did in March 2017. Instead, BLM would decide whether or not to lease, how much to lease, and on what terms, including any environmental stipulations to place on the leases. BLM fails to account for the option, in March 2019, of leasing less coal, leasing with more stringent environmental stipulations (such as more methane capture), or waiting even longer to lease (beyond 2019) when better coal production, transportation, or combustion technology could be in place, all of which would have reduced GHG and other air pollution emissions relative to leasing and production in March 2017.

BLM also fails to account for option value corresponding to the uncertainty of future coal, natural gas, and other energy prices. Given changing energy resource prices and projections of future prices, BLM would very likely make different calculations about minimum bids and the amount of coal to lease in 2017 versus 2019. This, in turn, would affect the amount of GHG emissions emitted in each scenario. BLM ignores these differences, however, and treats the environmental effects as identical in each alternative scenario.

Second, had the PEIS been completed in March 2019 as originally planned, BLM would have been presented with a series of decisions on whether or not to lease, how much to lease, and on what terms, including environmental stipulations. By waiting until the completion of the PEIS, BLM would have had much more information on market conditions, technological developments, and environmental impacts—information generated by completing the PEIS. Yet in this draft EA, BLM fails to account for the option, in March 2019, of leasing less coal, leasing with more stringent environmental stipulations (such as more methane capture), or waiting even longer to lease (beyond 2019) when better coal production, transportation, or combustion technology could be in place, all of which would

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[37] *See* Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Engineers, 524 F.3d 938, 953 (9th Cir. 2008) (explaining the standard for EAs).

[38] Jayni Hein, PRIORITIES FOR FEDERAL COAL REFORM (Institute for Policy Integrity Report, 2016), NYU Law, *available a*t: https://policyintegrity.org/files/publications/Priorities_for_Coal_Reform.pdf.

[39] Center for Sustainable Economy v. Jewell, 779 F.3d 588, 610 (D.C. Cir. 2015).

have reduced GHG and other air pollution emissions relative to leasing and production in March 2017. This is a reasonable alternative that is entirely missing from this EA. The option to wait for more information to make better decision is valuable; BLM forecloses this value by assuming that all pending leases would automatically have been granted following completion of a PEIS, regardless of what information the PEIS generated.

***BLM also fails to conduct an energy substitution analysis, and fails to account for the differences in energy substitution analysis between 2017 and 2019.***

BLM did not conduct any energy substitution analysis in this EA, nor analyze the difference between the two alternatives with respect to energy substitution.

Recently, the U.S. Court of Appeals for the Tenth Circuit explained that it was irrational for BLM to fail to consider in its NEPA analysis how, if its action issuing a coal mine lease will increase the supply of coal, then the price for coal will also drop, demand will rise, and greenhouse gas emissions will increase.[40] Other federal courts have likewise mandated that agencies conduct proper energy substitution analysis.[41] Here, in its NEPA analysis, BLM appears to assume that all coal produced and consumed from these leases will be additional; that is, it will not displace any natural gas, renewable energy, energy conservation measures, or other resources in the energy market. But that is not how energy markets work in the real world. Ideally, BLM should conduct an energy substitution analysis that analyzes how the coal it leases and processes would interact in the energy market, displacing other energy resources and resulting in a net GHG emissions increase, as coal emits the most GHG emissions when burned compared to these energy substitutes.

Several models exist to assess substitution effects.[42] BLM should have used one of these models to conduct an energy substitution analysis, as other agencies routinely do, and as BLM itself has done in the past.[43] For instance, BLM used the MarketSim model in a

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[40] WildEarth Guardians v. BLM, 870 F.3d 1222, 1235 (10th Cir. 2017) ("this perfect substitution assumption [is] arbitrary and capricious because the assumption itself is irrational (i.e., contrary to basic supply and demand principles).").

[41] *See* Ctr. for Sustainable Economy v. Jewell, 779 F.3d 588, 609 (D.C. Cir. 2015) ("forgoing additional leasing on the [outer continental shelf] would cause an increase in the use of substitute fuels such as renewables, coal, imported oil and natural gas, and a reduction in overall domestic energy consumption from greater efforts to conserve in the face of higher prices"); Montana Envtl. Info. Ctr. v. U.S. Office of Surface Mining, 274 F. Supp. 3d 1074, 1098 (D. Mont. 2017) (holding that it was "illogical" for the agency to assume that choosing not to approve federal coal leases would have no effect on coal supply, demand, or consumption, because "other coal would be burned in its stead"); High Country Conservation Advocates v. United States Forest Service, 52 F. Supp. 3d 1174, 1197 (D. Col. 2014) (recognizing that increased production of coal could affect "the demand for coal relative to other fuel sources, and coal that otherwise would have been left in the ground will be burned" (quotation marks omitted)).

[42] *See generally* Peter Howard, THE BUREAU OF LAND MANAGEMENT'S MODELING CHOICES FOR THE FEDERAL COAL PROGRAMMATIC REVIEW (Policy Integrity Report, 2016), http://policyintegrity.org/publications/detail/BLM-model-choice (explaining the criteria for assessing the usefulness of different models to conduct substitution analysis).

[43] BOEM has used MarketSim to conduct substitution analysis of offshore oil and gas leases for several decades. BUREAU OF OCEAN ENERGY MGMT., DEP'T. OF INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT: LIBERTY DEVELOPMENT PROJECT at 4-50 (Aug. 2017) ("Liberty Development DEIS"); *see also* BUREAU OF OCEAN ENERGY

recent EIS,[44] perhaps in response to the Tenth Circuit's ruling that failure to consider energy substitution effects is irrational. Using one of these models would allow BLM to evaluate how coal leasing influences coal consumption and resulting emissions, including the substitution effects in the electricity sector.

BLM also fails to account for how the results of its energy substitution analyses would very likely have been different in 2019 as opposed to two years earlier. From the perspective of March 2019, leasing more coal may come more at the expense of renewable energy or conservation than it would have from the perspective of March 2017. In fact, Energy Information Administration (EIA) data supports this conclusion. EIA's 2017 Annual Energy Outlook, published January 2017 just before the moratorium was lifted in March 2017, projected that coal would rebound to be the main source of electricity, ahead of even natural gas, for several years around 2020, and even longer without the Clean Power Plan in place. Renewable energy did not overtake coal in the reference case from the 2017 Outlook until nearly 2030, and in the 2017 Outlook's No-Clean Power Plan scenario, renewable energy never overtook coal in the timeframe analyzed.[45] But by 2019, EIA's Annual Energy Outlook, published in January 2019, shows coal consistently out-competed by natural gas as an electricity source, and tied with renewable energy by the early 2020s.[46]

Thus, in 2019, if Interior were to lift the pause and lease more federal coal, this would lower coal prices prompt more coal demand, likely coming at the expense of even more renewable energy, natural gas, and conservation than the same coal would have displaced in the 2017 analysis. Basic principles of supply and demand predict that lowering the cost of supply of a commodity like coal will increase the supply of that product; that increasing the supply of coal will lower the market price of coal to the consumer; and that lowering the price will lead to increased consumer demand for and consumption of that commodity.[47] This, again, would result in different GHG emission effects in 2019 as compared to BLM's decision to lease in 2017.

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MGMT., PROPOSED FINAL OUTER CONTINENTAL SHELF OIL & GAS LEASING PROGRAM 2012-2017, 110 (2012) (calculating that if the offshore acreage were not leased, 6% of the forgone oil and gas would be replaced by energy conservation). *See generally* Amicus Brief of the Institute for Policy Integrity, WildEarth Guardians v. BLM, No. 15-8109, at pp.19-24 (10th Cir. Feb. 5, 2016), http://policyintegrity.org/documents/10th_Cir_BLM_Brief.pdf (detailing the history of BOEM's use of MarketSim).

[44] BLM, ALPINE SATELLITE DEVELOPMENT PLAN FOR THE PROPOSED GREATER MOOSES TOOTH 2 DEVELOPMENT PROJECT DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT (March 2018), Appendix H, https://eplanning.blm.gov/epl-front-office/projects/nepa/65817/127980/155727/Appendix_H-_BOEM_Greenhouse_Gas_Lifecycle_Model_Methodology.pdf.

[45] *See* U.S. ENERGY INFO. ADMIN, ANNUAL ENERGY OUTLOOK 2017, at 70, https://www.eia.gov/outlooks/archive/aeo17/pdf/0383(2017).pdf.

[46] *See* U.S. ENERGY INFO. ADMIN, ANNUAL ENERGY OUTLOOK 2019 at 92, https://www.eia.gov/outlooks/aeo/pdf/aeo2019.pdf.

[47] *See* N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 74–78, 80–81 (5th ed. 2008).

Each of these omissions in the EA described in this section renders it inadequate under NEPA. The EA fails to analyze many discrete differences in the environmental effects between the two alternatives. As the U.S. Court of Appeals for the Ninth Circuit has explained, "An agency, when preparing an EA, must provide the public with sufficient environmental information, considered in the totality of circumstances, to permit members of the public to weigh in with their views and thus inform the agency decision-making process."[48] Here, BLM's analysis omits several important differences between leasing in 2017 and 2019 that renders its analysis incomplete.

## IV. BLM Failed to Quantify Upstream and Transportation Emissions from the Eight Pending Lease Applications, Rendering Its Analysis Incomplete.

BLM also omits other important information from the EA that renders its analysis incomplete under NEPA.[49] BLM claims that it can quantify direct upstream, downstream, storage, and transportation-related emissions only for the three leases issued between March 2017 and March 2019. As for the eight pending leases that BLM continued to process during that timeframe, BLM claims that there is too much speculation to estimate their upstream and transportation-related emissions, and that it is not necessary to do so in the EA because the emissions from the eight pending leases would be insignificant.[50] BLM's reasoning for excluding the emissions of these pending projects is flawed, as there are available tools and methodologies that BLM has used in the past to do exactly this type of analysis. BLM fails to meet its obligations under NEPA by excluding this critical and easy-to-estimate information.[51]

### *Barring More Specific Information from the Coal Leasing Applicants, BLM Can and Must Make Reasonable Assumptions to Calculate Upstream and Transportation Emissions*

BLM can and must make reasonably accurate, useful estimates of upstream and transportation emissions for the eight pending leases.

First, BLM claims that there is too much speculation to estimate upstream and transportation-related emissions. However, BLM can and should ask the leaseholders about mining techniques they plan to use, as well as the intended or most likely destinations for the coal that is produced. BLM cannot claim that such information is

[48] Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Engineers, 524 F.3d 938, 953 (9th Cir. 2008) (internal citations omitted).
[49] *See id.*
[50] EA at 16.
[51] *See e.g.,* Jayni Hein, Jason Schwartz, Avi Zevin, PIPELINE APPROVALS AND GREENHOUSE GAS EMISSIONS, Institute for Policy Integrity Report (2019), https://policyintegrity.org/publications/detail/pipeline-approvals-and-greenhouse-gas-emissions; *see also* Policy Integrity et al., *Joint Comments on the Failure to Monetize Greenhouse Gas Emissions* (June 10, 2019) [hereinafter "Joint Comments"].

unavailable if it has not made any attempt to acquire it. The inquiries that an agency makes, or fails to make, are relevant to compliance with NEPA.[52]

Second, BLM already knows the exact location of these coal leases, as well as the amount of coal that they contain. Even in the absence of more specific information from applicants on the projects' environmental effects, BLM can and must make reasonable assumptions on the leases' upstream and transportation emissions in order to conduct a proper NEPA analysis. It is reasonable for BLM to assume that a new coal lease will extract all of the economically recoverable coal reserves over the mine's lifetime and that all extracted coal will be transported by diesel rail out of the state to power plants, where it will be burned to generate electricity.[53]

BLM has previously prepared estimates of upstream and downstream emissions associated with a coal mines based upon "maximum allowable coal recovery."[54] This methodology is not only useful for estimating downstream emissions, but upstream and transportation emissions, as well. BLM, along with the Office of Surface Mining Reclamation and Enforcement (OSMRE), acknowledged in a 2017 EA that "[u]ltimately, the actual produced, transported, and combusted coal would be dependent upon coal markets, alternative fuel markets (i.e., natural gas, tires, petcoke, industrial waste), and the coal supply at the mine," but stated that, "[f]or this [EA], a worst-case scenario of maximum allowable production limit of 1.3 million tons per year… and transport is assumed."[55] BLM should use this same "maximum allowable coal recovery" assumption with respect to the eight pending leases to estimate upstream and transportation emissions.

For upstream greenhouse gas emissions, reasonable average emission factors are available that can be used to estimate the quantity of greenhouse gases that will be directly emitted by coal production. EPA has a set of methods and emission factors that can be used to calculate the quantity of greenhouse gases emitted by coal mines and transportation that

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[52] Courts review agencies' NEPA compliance by "mak[ing] a pragmatic judgment whether the EIS's [or EA's] form, content *and preparation* foster both informed decision-making and informed public participation." Marsh v. Oregon Nat. Res. Council, 490 U.S. 360, 368 (1989) (emphasis added). *See also* Nat'l Audubon Soc'y v. Dep't of Navy, 422 F.3d 174, 185 (4th Cir. 2005) (stating that the "hard look" requirement "encompasses a thorough investigation into the environmental impacts of an agency's action..."); American Wild Horse Preservation Campaign v. Perdue, 873 F.3d 914, 931 (D.C. Cir. 2017) (finding that an agency's EA did not "accurately identif[y] the relevant environmental concern"—the effect of a boundary modification on the wild horse population—and instead took a "head-in-the-sand approach to past agency practice" which the court stated "is the antithesis of NEPA's requirement that an agency's environmental analysis candidly confront the relevant environmental concerns.").

[53] *See e.g.*, Jayni F. Hein and Peter Howard, ILLUMINATING THE HIDDEN COSTS OF COAL (Institute for Policy Integrity Report, 2016), *available at*: https://policyintegrity.org/files/publications/Hidden_Costs_of_Coal.pdf for estimates of transportation emissions. See EIA, Annual Coal Distribution Report (Nov. 2018), available at: https://www.eia.gov/coal/distribution/annual/ for details on the origins and destinations of U.S. produced coal.

[54] *See* BLM, KING II MINE ENVIRONMENTAL ASSESSMENT (2017) at 5.

[55] *Id*.

were developed to help industry meet its obligations for greenhouse gas reporting.[56] BLM need only consult these widely-used EPA tools to calculate estimated upstream emissions from the pending applications.

BLM can also make reasonable estimates for all of the leases' transportation emissions. In the EA noted above, BLM and OSMRE had information about the general destination of the coal, and used that to calculate transportation emissions.[57] But even absent more specific information, BLM can make reasonable assumptions about how the coal will be transported and its final destination, and therefore, total GHG and other air pollution emissions. Indeed, 90 percent of federal coal produced in Wyoming (the leading federal coal production state) is transported by freight rail out of the state. [58] And EIA's Annual Coal Distribution Report provides detailed information on where federal coal originates and is consumed.[59] BLM can then apply EPA's emissions factors for freight rail transport to the total estimated rail miles traveled.[60] BLM can use this information to calculate transportation emissions for all of the issued and pending leases. In fact, BLM has made transportation emissions estimates very similar to this in other EAs.[61]

BLM claims that all of the upstream and transportation emissions are insignificant without providing any estimates of these emissions.[62] However, as discussed above, by using available tools and methodologies, the agency can arrive at a reasonably accurate estimation of upstream and transportation GHG emissions. Without proving this information, the public cannot know whether these emissions are significant.

***BLM Must Include the Upstream, Downstream, and Transportation Emissions in the EA's Direct and Indirect Effects Analysis.***

The EA also excludes the downstream emissions for the eight pending leases in its discussion of direct and indirect environmental effects. Although BLM does eventually estimate downstream emissions from the eight pending leases, BLM reports these emissions only as part of the cumulative effects analysis.[63] However, upstream and downstream emissions from the pending coal leases are direct and indirect effects of the Zinke Order, respectively. Including them in the cumulative effects section, alone, obscures

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[56] U.S. ENVTL. PROTECT. AGENCY, U.S. Greenhouse Gas Inventory Annexes, Annex 3.3 and Annex 3.2, available at: https://www.epa.gov/sites/production/files/2015-12/documents/us_ghg_inv_annexes_1990-2007.pdf.
[57] BLM, KING II MINE ENVIRONMENTAL ASSESSMENT (2017) at 5.
[58] *Supra* note 51.
[59] EIA, ANNUAL COAL DISTRIBUTION REPORT (Nov. 2018), available at: https://www.eia.gov/coal/distribution/annual/ for details on the origins and destinations of U.S. produced coal.
[60] U.S. ENVTL. PROTECT. AGENCY, U.S. Greenhouse Gas Inventory Annexes, Annex 3.2, available at: https://www.epa.gov/sites/production/files/2015-12/documents/us_ghg_inv_annexes_1990-2007.pdf.
[61] *See* BLM, ENVIRONMENTAL ASSESSMENT FOR THE PEABODY TWENTYMILE COAL, LLC COC54608 LEASE MODIFICATION, Table 6; pp. 34-36(Dec. 2015), https://eplanning.blm.gov/epl-front-office/projects/nepa/41852/67560/73502/DOI-BLM-CO-N010-2014-044-EA.pdf.
[62] *See* EA at 16.
[63] EA at 20.

the significance of these emissions and is misleading to readers trying to understand the direct and indirect effects of the federal action.

## V. BLM fails to properly evaluate the environmental effects of reviving the entire federal coal program, and must prepare an EIS because these effects are significant.

Interior is restarting its coal leasing program, which is responsible for approximately 40 percent of all U.S. coal production. But the EA attempts to minimize the effects of the federal action by focusing only on three coal leases issued between April 2018 and March 2019.[64] However, the "hard look" NEPA standard requires BLM to conduct an analysis that is "appropriate to the action in question."[65] This EA does not provide the depth of analysis on potentially impacted resources that is required because it focuses far too narrowly on the effects of three leases, rather than evaluate the environmental effects of resuming the entire federal coal leasing program, which is the actual federal action at issue.

The federal district court's order leaves no doubt that the relevant federal action for this NEPA analysis is the Zinke Order, which ended the coal leasing moratorium and the PEIS, and resumed the federal coal leasing program.[66] Therefore, BLM must address *all* of the impacts of relaunching the federal coal leasing program versus continuing the moratorium, not simply the effect of approving three coal leases and processing eight applications two years earlier than it assumes it otherwise would have. BLM must assess the climate impacts from the entire coal program, because as the court made clear, the NEPA "triggering event" is lifting the moratorium on new coal leasing nationwide. BLM fails to analyze the environmental effects of this action, rendering its NEPA analysis deficient.

Further, the court left it to BLM to determine, in the first instance, whether an EIS was necessary, or whether an EA would suffice in order to meet its NEPA obligations. An EIS must be prepared if "substantial questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor."[67] Whether there may be a significant effect on the environment requires consideration of two broad factors: context and intensity.[68]

Because BLM is tasked with assessing the environmental effects of resuming the entire coal leasing program, the context of this review supports a more in-depth analysis in an EIS. Moreover, the scale and intensity of the environmental effects at issue warrant an

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[64] EA at 6.
[65] Metcalf v. Daley, 214 F.3d 1135, 1151 (9th Cir. 2000); Robertson v. Methow Valley Citizens Council, 490 U.S. at 350.
[66] Citizens for Clean Energy et al. v. U.S. Department of the Interior et al., No. CV-17-30-GF-BMM, 2019 WL 1756296 (D. Mont. Apr. 19, 2019) at 27.
[67] *See* Save Our Ten Acres v. Kreger, 472 F.2d 463, 467 (5th Cir. 1973); City of Davis v. Coleman, 521 F.2d 661, 673 (9th Cir. 1975).
[68] Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Engineers, 524 F.3d 938, 956–57 (9th Cir. 2008) (internal citations omitted).

EIS. The direct and indirect climate pollution caused by federal coal mining is significant. BLM administers 88 billion tons of publicly-owned coal across 570 million acres of public land. Mining federal coal accounts for approximately 40% of all U.S. coal production, and, according to the U.S. Geological Survey, resulted in approximately 735 million metric tons of carbon dioxide combustion emissions in 2014, more than 13 percent of all U.S. carbon dioxide pollution in that year.[69] BLM can and must, at minimum, provide for estimated national GHG and other air pollution emissions from coal leasing each year from March 2017 into the foreseeable future, including all upstream, downstream, and transportation-related emissions. BLM must also provide information on other environmental effects, including habitat effects, water use and pollution, surface disruption and subsidence, and more. The size, scope, and complexity of these environmental effects warrants an EIS.

BLM must also properly assess the effects of the Zinke Order combined with other connected and cumulative actions. The Tenth Circuit has explained,"[o]ne of the primary reasons for requiring an agency to evaluate 'connected actions' in a single NEPA analysis is to prevent the agency from minimizing the potential environmental consequences of a proposed action (and thus short-circuiting NEPA review) by segmenting or isolating an individual action that, by itself, may not have a significant environmental impact."[70]

The NEPA regulations define connected actions as those which:

(i) Automatically trigger other actions which may require environmental impact statements.
(ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
(iii) Are interdependent parts of a larger action and depend on the larger action for their justification.[71]

The NEPA regulations state that connected actions are "closely related and therefore should be discussed in the same impact statement."[72] The Zinke Order is the "larger action" that is the driving force behind all other federal coal leasing. It triggered all of the federal coal leasing since March 2017, including all future coal leasing that is pending and/or contemplated by Interior.

Moreover, approval of federal coal mining often facilitates the mining of additional state- and privately-owned coal, given the geology and locations of coal mines that often span multiple jurisdictions.[73] The Zinke Order is, or will be, the driving force behind

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[69] U.S. GEO. SURVEY, FEDERAL LANDS GREENHOUSE GAS EMISSIONS AND SEQUESTRATION IN THE UNITED STATES: ESTIMATES FOR 2005–14, https://pubs.er.usgs.gov/publication/sir20185131.
[70] Citizens' Committee to Save our Canyons v. U.S. Forest Service, 297 F.3d 1012, 1029 (10th Cir. 2002).
[71] 40 C.F.R. 1508.25.
[72] *Id*.
[73] *See, e.g*., BLM, ENVIRONMENTAL ASSESSMENT FOR THE PEABODY TWENTYMILE COAL, LLC COC54608 LEASE MODIFICATION, Map (Oct. 2014), https://eplanning.blm.gov/epl-front-office/projects/nepa/41852/55032/59723/DOI-BLM-CO-N010-2014-044-EA-Public_Comment.pdf.

additional private and state coal production given this multiplier effect of federal coal. For example, the EA lists the Spring Creek mine in Montana on BLM's list of currently pending leases that would have been paused under the Jewell Order.[74] The current Spring Creek mine includes a mix of state and federal leases.[75] Leasing new federal coal in the area under consideration would likely open the door to mining more state coal, as well, given geography and shared mining infrastructure.[76] The EA or EIS must analyze the effects that the federal coal program has on the connected action of private and state coal mining, including GHG emissions from this connected mining.

Finally, BLM has not supplied a "convincing statement of reasons" to explain why the Zinke Order's impacts are not insignificant, as the court directed.[77] BLM failed to even analyze the proper universe of environmental effects—the national coal program. BLM's analysis disregards the court's mandate and defies NEPA's purpose: to allow agencies, the public, and public officials to take a hard look at the full spectrum of environmental effects of the proposed federal action and its alternatives.[78] The full spectrum of environmental effects from resuming federal coal leasing nationally, including connected and cumulative actions, are significant and necessitate preparation of an EIS.

## VI. BLM Fails to Use the Social Cost of Carbon to Monetize Emissions.

Once BLM estimates the quantity of greenhouse emissions that all new coal leases would generate, it should monetize those emissions by using the Interagency Working Group (IWG)'s social cost of greenhouse gases metric. As explained in more detail in Policy Integrity's joint comments that focus on this issue,[79] the social cost of greenhouse gases metric is a tool designed to aid policymakers in weighing the costs and benefits of any action that affects greenhouse gas emissions. More generally, placing a dollar value on a proposed action's contributions to climate damages provides the public and decisionmakers with more information and context than simply comparing those emissions with the total greenhouse gas emissions of a specific state or the entire country, as such comparisons often make the emissions from a single action look misleadingly small. The IWG's social cost of greenhouse gases estimates remain the best available estimates for

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[74] EA at 17.

[75] *See* OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT, ENVIRONMENTAL ASSESSMENT: SPRING CREEK MINE (Sept. 2016) at 1-5 (Map 1-2), https://www.wrcc.osmre.gov/initiatives/SpringcreekMineLBA1/documents/finalEA.pdf#page=17.

[76] *See id.; see also* BLM, Map: Spring Creek Coal Mine EIS Project Area, https://eplanning.blm.gov/epl-front-office/projects/nepa/70499/93062/112156/SpringCreekEIS_Scoping_Map2.pdf.

[77] *Id*. at 29 (citing *Blue Mountains Biodiversity*, 161 F.3d at 1212).

[78] *See, e.g*., 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."); Headwaters, Inc. v. Bureau of Land Mgmt., Medford Dist., 914 F.2d 1174, 1180 (9th Cir. 1990) (noting that the "touchstone" of NEPA's alternatives analysis is whether the EIS's "selection and discussion of alternatives fosters informed decision-making and informed public participation"); Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 184 F. Supp. 3d 861, 940 (D. Or. 2016).

[79] Joint Comments, *supra* note **Error! Bookmark not defined.**.

monetizing climate damages for each additional ton of greenhouse gas emissions,[80] despite Executive Order 13,783, which disbanded the IWG and withdrew the group's technical guidance documents.

BLM makes a number of inaccurate claims to defend its decision not the use the IWG's social cost of greenhouse gases metric.[81] The aforementioned joint comments explain how BLM's reasoning is flawed and why its failure to use the social cost of greenhouse gases is misleading to the public and decisionmakers.

## VII. Conclusion

In short, the draft EA suffers from several omissions and errors. These comments explain why the EA fails to meet NEPA's requirements.

Respectfully submitted,

Jayni Hein
Iliana Paul

Institute for Policy Integrity, NYU School of law

[80] *See, e.g.*, Richard Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 SCIENCE 655 (2017); Michael Greenstone et al., *Developing a Social Cost of Carbon for U.S. Regulatory Analysis: A Methodology and Interpretation*, 7 REV. ENVTL. ECON. & POL'Y 23, 42 (2013); Richard L. Revesz et al., *Global Warming: Improve Economic Models of Climate Change*, 508 NATURE 173 (2014) (co-authored with Nobel Laureate Kenneth Arrow, among others).

[81] EA at 24 ("…this analysis does not undertake an analysis of SCC because 1) it is not engaged in a rulemaking for which the protocol was originally developed; 2) the Interagency Working Group, technical supporting documents, and associated guidance have been withdrawn; 3) NEPA does not require cost-benefit analysis; and 4) the full social benefits of coal-fired energy production have not been monetized, and quantifying only the costs of GHG emissions, but not the benefits, would yield information that is both potentially inaccurate and not useful.").