

Institute for Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

October 27, 2020

To: Bureau of Land Management, Utah State Office

Subject: Comments on Failure to Monetize Greenhouse Gas Emissions or Consider Option Value in the Supplemental Environmental Analysis for Greenhouse Gas Emissions Related to Oil and Gas Leasing in Utah (DOI-BLM-UT-0000-2021-0001-EA)

The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”)¹ respectfully submits comments on the Bureau of Land Management’s (“BLM”) Supplemental Environmental Analysis for Greenhouse Gas Emissions Related to Oil and Gas Leasing in Utah (the “Supplemental EA”).² Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity regularly submits comments to federal agencies on the rational consideration of environmental and social impacts under the National Environmental Policy Act (“NEPA”), including the proper assessment of climate impacts and option values in resource management decisions.

BLM prepared the Supplemental EA following the decision of *WildEarth Guardians v. Bernhardt*, where the U.S. District Court for the District of Columbia found that BLM’s analysis of greenhouse gas emissions for a number of oil and gas leases in Wyoming and Utah was insufficient.³ Though some of the lease parcels covered in the Supplemental EA were at issue in *WildEarth Guardians v. Bernhardt*, many were not, yet those leases were suspended by BLM because the agency determined that the original greenhouse gas analyses for those parcels presented similar issues as the court identified in that case.⁴ However, despite being ordered to provide a more thorough analysis of greenhouse gas emissions, even with the Supplemental EA, BLM still fails to meet its obligations under NEPA.

¹ This document does not purport to represent the views, if any, of New York University School of Law.

² Utah State Office, Supplemental Environmental Analysis for Greenhouse Gas Emissions Related to Oil and Gas Leasing in Utah (DOI-BLM-UT-0000-2021-0001-EA) (Oct. 2020) [hereinafter “Supplemental EA”], https://eplanning.blm.gov/public_projects/2002778/200390662/20027883/250034085/2020-10-08-DOI-BLM-UT-0000-2021-0001-EA%20GHG-15daypubliccomment.pdf.

³ 368 F.Supp.3d 41 (D.D.C. 2019). The case was called *WildEarth Guardians v. Zinke* before the caption was amended in April 2019.

⁴ Supplemental EA at 6.

Additionally, despite low oil prices and reduced royalty revenues as a result of the global economic downturn, BLM greenlights these sales without even considering whether the public would be better served by delay. BLM's cursory assessment practically assures that the public will not receive "fair market value" for these pristine lands.

Consideration of Greenhouse Gas Emissions

BLM projects that the proposed lease sales⁵ will result in more than 3.4 million metric tons of carbon-dioxide equivalent in total downstream and operational emissions from the reasonably foreseeable development scenario,⁶ with an additional 700 thousand metric tons of emissions annually for construction⁷—a substantial amount that will contribute to numerous adverse climate impacts. While NEPA requires BLM to disclose and assess the significance of the leasing's contributions to such actual environmental impacts—and an available tool, the social cost of greenhouse gases metric, allows the agency to do exactly that—the Supplemental EA fails to estimate such actual, real-world climate impacts. Yet as the social cost metrics reveal, the scenario BLM proposes would result in over \$193 million in annual climate costs from downstream emissions alone.⁸

Mere quantification of greenhouse gas emissions is insufficient under NEPA without an assessment of the harm that those emissions will cause. NEPA requires "hard look" consideration of beneficial and adverse effects of each alternative option for major federal government actions. The U.S. Supreme Court has called the disclosure of impacts the "key requirement of NEPA," and held that agencies must "consider and disclose the *actual environmental effects*" of a proposed project in a way that "brings those effects to bear on [the agency's] decisions."⁹ The "impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires," and it is arbitrary and capricious not to "provide the necessary contextual information about the[se] cumulative and incremental environmental impacts."¹⁰ Although BLM dedicates over 10 pages to the discussion of climate impacts,¹¹ including impacts from the proposed action and cumulative impacts, BLM only briefly contextualizes the magnitude of the emissions from the proposed action by comparing

⁵ On the 621 parcels in question.

⁶ *Id.* at 33, 35. Policy Integrity does not endorse the accuracy of these projections. Indeed, significant evidence, including recent trends in the oil-and-gas sector, indicates that drilling on these parcels may be limited throughout the duration of the proposed leases.

⁷ *Id.* at 33. BLM notes that if it had used a different global warming potential time horizon, i.e. 20 years instead of 100 years, the emissions estimates for well construction and operations would be 765 thousand and 830 thousand metric tons of carbon dioxide equivalent per year, respectively. *Id.* at 34.

⁸ Average annual downstream and operational emissions total 3.4 million tons annually. *Id.* at 33, 35. The 2016 Interagency Working Group's central estimate of the social cost of carbon for year 2025 emissions is \$46 in 2007\$. Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 4 (2016). Adjusted for inflation, that equals approximately \$57 in 2019\$. 3.4 million metric tons of CO₂e* \$57 = \$193 million. In a proper cost benefit analysis, that calculation of costs from year 2025 emissions would be discounted back to present value.

⁹ *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 96 (1983) (emphasis added).

¹⁰ *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008); *see also id.* ("[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming.").

¹¹ Supplemental EA at 31-44.

those totals to emission figures from other sources such as passenger vehicles.¹² However, the comparisons BLM offers in the Supplemental EA say nothing of the actual environmental impacts resulting from the lease sales.

The tons of greenhouse gases emitted by a project expressed as the equivalent number of vehicles driven annually is not the “actual environmental effects” that must be assessed under NEPA. Rather, the actual effects are the incremental climate impacts caused by those emissions, including property lost or damaged by sea-level rise, coastal storms, flooding, and other extreme weather events, and human health impacts including mortality from heat-related illnesses and changing disease vectors like malaria and dengue fever.¹³ Simply quantifying emissions is not enough: By calculating only the tons of greenhouse gases emitted, an agency fails to meaningfully assess the actual incremental impacts to property, human health, productivity, and so forth.¹⁴ To provide an analogous example, just quantifying the acres of timber to be harvested or the miles of road to be constructed does not constitute a “description of *actual* environmental effects,” even when paired with a qualitative “list of environmental concerns such as air quality, water quality, and endangered species,” when the agency fails to assess “the degree that each factor will be impacted.”¹⁵

BLM’s failure to meaningfully consider the impact of the greenhouse gas emissions from the proposed lease sales on climate damages is particularly arbitrary and irrational because the social cost of greenhouse gases allows for precisely such an assessment. The social cost of greenhouse gases methodology calculates how the emission of an additional unit of greenhouse

¹² *Id.* at 35 (“The estimated annual emissions resulting from well operations (Table 14) and fossil fuel combustion (Table 16) of the 621 lease parcels is 3,416,050 MT CO₂e/year. This is equivalent to approximately 738,000 passenger vehicles driven for one year and emissions could be avoided by the operation of 737 wind turbines.”).

¹³ For a more complete discussion of actual climate effects, including air quality mortality, extreme temperature mortality, lost labor productivity, harmful algal blooms, spread of West Nile virus, damage to roads and other infrastructure, effects on urban drainage, damage to coastal property, electricity demand and supply effects, water supply and quality effects, inland flooding, lost winter recreation, effects on agriculture and fish, lost ecosystem services from coral reefs, and wildfires, see EPA, *Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment* (2017); U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment* (2017); EPA, *Climate Change in the United States: Benefits of Global Action* (2015); Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for U.S. Coastal Real Estate* (2018).

¹⁴ See, e.g., *Ctr. for Biological Diversity*, 538 F.3d at 1216–17 (rejecting analysis under NEPA when agency “quantifie[d] the expected amount of [carbon dioxide] emitted” but failed to “evaluate the incremental impact that these emissions will have on climate change or on the environment more generally,” noting that this approach impermissibly failed to “discuss the *actual* environmental effects resulting from those emissions” or “provide the necessary contextual information about the cumulative and incremental environmental impacts” that NEPA requires); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014) (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); *Mont. Env’t. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”); *California v. Bernhardt*, No. 4:18-CV-05712-YGR, 2020 WL 4001480, at *36 (N.D. Cal. July 15, 2020) (“Mere quantification [of greenhouse gas emissions] is insufficient.”).

¹⁵ *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (“A calculation of the total number of acres to be harvested in the watershed is . . . not a sufficient description of the actual environmental effects that can be expected from logging those acres.”).

gases affects atmospheric greenhouse concentrations, how that change in atmospheric concentrations changes temperature, and how that change in temperature incrementally contributes to the above list of social and economic damages.¹⁶ The social cost of greenhouse gases tool therefore captures the factors that actually affect public welfare and assesses the degree of impact to each factor, in ways that just estimating the volume of emissions cannot. In fact, various agencies (including Department of the Interior subagencies) have used the social cost of greenhouse gases to assess a project's climate impacts under NEPA.¹⁷

Applying the social cost of greenhouse gases is straightforward and provides information that would be very useful to BLM's assessment here. Indeed, applying the social cost of greenhouse gases is straightforward and provides information that would be very useful to the Commission's assessment here. The most widely used estimate of the Social Cost of Carbon was developed by the federal Interagency Working Group on the Social Cost of Carbon ("IWG"), a coordinated effort among twelve federal agencies and White House offices. The Working Group released estimates in 2010 and updated them in 2016 to "provide a consistent approach for agencies to quantify [climate change] damage in dollars."¹⁸ Many authorities endorse the Group's estimate of the social cost of greenhouse gases. In 2016 and 2017, the National Academies of Sciences issued two reports that, while recommending future methodological improvements, supported the continued use of the IWG estimates.¹⁹ Distinguished economists have explained that the Group's estimates remain the best numbers available to federal agencies.²⁰ And the U.S. Court of Appeals for the Seventh Circuit upheld agency reliance on these estimates.²¹

Using the central value identified by the federal IWG, the methodology reveals that the proposed lease sales would cause more than \$5.8 billion in total climate harms over the lifetime of the leases, and \$193 million in annual climate damages from operations and end-use combustion.²² This substantial cost helps disclose the intensity and significance of the Project's climate impacts pursuant to NEPA and would bear heavily on assessing whether the lease sale would have significant environmental impacts. Should BLM move forward with the proposed

¹⁶ Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis* 5 (2010).

¹⁷ See, e.g., Bureau of Ocean Energy Mgmt., Final Environmental Impact Statement of Cook Inlet Planning Area Oil and Gas Lease Sale 244 (BOEM 2016-069) (Dec. 23, 2016); see also Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 COLUM. J. ENV'T. L. 203, 270–84 (2017) (listing all uses by federal agencies through mid-2016, including numerous NEPA assessments).

¹⁸ *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at P 45 (Mar. 14, 2018).

¹⁹ Nat'l Acads. Sci., Eng'g & Med., *Valuing Climate Damages: Updating Estimates of the Social Cost of Carbon Dioxide* 3 (2017) ("NAS 2017 Report"); Nat'l Acads. Sci., Eng'g & Med., *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update* 1 (2016).

²⁰ See Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 Science 655 (2017) (co-authored with Michael Greenstone, Michael Hanemann, Peter Howard, and Thomas Sterner).

²¹ *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678 (7th Cir. 2016).

²² BLM reports that the lifetime emissions from the leases would be 103.19 million metric tons. Supplemental EA at 35. The 2016 Interagency Working Group's central estimate of the social cost of carbon for year 2025 emissions is \$46 in 2007\$. Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 4 (2016). Adjusted for inflation, that equals approximately \$57 in 2019\$. 103.19 million metric tons of CO₂e* \$57 = \$5.881 billion. In a proper cost benefit analysis, that calculation of costs from year 2025 emissions would be discounted back to present value.

leases without using the social cost methodology or offering any other rational assessment of the severity of resulting climate harms, its determination would be arbitrary and capricious.

BLM's few excuses for not applying the social cost of greenhouse gases are meritless. One of the agency's claims—that the tool was developed for cost-benefit analyses of proposed rules and not specifically for NEPA assessments²³—is unconvincing. Indeed, the development of the social cost of greenhouse gases in no way limits the metric's application to contexts other than cost-benefit analysis for rulemakings. The social cost of greenhouse gases measures the marginal cost of *any* additional unit of a greenhouse gas emitted into the atmosphere. The type of government action that precipitated that unit of emissions—whether a regulation, project approval, granting of a permit, or authorization to drill on federal land—does not affect the marginal climate damages caused.

Nor is BLM correct to suggest that the use of the social cost of greenhouse gases is inappropriate if the benefits of oil and gas development are not monetized.²⁴ For one, the resource management plans that cover the parcels in question do monetize those benefits.²⁵ But in any event, even if other impacts were *not* monetized, using the social cost of greenhouse gases would still be the best method to assess the significance of a project's climate-related impacts as NEPA requires. Applicable regulations acknowledge that when monetization of costs or benefits is “relevant to the choice among environmentally different alternatives,” that analysis can be presented alongside “any analyses of unquantified environmental impacts, values, and amenities.”²⁶ In other words, contrary to BLM's suggestion, the inability to monetize some impacts should not preclude the monetization of other impacts—like climate damages—that can be readily monetized. This is especially so since applying the social cost of greenhouse gases requires simple arithmetic (multiplication) once BLM has quantified a project's emissions.

Finally, in *WildEarth Guardians*—which again, concerns only some of the parcels at issue here—the U.S. District Court for the District of Columbia did not require BLM to use the social cost of carbon but issued its holding on very narrow grounds. Specifically, the court declined to side with plaintiffs that “it was arbitrary and capricious for BLM to discuss the economic benefits of oil and gas drilling without quantifying their economic costs” by using the social cost of carbon protocol.²⁷ However, the court did *not* hold that BLM acted consistently in choosing to monetize benefits without monetizing costs; rather, it held that BLM's treatment of economic benefits was so “sparse[]” and “cursory” that the precedent established in *High Country Conservation Advocates v. Forest Service* (discussed in the attached comments²⁸) could be differentiated.²⁹ But several important distinguishing arguments apply.

²³ Supplemental EA at 18.

²⁴ *Id.*

²⁵ See, e.g., BLM, Monticello Resource Management Plan (Nov. 2008) at 4-433 (disclosing per-well royalty revenues), https://eplanning.blm.gov/public_projects/lup/68097/85618/102813/Chapter_4.pdf.

²⁶ 40 C.F.R. § 1502.22. Under a rule from the Council on Environmental Quality that recently took effect, this subsection of the Code of Federal Register was not substantively altered but was renumbered to its current placement. Policy Integrity in no way concedes the legality of these amendments, but simply mentions them here for the sake of clarity.

²⁷ 368 F. Supp. 3d 41, 78 (D.D.C. 2019)

²⁸ See Joint on Failure to Monetize Greenhouse Gas Emissions in the Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement 11 (Sept. 25, 2020) (attached as Exhibit A) (discussing *High Country Conservation Advocates v. U.S. Forest Service*, 52 F. Supp. 3d 1174 (D. Colo. 2014).

²⁹ *WildEarth Guardians*, 368 F. Supp. 3d at 78.

First, the need to consistently treat costs and benefits is not the only reason why agencies should use the social cost of greenhouse gases to assess climate damages in NEPA reviews. The court in *WildEarth Guardians* never considered whether using the social cost of greenhouse gases was necessary or appropriate to help fulfill the obligations and goals of NEPA: to assess and disclose a project’s potentially significant actual real-world impacts, to weigh the intensity and significance of a project’s contributions to such impacts, and to give meaningful context to the information presented. Second, the court’s consideration was incomplete on the issue of inconsistent treatment of costs and benefits. It is not clear why the paltry size of the lease’s economic benefits should excuse BLM from inconsistently treating costs and failing to apply a readily available and easy-to-use tool to monetize the lease’s hugely significant climate costs. *High Country*’s ruling turned not on the size of the monetized benefits but on the inconsistent treatment of costs and benefits.³⁰ Furthermore, the court overlooked other portions of the original EAs and the tiered environmental impact statements that monetized and relied on larger economic benefits to much greater extent. The district court also deferred to BLM’s so-called “reasoned explanations,”³¹ yet failed to recognize that in *High Country*, the District of Colorado also considered and dismissed the post-hoc attempt to argue that the social cost of carbon protocol was too imprecise or controversial to use because there are a range of estimates.³² Finally, the court in *WildEarth Guardians* never discussed other important case law, such as *Montana Environmental Information Center v. Office of Surface Mining*, that also remanded an agency action after its NEPA analysis failed to apply the social cost of greenhouse gases.³³ Ultimately, the court instructed BLM on remand to “reassess” whether the social cost of greenhouse gas protocol would “contribute to informed decisionmaking” and ensure more accurate analysis as required by NEPA.³⁴ The court believed that “the protocol may one day soon be a necessary component of NEPA analyses.”³⁵ Indeed, that day has already arrived.

Policy Integrity hereby attaches its September 2020 comments on BLM’s draft Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement—submitted jointly with ten other groups—which provides further detail on the social cost of greenhouse gases and rebuts additional arguments that BLM has offered against the methodology in prior determinations. As the attached comments further explain, and as detailed above, it would be arbitrary and capricious for BLM to proceed with the lease sales covered by the Supplemental EA without further analysis of its climate impacts, which the social cost of greenhouse gases would facilitate.

Consideration of Delay, Option Value, and Fair Market Value

In addition to its failure to reasonably assess climate impacts, BLM also errs by failing to consider the option of further deferring these lease sales in order to gain additional information about market conditions and other critical factors. Particularly given the recent downturn in the energy market, BLM’s failure to assess option value makes it likely that the agency will violate

³⁰ *High Country*, 52 F. Supp. 3d at 1191.

³¹ *WildEarth Guardians*, 368 F. Supp. 3d at 78.

³² 52 F. Supp. 3d at 1192.

³³ 274 F. Supp. 3d 1074 (D. Mont. 2017) (discussed in the attached joint comments at 11-12).

³⁴ 368 F. Supp.3d at 79 n.31.

³⁵ *Id.*

the Federal Land Policy and Management Act (“FLPMA”) by failing to obtain “fair market value” for these parcels.³⁶

The informational value of delay is known as “option value,” and it has long been considered a relevant factor for federal leasing and mineral decisions by agencies, courts, and economists. The value associated with the option to delay can be large, especially when there is a high degree of uncertainty about price, extraction costs, and the social and environmental costs imposed by drilling—each of which are present here. For instance, it may be advantageous for BLM to further defer some or all of these leases, pending more comprehensive environmental information, completion of a relevant cultural or scientific study, or more community input. If BLM learns of new information regarding, for instance, environmental or safety hazards, developmental value, recreational value, carbon sink value, or cultural significance, it is much more difficult (if not impossible) to act on this information when the land is already leased due to the length of the lease and the possibility that the land’s character will be irreparably changed through resource extraction.³⁷ Thus, as the U.S. Court of Appeals for the District of Columbia Circuit has explained, there is a “tangible present economic benefit to delaying the decision to drill for fossil fuels to preserve the opportunity to see what new technologies develop and what new information comes to light.”³⁸ And this option value “can be quite substantial, especially for tracts that are only marginally profitable at current prices” and so yield little present economic benefit if leased now.³⁹

In light of the uncertainty and near-irreversibility associated with leases for mineral development, BLM should account for option value at the lease sale stage by offering only high-potential lands with limited multiple-use conflicts, if any, in lease sales, and deferring other parcels that pose potential resource conflicts. In fact, the federal government has considered option value in other resource management determinations—such as the Bureau of Ocean and Energy Management’s Outer Continental Shelf leasing program from 2015, and more recent decisions from the U.S. Forest Service and other agencies.⁴⁰ And courts have held that the government must consider option value when it engages in mineral leasing.⁴¹ Yet here BLM fails to consider option value or the potential to defer any of the lease parcels.

³⁶ 43 U.S.C. § 1701(a)(9).

³⁷ See Jayni Hein et al., *Look Before You Lease* 17 (2020), https://policyintegrity.org/files/publications/Option_Value_Report.pdf.

³⁸ *Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588, 610 (D.C. Cir. 2015).

³⁹ Michael Livermore, *Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581, 638–39 (2013).

⁴⁰ See, e.g., U.S. BUREAU OF OCEAN & ENERGY MGMT., 2017-2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING DRAFT PROPOSED PROGRAM at 5-20, 8-3 to 8-19 (2015), <https://perma.cc/8AU3-7MS4> (stating that (i) environmental and social cost uncertainties can affect the size, timing and location of leasing; (ii) option value can be a component of the “fair market value” of a lease; and (iii) BOEM can raise minimum bids, rents, and royalties for leases to account for option value); see also Inst. for Pol’y Integrity, Comments on the Draft Environmental Assessment for the Proposed September 2020 Competitive Oil and Gas Lease Sale, Docket No. DOI-BLM-UT-0000-2020-0004-EA at 14–15 (July 9, 2020) (attached as Exhibit B) (listing additional examples,).

⁴¹ *Ctr. for Sustainable Econ.*, 779 F.3d at 610 (explaining that an agency may “act[] irrationally in failing to [consider] the informational value of delay,” and highlighting Interior’s “qualitative analysis of the benefits of delaying [offshore] leasing” as satisfying this standard); *California v. Watt*, 668 F.2d 129, 1319–20 (D.C. Cir. 1981) (remanding an offshore leasing determination because Interior failed to “properly consider[] the economic effect of delaying lease sales,” keying in on the fact that the agency “ignored the price rises in crude oil that make delay a factor increasing the value of any recovered resources”).

BLM's disregard for option value is not only itself problematic, but also creates a scenario in which the agency is likely to violate its requirement under the FLPMA to obtain "fair market value" for any lease sale. Specifically, BLM risks repeating a pattern of obtaining minimal payments from oil companies to sit on parcels while depriving the public of the enjoyment of those lands. As of the end of fiscal year 2018, half of the over 25.5 million acres of federal land locked up in oil and gas leases—nearly 13 million acres—was lying idle without production.⁴² The rate is even higher in Utah, where nearly 1.5 of the 2.6 million leased federal acres—over 57 percent—were sitting idle.⁴³ In Wyoming, as well, roughly half of all leased acres are currently idle.⁴⁴

One reason that developers lease lands despite low expectations to drill and "little evidence that much oil or gas is easily accessible" is that they may be "hoping that the land will increase in value nonetheless, because of higher energy prices, new technologies that could make exploration and drilling more economical or the emergence of markets for other resources hidden beneath the surface."⁴⁵ In other words, buyers are considering option value—as rational economic actors do when making market decisions. Yet in these lease sales, BLM fails to consider the prospect of further deferring leasing until energy prices are higher, which could potentially justify the costs of leasing later, and also fails to preserve the option to use these public lands to promote other valuable uses like recreation and conservation. Because the nation derives little monetary benefit from unproductive leases,⁴⁶ yet leasing public lands for development still deprives them of other beneficial uses, it is highly unlikely that BLM will obtain fair market value for these lands.

Failure to earn "fair market value" from these leases is particularly likely in the present moment, as the national and global economies have contracted as a result of the COVID-19 pandemic. Global oil prices have plunged, with the price of crude oil currently sitting about one-third lower than it did at the beginning of 2020⁴⁷—a trend that numerous forecasters believe will

⁴² *Compare Oil and Gas Statistics*, BUREAU OF LAND MGMT. tbl. 2, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics>, with *id.* tbl. 6.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ Eric Lipton & Hiroko Tabuchi, *Energy Speculators Jump on Chance to Lease Public Land at Bargain Rates*, N.Y. TIMES (Nov. 27, 2018), <https://www.nytimes.com/2018/11/27/business/energy-speculators-public-land-leases.html>.

⁴⁶ The government does not receive royalties when a parcel is undeveloped, thereby depriving taxpayers of the primary source of income from onshore leasing. That leaves only lease and rental payments for the land itself, but these are frequently negligible. The Mineral Leasing Act imposes a minimum upfront bid of just \$2 per acre for onshore oil and gas leases. Additionally, a parcel that does not receive any bids can still be leased noncompetitively, whereby the first qualified applicant is entitled to lease the land upon payment of a \$435 application fee. Rental payments for nonproducing lands are also minimal: A company pays an annual rental fee of only \$1.50 per acre during the first five years of the rental term, and just \$2 per acre thereafter.

⁴⁷ *Petroleum & Other Liquids*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/dnav/pet/hist/RWTCD.htm> (last visited Oct. 25, 2020).

last for years or even decades to come.⁴⁸ Furthermore, as oil companies have seen their revenue decline, BLM has been granting unprecedented numbers of requests from producers to reduce royalty payments, decreasing the return that the government receives from drilling. Since March, BLM has granted royalty relief to more than 500 oil-and-gas leases covering 343,000 acres of federal land, with some of these reductions reducing the royalty rate from 12.5 percent all the way down to 0.5 percent.⁴⁹

Moreover, energy developers have cut back on their drilling in recent months. Nationwide, there are currently just 287 operational oil and gas rigs, according to data compiled by Baker Hughes—a decline of nearly 70 percent from the 851 rigs that were operational a year ago.⁵⁰ In Wyoming, for instance, the number of active rigs has declined from 32 a year ago to just three today.⁵¹ This sharp decline in drilling indicates that the parcels in these sales may be unlikely to see any drilling in the near- or medium-term future, thus depriving the federal government of *any* royalties (even reduced-rate royalties) that it would receive from productive lands. Yet in assessing the reasonably foreseeable development scenario, BLM relies on its previous analyses from 2014–18—at a time when the oil market was doing far better—and does not consider the impacts of recent market developments.⁵² A more updated analysis would likely conclude that those forecasts are overly optimistic about the prospects of drilling, meaning that BLM is likely to receive limited revenues from these leases while depriving the public of valuable lands. Pursuant to NEPA, BLM has a duty to use up-to-date information, and must take a “hard look” at the issues.⁵³ BLM fails to meet this standard here, rendering its analysis arbitrary and capricious.

Policy Integrity hereby attaches its July 2020 comments on a BLM proposed lease sale in Utah, which provides further detail on how BLM’s failure to consider option value and the potential for delay violates NEPA and creates a scenario by which the agency is also likely to violate FLPMA’s “fair market value” requirement.

⁴⁸ Laura Hurst & Amanda Jordan, *BP Writes Off Billions as Covid Redraws Rules of Oil Demand*, Bloomberg (June 15, 2020), <https://www.bloomberg.com/news/articles/2020-06-15/bp-sees-quarterly-charges-write-offs-of-up-to-17-5-billion> (reporting that BP has “cut its estimates for oil and gas prices in the coming decades between 20% and 30%,” as it “now sees the prospect of the pandemic having an enduring impact on the global economy, with the potential for weaker demand for energy for a sustained period”); INT’L MONETARY FUND, *World Economic Outlook Update* (June 2020), available at <https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEUpdateJune2020> (projecting only a modest rebound in oil prices toward “about 25 percent below the 2019 average”).

⁴⁹ *Oil & Gas Royalty Relief – Data and Analysis*, TAXPAYERS FOR COMMON SENSE, <https://www.taxpayer.net/energy-natural-resources/federal-royalty-relief-data-analysis-2/>; see also Will Englund & Dino Grandoni, *Oil companies drilling on federal land get break on royalties. Solar and wind firms get past-due rent bills.*, WASH. POST. (May 20, 2020), <https://www.washingtonpost.com/business/2020/05/20/blm-royalty-relief/>.

⁵⁰ *Rig Count Overview & Summary Count*, BAKER HUGHES, <https://perma.cc/PEB4-ET6A>.

⁵¹ *Rig Count Summary*, BAKER HUGHES, <https://bakerhughesrigcount.gcs-web.com/na-rig-count>.

⁵² Supplemental EA at 25.

⁵³ See, e.g., *Lands Council v. Powell*, 395 F.3d 1019, 1031 (9th Cir. 2005) (finding NEPA analysis insufficient when it rested on information that was “too outdated,” concluding that “the lack of up-to-date evidence ... prevented the [agency] from making an accurate cumulative impact assessment of the Project”); *Seattle Audubon Soc’y v. Espy*, 998 F.2d 699, 704–05 (9th Cir.1993) (overturning an agency decision when it rested on “stale scientific evidence”).

Sincerely,

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Iliana Paul, Senior Policy Analyst

Max Sarinsky, Attorney

Jason A. Schwartz, Legal Director

Attached:

Ex. A) Joint Comments on the Failure to Monetize Greenhouse Gas Emissions in the Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement (Sept. 25, 2020)

Ex. B) Comments on the Draft Environmental Assessment for the Proposed September 2020 Competitive Oil and Gas Lease Sale (July 9, 2020)

Exhibit A



To: Farmington Field Office, Bureau of Land Management; Navajo Regional Office, Bureau of Indian Affairs

Subject: Comments on Failure to Monetize Greenhouse Gas Emissions in the Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement

Submitted by: Environmental Defense Fund, Food and Water Watch, Institute for Policy Integrity at New York University School of Law, Montana Environmental Information Center, National Parks Conservation Association, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, Western Environmental Law Center, WildEarth Guardians, and the Wilderness Society¹

The following comments focus on the failure of the Bureau of Land Management and the Bureau of Indian Affairs (collectively, the “agencies”) to monetize climate damages in the Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement (“DEIS”).² The agencies forecast that the region will produce more than 300 million metric tons of cumulative greenhouse gas emissions under their preferred alternative³—an enormous amount that will contribute to numerous adverse climate impacts including sea-level rise, greater incidence of coastal storms and extreme weather events, and human health impacts and mortality from heat-related illnesses. While the National Environmental Policy Act (“NEPA”) requires the agencies to disclose and assess the significance of the resource management plan’s contributions to such actual environmental impacts, the agencies only provide volumetric emissions totals and thus fails to disclose any of the actual, real-world climate damages (such as sea-level rise, property damage, human health impacts, and so forth) that those substantial emissions will produce.

The agencies act under the misapprehension that it is not possible to quantify the resource management plan’s incremental climate impacts, stating that “there are no feasible and reliable tools to predict the impacts that [greenhouse gas] emissions from an individual project or group of projects would have on global, regional, or local climate.”⁴ But this statement is untrue, as the agencies overlook the social cost of greenhouse gases metric that was designed by a federal Interagency Working Group (“IWG”) and allows the agencies

¹ Our organizations may separately and independently submit other comments on other issues raised by this Environmental Impact Statement.

² U.S. Department of the Interior, Farmington Mancos-Gallup Draft Resource Management Plan Amendment and Environmental Impact Statement, Feb. 2020 [hereinafter “DEIS”].

³ *Id.* tbl. 3-14. Alternative C is the preferred alternative. *Id.* at ES-8.

⁴ *Id.* at 3-32.

to contextualize the significance of the plan's climate impacts as NEPA requires. The agencies should use that metric to monetize the damages that will result from this resource management plan: Doing so here would reveal that the preferred alternative would produce (even assuming the agencies' flawed methodology for counting greenhouse gas emissions⁵) roughly \$860 million in annual climate-related costs,⁶ which far exceeds projected benefits as measured by oil and gas economic output.⁷ If the agencies do not provide additional information to contextualize the plan's emissions, they will violate their obligations under NEPA.

These comments make the following points:

1. NEPA requires a "reasonably thorough discussion" and "necessary contextual information" on real-world climate impacts and their significance, which the social cost of greenhouse gases provides;
2. NEPA requires agencies to assess the impacts of emissions, including an assessment of their significance, yet the agencies fail to assess the magnitude of climate impacts from the DEIS. The social cost of greenhouse gases metric is designed to measure marginal additional damages and is therefore an appropriate and available tool to assess the significance of the emissions from a plan like this one. Monetizing climate damages will directly contextualize the significance of emissions from the DEIS;
3. The agencies monetize a number of other effects of the draft resource management plan, including total output, tax revenue, royalties, and labor income, and must give

⁵ The agencies use global warming potentials ("GWPs") to convert emissions of greenhouse gases into units of carbon dioxide equivalent, but do not use the most up-to-date GWPs or consider the sensitivity of their estimates to GWPs based on shorter versus longer time horizons. While agencies should ideally convert emissions of methane and nitrous oxide into climate costs using the appropriate social cost metrics, *see infra* Sec. C., agencies that opt to use GWPs must do so carefully and appropriately. Using GWPs to calculate equivalent emissions is important because some greenhouse gases, such as methane, are much more potent than carbon dioxide, and/or have much greater climate impacts in the short-term than the long-term. Under NEPA, "both short- and long-term effects" are relevant. 40 C.F.R. § 1501.3(b)(2)(i). Thus, agencies must consider the GWP of greenhouse gas emissions over both the short-term (20-year GWP) and long-term (100-year GWP). For instance, the GWP for methane is 36 tons of carbon dioxide equivalent over a 100-year period, and 87 tons over a 20-year period. Gunnar Nyhre & Drew Shindell, et al., *Anthropogenic and Natural Radiative Forcing in IPCC, Climate Change 2013: The Physical Science Basis, Contribution of Working Group 1 to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* 714 (2013). Notably, a district court recently agreed with commenters on this point, finding that BLM violated NEPA when it failed to justify its use of GWPs based on a 100-year time horizon rather than the 20-year time horizon of the resource management plans. *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, CV16-21-GF-BMM, 2018 WL 1475470, at *18 (D. Mont. Mar. 26, 2018).

Additionally, the agencies must use the most up-to-date GWPs accounting for methane oxidation. While the agencies report that they apply a 100-year time horizon to arrive at a GWP of 25 for methane and 298 for nitrous oxide, DEIS at 3-33, the IPCC has previously explained that "[t]hese values do not include [carbon dioxide] from methane oxidation," and that, taking oxidation into account "[v]alues for fossil methane are higher by 1 and 2 for the 20 and 100 year metrics, respectively," Nyhre & Shindell, *supra*, at 714. If the agencies made calculated carbon dioxide equivalent using the proper GWPs, therefore, their greenhouse gas projections would be even higher than they report.

⁶ *Id.* tbl. 3-14 reports annual average gross greenhouse gas emissions under Alternative C1 as 15.08 million CO₂e using the IPCC's AR5 100-year GWP. The 2016 Interagency Working Group's central estimate of the social cost of carbon for year 2025 emissions is \$46 in 2007\$; adjusted for inflation using the CPI Inflation Calculator, that equals approximately \$57 in 2019\$. 15.08 million * \$57 = \$859.56 million. In a proper cost-benefit analysis, that calculation of costs from year 2025 emissions would be discounted back to present value.

⁷ Total annual economic output under Alternative C1 ranges from \$187.4 million in 2018 to \$711.1 million in 2037. *Id.* tbl. 3-50. As detailed herein, the total economic output represents the full economic benefits of drilling. In a proper cost-benefit analysis, that calculation of economic output from 2037 would too be discounted back to present value.

climate effects the same consideration. When agencies monetize a proposed action's potential benefits—as the agencies do here—the potential climate costs must be treated with proportional rigor. Additionally, the fact that not every effect can be monetized does not mean that monetization is not a useful analytical tool.

We explain each of these points in turn below.

A. The Agencies Must Carefully Evaluate the Proposal's Climate Impacts, Which the Social Cost of Greenhouse Gases Facilitates

NEPA, the statute under which environmental impact statements are required, directs agencies to fully and accurately analyze the environmental, public health, and social welfare differences between proposed alternatives, and to contextualize that information for decision-makers and the public.⁸ NEPA requires a more searching analysis than merely disclosing the amount of pollution. Rather, agencies must examine the “ecological[,]... economic, social, [and] health” impacts of those emissions, including an assessment of their significance.⁹ By failing to use available tools, such as the social cost of carbon, to analyze the significance of the greenhouse gas emissions resulting from the resource management plan, the agencies violate NEPA.

Monetizing Climate Damages Fulfills the Obligations and Goals of NEPA

When a project or plan has climate consequences that must be assessed under NEPA, monetizing the climate damages fulfills an agency's legal obligations under NEPA in ways that simple quantification of tons of greenhouse gas emissions cannot. NEPA requires “hard look” consideration of beneficial and adverse effects of each alternative option for major federal government actions. The U.S. Supreme Court has called the disclosure of impacts the “key requirement of NEPA,” and held that agencies must “consider and disclose the *actual environmental effects*” of a proposed project in a way that “brings those effects to bear on [the agency's] decisions.”¹⁰ Courts have repeatedly concluded that an environmental impact statement must disclose relevant climate effects.¹¹ NEPA requires “a reasonably thorough discussion of the significant aspects of the probable environmental consequences,” to “foster[] both informed decision-making and informed public participation.”¹² In particular, “[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires,” and it is arbitrary

⁸ 42 U.S.C. § 4332(c).

⁹ 40 C.F.R. § 1508.1(g).

¹⁰ *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 96 (1983) (emphasis added); see also 40 C.F.R. § 1508.1(g) (providing for assessment of the “ecological,” “economic,” “social,” and “health” “effects”) (emphasis added).

¹¹ As the Ninth Circuit has held: “[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming.” *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008); see also *Border Power Plant Working Grp. v. U.S. Dep't of Energy*, 260 F. Supp. 2d 997, 1028–29 (S.D. Cal. 2003) (failure to disclose project's indirect carbon dioxide emissions violates NEPA).

¹² *Ctr. for Biological Diversity*, 538 F.3d at 1194 (citations omitted).

to fail to “provide the necessary contextual information about the cumulative and incremental environmental impacts.”¹³

Furthermore, the analyses included in environmental assessments and impact statements “cannot be misleading.”¹⁴ An agency must provide sufficient informational context to ensure that decisionmakers and the public will not misunderstand or overlook the magnitude of a proposed action’s climate risks compared to the no action alternative. As this section explains, by only quantifying the volume of greenhouse gas emissions, agencies fail to assess and disclose the actual climate consequences of an action and misleadingly present information in ways that will cause decisionmakers and the public to overlook important climate consequences. Using the social cost of greenhouse gas metrics to monetize climate damages fulfills NEPA’s legal obligations in ways that quantification alone cannot.

And finally, recent amendments in the implementing NEPA regulations promulgated by the Council on Environmental Quality cannot override the statute’s requirements, under which this analysis is deficient.¹⁵ As discussed above, NEPA requires “hard look” consideration of the potentially significant effects of proposed federal government actions; accordingly, insofar as the new regulations seek to allow agencies not to take a “hard look” at a project’s climate-related impacts—including by allowing agencies to merely quantify greenhouse gas emissions without disclosing the potential significance of the harms those emissions will cause—the rule violates NEPA.¹⁶ Thus, because the social cost of greenhouse gases is a readily available tool to analyze the economic and environmental effects of greenhouse gas emissions, it should be used by agencies to assess the significance of a project’s climate impacts.

The Agencies Must Assess Actual Incremental Climate Impacts, Not Just the Volume of Emissions

The tons of greenhouse gases emitted by a project are not the “actual environmental effects” under NEPA. Rather, the actual effects and relevant factors that must be analyzed

¹³ *Id.* at 1217.

¹⁴ *High Country Conservation Advocates v. U.S. Forest Service*, 52 F. Supp. 3d 1174, 1182 (D. Colo. 2014); accord *Johnston v. Davis*, 698 F.2d 1088, 1094–95 (10th Cir. 1983) (disapproving of “misleading” statements resulting in “an unreasonable comparison of alternatives”); *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446 (4th Cir. 1996) (“For an EIS to serve these functions” of taking a hard look and allowing the public to play a role in decisionmaking, “it is essential that the EIS not be based on misleading economic assumptions”); see also *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983) (holding that an agency’s “skewed cost-benefit analysis” was “deficient under NEPA”); see generally *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (criticizing an agency for “inconsistently and opportunistically fram[ing] the costs and benefits of the rule” and for “fail[ing] adequately to quantify the certain costs or toe explain why those costs could not be quantified”).

¹⁵ These regulations are published at 85 Fed. Reg. 43,304 (July 16, 2020).

¹⁶ Many of the undersigned organizations submitted comments opposing the proposed version of those regulations, and explaining that the regulations violate NEPA insofar as they seek to permit agencies to merely quantify greenhouse gas emissions without disclosing their potential significance, or to disregard greenhouse gas emissions altogether. See Comments on Climate Analysis Under Update to Regulations Implementing Procedural Provisions of the National Environmental Policy Act (Mar. 10, 2020), available at https://policyintegrity.org/documents/CEQ_NEPA_Joint_SCC_comments_2020.03.10.pdf.

and disclosed to the public are the incremental climate impacts caused by those emissions, including:¹⁷

- property lost or damaged by sea-level rise, coastal storms, flooding, and other extreme weather events, as well as the costs of protecting vulnerable property and resettling following property losses;
- changes in energy demand, from temperature-related changes to the demand for cooling and heating;
- lost productivity and other impacts to agriculture, forestry, and fisheries, due to alterations in temperature, precipitation, CO₂ fertilization, and other climate effects;
- human health impacts, including cardiovascular and respiratory mortality from heat-related illnesses, changing disease vectors like malaria and dengue fever, increased diarrhea, and changes in associated pollution;
- changes in fresh water availability;
- ecosystem service impacts;
- impacts to outdoor recreation and other non-market amenities; and
- catastrophic impacts, including potentially rapid sea-level rise, damages at very high temperatures, or unknown events.¹⁸

Even in combination with a general, qualitative discussion of climate change, by calculating only the tons of greenhouse gases emitted, an agency fails to meaningfully assess the actual incremental impacts to property, human health, productivity, and so forth.¹⁹ An agency

¹⁷ These impacts are all included to some degree in the three integrated assessment models (IAMs) used by the IWG (namely, the DICE, FUND, and PAGE models), though some impacts are modeled incompletely, and many other important damage categories are currently omitted from these IAMs. *Compare* Interagency Working Group on the Social Cost of Carbon, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis* at 6–8, 29–33 (2010), <https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf> [hereinafter 2010 TSD]; with Peter Howard, *Omitted Damages: What's Missing from the Social Cost of Carbon* (Cost of Carbon Project Report, 2014), http://costofcarbon.org/files/Omitted_Damages_Whats_Missing_From_the_Social_Cost_of_Carbon.pdf. For other lists of actual climate effects, including air quality mortality, extreme temperature mortality, lost labor productivity, harmful algal blooms, spread of West Nile virus, damage to roads and other infrastructure, effects on urban drainage, damage to coastal property, electricity demand and supply effects, water supply and quality effects, inland flooding, lost winter recreation, effects on agriculture and fish, lost ecosystem services from coral reefs, and wildfires, see EPA, *Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment* (2017); U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment* (2017); EPA, *Climate Change in the United States: Benefits of Global Action* (2015); Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for U.S. Coastal Real Estate* (2018).

¹⁸ For additional discussion of the climate impacts caused by greenhouse gas emissions, see Intergovernmental Panel on Climate Change, *Global Warming of 1.5 °C: Summary for Policymakers* 9–12 (Valérie Masson-Delmotte et al. eds., 2018), available at https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_version_stand_alone_LR.pdf.

¹⁹ See *Ctr. for Biological Diversity*, 538 F.3d at 1216–17 (rejecting analysis under NEPA when agency “quantifie[d] the expected amount of [carbon dioxide] emitted” but failed to “evaluate the incremental impact that these emissions will have on climate change or on the environment more generally,” noting that this approach impermissibly failed to “discuss the actual environmental effects resulting from those emissions” or “provide the necessary contextual information about the cumulative and incremental environmental impacts” that NEPA requires); *High Country*, 52 F. Supp. 3d at 1190 (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); *Mont. Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”);

therefore falls short of its legal obligations and statutory objectives by disclosing only volume estimates. To take an analogous example, courts have held that just quantifying the acres of timber to be harvested or the miles of road to be constructed does not constitute a “description of *actual* environmental effects,” even when paired with a qualitative “list of environmental concerns such as air quality, water quality, and endangered species,” when the agency fails to assess “the degree that each factor will be impacted.”²⁰

By monetizing climate damages using the social cost of greenhouse gas metrics, the agencies can satisfy NEPA’s legal obligations and statutory goals to assess the incremental and actual effects bearing on the public interest. The social cost of greenhouse gases methodology calculates how the emission of an additional unit of greenhouse gases affects atmospheric greenhouse concentrations, how that change in atmospheric concentrations changes temperature, and how that change in temperature incrementally contributes to the above list of economic damages, including property damages, energy demand effects, lost agricultural productivity, human mortality and morbidity, lost ecosystem services and non-market amenities, and so forth.²¹ The social cost of greenhouse gases tool therefore captures the factors that actually affect public welfare and assesses the degree of impact to each factor, in ways that just estimating the volume of emissions cannot.

Climate Damages Depend on Stock and Flow, But Volume Estimates Only Measure Flow

The climate damage generated by each additional ton of greenhouse gas emissions depends on the background concentration of greenhouse gases in the global atmosphere. Once emitted, greenhouse gases can linger in the atmosphere for centuries, building up the concentration of radiative-forcing pollution and affecting the climate in cumulative, non-linear ways.²² As physical and economic systems become increasingly stressed by climate change, each marginal additional ton of emissions has a greater, non-linear impact. The climate damages generated by a given amount of greenhouse pollution is therefore a function not just of the pollution’s total volume but also the year of emission, and with every passing year an additional ton of emissions inflicts greater damage.²³

As a result, focusing just on the volume or rate of emissions, as the agencies do here,²⁴ is insufficient to reveal the incremental effect on the climate. The change in the rate of emissions (flow) must be assessed given the background concentration of emissions (stock). A percent comparison to national emissions is perhaps even more misleading. A project that added 23 million additional tons per year of carbon dioxide would have

California v. Bernhardt, No. 4:18-CV-05712-YGR, 2020 WL 4001480, at *36 (N.D. Cal. July 15, 2020) (“Mere quantification [of greenhouse gas emissions] is insufficient.”).

²⁰ *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (“A calculation of the total number of acres to be harvested in the watershed is . . . not a sufficient description of the actual environmental effects that can be expected from logging those acres.”); *see also Oregon Natural Res. Council v. Bureau of Land Mgmt.*, 470 F.3d 818 (9th Cir. 2006).

²¹ 2010 TSD, *supra* note 17, at 5.

²² Carbon dioxide also has cumulative effects on ocean acidification, in addition to cumulative radiative-forcing effects. *See id.* at 12.

²³ *Id.* at 33 (explaining that the social cost of greenhouse gas estimates grow over time).

²⁴ *See, e.g.,* DEIS tbl. 3-14.

contributed to 0.43% of total U.S. carbon dioxide emissions in the year 2012.²⁵ In the year 2014, that same project with the same carbon pollution would have contributed to just 0.41% of total U.S. carbon dioxide emissions—a seemingly smaller relative effect, since the total amount of U.S. emissions increased from 2012 to 2014.²⁶ However, because of rising background concentrations of global greenhouse gas stock, and because of growing stresses in physical and economic systems, the marginal climate damages per ton of carbon dioxide (as measured by the social cost of carbon) increased from \$33 in 2012 to \$35 in 2014 (in 2007\$).²⁷ Consequently, those 23 million additional tons would have caused marginal climate damages costing \$759 million in the year 2012, but by 2014 that same 23 million tons would have caused \$805 million in climate damages. To summarize: the percentage comparison to national emissions misleadingly implies that a project adding 23 million more tons of carbon dioxide would have a relatively less significant effect in 2014 than in 2012, whereas monetizing climate damages would accurately reveal that the emissions in 2014 were much more damaging than the emissions in 2012—almost \$50 million more.

Capturing how marginal climate damages change as the background concentration changes is especially important because NEPA requires assessing both present and future impacts.²⁸ Different project alternatives can have different greenhouse gas consequences over time. For instance, different alternatives could have different start dates or other consequential changes in timing. Calculating volumes or percentages, especially on an average annual basis, is insufficient to accurately compare the climate damages of project alternatives with varying greenhouse gas emissions over time. In this resource management plan, the agencies project varying long-term greenhouse gas volumes for different alternatives: for instance, while emissions under Alternative B1 would peak in the immediate future without again reaching peak levels over the remaining twenty years, the agencies project that under Alternative C1 emissions would reach their peak in 2037.²⁹ And for all alternative scenarios, the agencies project varying emissions on a year-over-year basis, and so simply averaging annual greenhouse gas emissions, as the agencies do,³⁰ does not properly capture the relative impacts of each alternative.

This problem would be easily solved by applying the social cost of greenhouse gases metric, which seamlessly accounts for timing differences between different alternatives. By factoring in projections of the increasing global stock of greenhouse gases as well as

²⁵ Total U.S. carbon dioxide emissions in 2012 were 5,366.7 million metric tons (for all greenhouse gases, emissions were 6,529 MMT CO₂ eq). See EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016* at ES-6, tbl. ES-2 (2018).

²⁶ Total U.S. carbon dioxide emissions in 2014 were 5,568.8 million metric tons (and for all greenhouse gases, 6,763 MMT CO₂ eq.). *Id.*

²⁷ Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* 25 tbl. A1 (2016) (calculating the central estimate at a 3% discount rate), https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf [hereinafter 2016 TSD].

²⁸ NEPA requires agencies to weigh the “relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity,” as well as “any irreversible and irretrievable commitments of resources.” 42 U.S.C. § 4332(2)(C).

²⁹ Compare DEIS tbl. J-5 with *id.* tbl. J-6.

³⁰ See, e.g., *id.* tbl. 3-14.

increasing stresses to physical and economic systems, the social cost of greenhouse gas metrics enable accurate and transparent comparisons of projects with varying greenhouse gas emissions over time.

Monetization Provides the Required Informational Context that Volume Estimates Alone Lack

NEPA requires sufficient informational context. Yet the limited context that the agencies provide for the plan's projected greenhouse gas emissions—namely, comparing such totals to largely irrelevant volumes of greenhouse gas emissions including the U.S. and global greenhouse gas emissions³¹—provides a confusing and inadequate picture that attempts to minimize the impacts of the plan's substantial emissions. Indeed, in a country of over 300 million people and over 6.5 billion tons of annual greenhouse gas emissions, it is far too easy to make highly significant effects appear relatively trivial.³² For example, presenting all weather-related deaths as less than 0.1% of total U.S. deaths makes the risk of death by weather event sound trivial, but in fact that figure represents over 2,000 premature deaths per year³³—hardly an insignificant figure.³⁴ As the U.S. Court of Appeals for the Fifth Circuit recently observed, even a seemingly “very small portion” of a “gargantuan source of [harmful] pollution” may nevertheless “constitute[] a gargantuan source of [harmful] pollution on its own terms.”³⁵ Indeed, as the District of Montana recently explained, “[t]he global nature of climate change and greenhouse-gas emissions means that any single lease sale or BLM project likely will make up a negligible percent of state and nation-wide greenhouse gas emissions.”³⁶ In other words, percentages can be misleading and can be manipulated by the choice of the denominator; what matters is the numerator's actual contribution to total harm.³⁷

For example, the presentation of the resource management plan's average annual emissions as just 0.03% of global emissions—or 0.2% of U.S. emissions³⁸—makes a substantial and incredibly costly amount of emissions seem inconsequential. As described by Professor Cass Sunstein—drawing from the work of recent Nobel laureate economist Richard Thaler—a well-documented mental heuristic called “probability neglect” causes people to irrationally reduce such small probability risks entirely down to zero.³⁹ People

³¹ *Id.* tbl. 3-15.

³² California CEQA guidance, Final Adopted Text for Revisions to the CEQA Guidelines § 15064.4, *available at* http://resources.ca.gov/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf. (“A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions.”).

³³ *Compare* Nat'l Ctr. for Health Stat., Ctrs. for Disease Control & Prevention, *Death Attributed to Heat, Cold, and Other Weather Events in the United States, 2006-2010* at 1 (2014) (reporting about 2000 weather-related deaths per year) *with* Nat'l Ctr. for Health Stat., *Deaths and Mortality*, <https://www.cdc.gov/nchs/fastats/deaths.htm> (reporting about 2.7 million U.S. deaths per year total).

³⁴ The public willingness to pay to avoid mortality is typically estimated at around \$9.6 million (in 2016\$). *See, e.g.*, 83 Fed. Reg. 12,086, 12,098 (Mar. 19, 2018) (U.S. Coast Guard rule using the Department of Transportation's value of statistical life in a recent analysis of safety regulations). Losing 2,000 lives prematurely to weather-related events is equivalent to a loss of public welfare worth over \$19 billion per year.

³⁵ *Southwestern Elec. Power Co. v. EPA*, 920 F.3d 999, 1032 (5th Cir. 2019).

³⁶ *WildEarth Guardians v. BLM*, 4:18-cv-00073, at *28–29 (D. Mont. May 1, 2020).

³⁷ *California*, 2020 WL 4001480, at *36 (“[F]raming sources as less than 1% of global emissions is dishonest and a prescription for climate disaster.” (citation omitted)).

³⁸ DEIS tbl. 3-15.

³⁹ Cass R. Sunstein, *Probability Neglect: Emotions, Worst Cases, and Law*, 112 Yale L. J. 61, 63, 72 (2002).

have significant “difficulty understanding a host of numerical concepts, especially risks and probabilities.”⁴⁰ By presenting large quantities of emissions—more than 300 million metric tons—as a tiny percentage representing 0.03% percent or a much larger total, the DEIS is likely to cause stakeholders to misunderstand the true significance of these emissions and treat them as meaningless. By comparison, through monetization it becomes clear that, for example, annual gross emissions from the project could cause about \$860 million per year in climate damages.⁴¹

Economic theory also explains why monetization is a much better tool than mere volume estimates to provide the necessary contextual information on climate damages. For one, a well-documented cognitive bias known as “salience bias,” as explained by Nobel laureate Daniel Kahneman, among others, causes individuals to focus more on information that is more prominent, and disregard information that is less prominent.⁴² Studies show that salience bias is a critical obstacle for environmental protection and efforts to mitigate climate change: One study, for instance, found that individuals prioritized high-salient but less effective water-conservation measures (such as taking shorter showers) over low-salient but more effective measures (such as replacing toilets or retrofitting washers).⁴³ Providing information in a manner that gives it proper salience and context—like here, reporting climate impacts as cumulative estimates of monetary damages rather than miniscule percentages of global emissions—will allow individuals to afford it sufficient attention and rational consideration. Especially when other effects are monetized, failing to monetize climate effects will decrease their relative salience in ways that makes it too easy for decision-makers and the public to disregard important climate effects.

Abstract volume estimates also fail to give people the required informational context due to another well-documented mental heuristic called “scope neglect.” Scope neglect, as explained by Nobel laureate Daniel Kahneman, among others, causes people to ignore the size of a problem when estimating the value of addressing the problem. For example, in one often-cited study, subjects were unable to meaningfully distinguish between the value of saving 2,000 migratory birds from drowning in uncovered oil ponds, as compared to saving 20,000 birds.⁴⁴ As the Environmental Protection Agency’s website explains, “abstract measurements” of so many tons of greenhouse gases can be rather inscrutable for the public, unless “translat[ed] . . . into concrete terms you can understand.”⁴⁵

By failing to contextualize greenhouse gas emissions in the DEIS, the agencies potentially mislead the reader into believing that there would be no climate effects from the resource management plan, or that the effects would be extremely limited. As a result of scope

⁴⁰ Valerie Reyna & Charles Brainerd, *Numeracy, Ratio Bias, and Denominator Neglect in Judgments of Risk and Probability*, 18 *Learning & Individual Differences* 89 (2007).

⁴¹ See *supra* note 6 and accompanying text.

⁴² Daniel Kahneman et al., *Judgment Under Uncertainty: Heuristics and Biases* (1982).

⁴³ Shahzeen Z. Attari, *Perceptions of Water Use*, 111 *Proc. Nat’l Acad. Scis.* 5129 (2014).

⁴⁴ Daniel Kahneman et al., *Economic Preferences or Attitude Expressions? An Analysis of Dollar Responses to Public Issues*, 19 *J. RISK & UNCERTAINTY* 203, 212–13 (1999).

⁴⁵ EPA, *Greenhouse Gas Equivalencies Calculator*, available at <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator> (last updated Dec. 2018) (“Did you ever wonder what reducing carbon dioxide (CO₂) emissions by 1 million metric tons means in everyday terms? The greenhouse gas equivalencies calculator can help you understand just that, translating abstract measurements into concrete terms you can understand[.]”).

neglect, for instance, many decisionmakers and members of the public may be unable to meaningfully contextualize the impact of more than 15 million metric tons of carbon dioxide equivalent into the atmosphere each year. While decisionmakers and the public can certainly tell this is a non-zero number, without any context it may be difficult to weigh the climate risks to which this volumetric estimate equates. In contrast, the plan's climate risks would be readily discernible through application of the social cost of greenhouse gas metrics. While the impact of releasing over 15 million metric tons of carbon dioxide equivalent annually into the atmosphere may seem indiscernible, that impact is clearly conveyed by explaining that such a figure represents approximately \$860 million per year in annual climate damages.⁴⁶

In general, non-monetized effects are often irrationally treated as worthless.⁴⁷ On several occasions, courts have struck down administrative decisions for failing to give weight to non-monetized effects.⁴⁸ Most relevantly, in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the U.S. Court of Appeals for the Ninth Circuit found it arbitrary and capricious to give zero value “to the most significant benefit of more stringent [fuel-economy] standards: reduction in carbon emissions.”⁴⁹ Monetizing climate damages provides the informational context required by NEPA, whereas a simple tally of emissions volume and a qualitative, generic description of climate change are misleading and fail to give the public and decisionmakers the required information about the magnitude of discrete climate effects.⁵⁰ Thus, while the agencies report only volumetric emission projections throughout the DEIS, the social cost of greenhouse gases metrics in fact convey the plan's actual climate effects and contextualize the significance in ways that quantification alone cannot, and thus should be utilized to satisfy the agencies' obligations under NEPA.

Climate Effects Must Be Monetized If Other Costs and Benefits Are Monetized

Though NEPA does not always require a full and formal cost-benefit analysis,⁵¹ agencies' approaches to assessing costs and benefits must be balanced and reasonable. Courts have

⁴⁶ See *supra* note 6 and accompanying text.

⁴⁷ Richard Revesz, *Quantifying Regulatory Benefits*, 102 Cal. L. Rev. 1424, 1434–35, 1442 (2014).

⁴⁸ See *id.* at 1428, 1434.

⁴⁹ 538 F.3d at 1199.

⁵⁰ See 42 U.S.C. § 4332(2)(B) (requiring agencies to “identify and develop methods and procedures . . . which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations”).

⁵¹ 40 C.F.R. § 1502.22 (“[T]he weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis.”); but see e.g., *Sierra Club v. Sigler*, 695 F.2d 957, 978–79 (5th Cir. 1983) (holding that NEPA “mandates at least a broad, informal cost-benefit analysis,” and so agencies must “fully and accurately” and “objectively” assess environmental, economic, and technical costs); *Chelsea Neighborhood Ass'ns v. U.S. Postal Serv.*, 516 F.2d 378, 387 (2d Cir. 1975) (“NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities.”); *Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1113 (D.C. Cir. 1971) (“NEPA mandates a rather finely tuned and ‘systematic’ balancing analysis” of “environmental costs” against “economic and technical benefits”); *Nat'l Wildlife Fed. v. Marsh*, 568 F. Supp. 985, 1000 (D.D.C. 1983) (“The cost-benefit analysis of NEPA is concerned primarily with environmental costs. . . . A court may examine the cost-benefit analysis only as it bears upon the function of insuring that the agency has examined the environmental consequences of a proposed project.”).

warned agencies, for example, that an agency cannot selectively monetize benefits in support of its decision while refusing to monetize the costs of its action.⁵²

In *High Country Conservation Advocates v. Forest Service*, for instance, the U.S. District Court of Colorado found that it was “arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible.”⁵³ The court explained that, to support a decision on coal mining activity, the agencies had “weighed several specific economic benefits—coal recovered, payroll, associated purchases of supplies and services, and royalties”—but arbitrarily failed to monetize climate costs using the readily available social cost of carbon protocol.⁵⁴ Similarly, in *Montana Environmental Information Center v. Office of Surface Mining (MEIC v. OSM)*, the U.S. District Court of Montana followed the lead set by *High Country* and likewise held an environmental assessment to be arbitrary and capricious because it quantified the benefits of action (such as employment payroll, tax revenue, and royalties) while failing to use the social cost of carbon to quantify the costs.⁵⁵

High Country and *MEIC v. OSM* were simply the latest applications of a broader line of case law in which courts find it arbitrary and capricious to apply inconsistent protocols for analyzing some effects compared to others, especially when the inconsistency obscures some of the most significant effects.⁵⁶ For example, in *Center for Biological Diversity v.*

⁵² *High Country Conservation Advocates*, 52 F. Supp. 3d at 1191; accord *MEIC v. Office of Surface Mining*, 274 F. Supp. 3d at 1094–99 (holding it was arbitrary for the agency to quantify benefits in an EIS while failing to use the social cost of carbon to quantify costs, as well as arbitrary to imply there would be no effects from greenhouse gas emissions).

⁵³ 52 F. Supp. 3d at 1191.

⁵⁴ *Id.*

⁵⁵ 274 F. Supp. 3d at 1094–99 (also holding that it was arbitrary to imply that there would be zero effects from greenhouse gas emissions). In a recent case from the Northern District of California, moreover, the court found that it violated NEPA for an agency to monetize economic benefits while only accounting for a slim fraction of global climate damages. *California*, 2020 WL 4001480, at *36 (“It is arbitrary for an agency to quantify an action’s benefits while ignoring its costs where tools exist to calculate those costs.”).

⁵⁶ Other cases from different courts that have declined to rule against failures to use the social cost of carbon in NEPA analyses are all distinguishable by the scale of the action or by whether other effects were quantified and monetized in the analysis. See, e.g., *League of Wilderness Defenders v. Connaughton*, No. 3:12-cv-02271-HZ (D. Ore., Dec. 9, 2014); *EarthReports v. FERC*, 828 F.3d 949 (D.C. Cir. 2016); *WildEarth Guardians v. Jewell*, 1:16-CV-00605-RJ, at 23–24, (D.N.M. Feb. 16, 2017).

In *WildEarth Guardians v. Zinke*, while the U.S. District Court for the District of Columbia stopped short of requiring BLM to use the social cost of carbon, it issued its holding on very narrow grounds. Specifically, the court declined to side with plaintiffs that “it was arbitrary and capricious for BLM to discuss the economic benefits of oil and gas drilling without quantifying their economic costs” by using the social cost of carbon protocol. 368 F. Supp.3d 41, 78 (D.D.C. Mar. 19, 2019). However, the court did *not* hold that BLM acted consistently in choosing to monetize benefits without monetizing costs; rather, it held that BLM’s treatment of economic benefits was so “sparse[]” and “ cursory” that the precedent established in *High Country Conservation Advocates v. Forest Service* could be differentiated. *Id.* But several important distinguishing arguments apply. First, the inconsistent treatment of costs and benefits is not the only reason why agencies should use the social cost of greenhouse gases to assess climate damages in NEPA reviews. The court never considered whether using the social cost of greenhouse gases was necessary or appropriate to fulfill the obligations and goals of NEPA: to assess a project’s actual real-world impacts, to weigh the intensity and significance of a project’s contributions to such impacts, and to give meaningful context to the information presented. Second, the court’s consideration was incomplete on the issue of inconsistent treatment of costs and benefits. It is not clear why the paltry size of the lease’s economic benefits should excuse BLM from inconsistently treating costs and failing to apply a readily available and easy-to-use tool to monetize the lease’s hugely significant climate costs. *High Country*’s ruling turned not on the size of the monetized benefits but on the inconsistent treatment of costs and benefits. Furthermore, the court overlooked other portions of the original EAs and the tiered EISs that monetized and relied on larger economic benefits to much greater extent. The D.C.

National Highway Traffic Safety Administration, the U.S. Court of Appeals for the Ninth Circuit ruled that, because the agency had monetized other uncertain costs and benefits of its vehicle fuel efficiency standard—like traffic congestion and noise costs—its “decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious.”⁵⁷ Specifically, it was arbitrary to “assign[] no value to *the most significant benefit* of more stringent [vehicle fuel efficiency] standards: reduction in carbon emissions.”⁵⁸ When an agency bases a decision on cost-benefit analysis, it is arbitrary to “put a thumb on the scale by undervaluing the benefits and overvaluing the costs.”⁵⁹ Similarly, the U.S. Court of Appeals for the District of Columbia Circuit has chastised agencies for “inconsistently and opportunistically fram[ing] the costs and benefits of the rule [and] fail[ing] adequately to quantify the certain costs or to explain why those costs could not be quantified”;⁶⁰ and the U.S. Court of Appeals for the Tenth Circuit has remanded an environmental impact statement because “unrealistic” assumptions “misleading[ly]” skewed comparison of the project’s positive and negative effects.⁶¹

Here, the DEIS monetizes economic benefits similar to those highlighted in *High Country* and *MEIC*, including total output, employment, labor income (both regionally and in total), and government revenues such as royalties and both state and federal taxes.⁶² The agencies do not sufficiently justify this inconsistent approach to monetizing some effects but not others, but try to skirt the precedent set in the cases discussed above by labeling these projections as “economic impact[s]” rather than costs or benefits.⁶³ First, as explained in *MEIC v. OSM*, this is a semantical “distinction without a difference.”⁶⁴ Indeed, NEPA regulations group all impacts—including economic, social, ecological, and public health—under the same category of “effects,”⁶⁵ and NEPA requires the agencies to discuss all of these effects in as much detail as possible. Whether an effect is a cost, benefit, or transfer, if monetization is the best way to assess that effect’s significance and contextualize its precise impacts, then monetization is also the best way to comply with NEPA’s obligations. Second, the agencies *have* calculated the market value of oil and gas production and presented it as the plan’s “total output.”⁶⁶ In a competitive market, like for coal, oil, or gas, the market price

District Court also deferred to BLM’s so-called “reasoned explanations,” *id.*, yet failed to recognize that in *High Country*, the District of Colorado also considered and dismissed the post-hoc attempt to argue that the social cost of carbon protocol was too imprecise or controversial to use because of the range of estimates. 52 F. Supp. 3d 1174, 1192 (D. Colo. 2014). Finally, the court in *WildEarth v. Zinke* never discussed other important case law, such as *MEIC v. OSM*. Ultimately, the court instructed BLM on remand to “reassess” whether the social cost of greenhouse gas protocol would “contribute to informed decisionmaking” and ensure more accurate analysis as required by NEPA, 368 F. Supp.3d at 79 n.31. The court believed that “the protocol may one day soon be a necessary component of NEPA analyses,” *id.*—and, indeed, that day has already arrived.

⁵⁷ 538 F.3d 1172, 1203 (9th Cir. 2008).

⁵⁸ *Id.* at 1199.

⁵⁹ *Id.* at 1198.

⁶⁰ *Bus. Roundtable v. SCC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011).

⁶¹ *Johnston v. Davis*, 698 F.2d 1088, 1094–95 (10th Cir. 1983)

⁶² DEIS tbls. 3-50 to -52.

⁶³ *Id.* at 3-2 (“Any increased economic activity, in terms of revenue, employment, labor income, total value added, and output, that is expected to occur with the proposed action is simply an economic impact, rather than an economic benefit.”).

⁶⁴ 274 F. Supp. 3d at 1096 n.9.

⁶⁵ 40 C.F.R. §1508.1(g).

⁶⁶ See DEIS tbl. 3-50.

is typically thought to reflect aggregate willingness to pay based on social utility. Therefore, in calculating and reporting total output, the agencies have presented a monetized estimate of the supposed social benefits of the resource management plan.

As detailed further below, the IWG's approach presents a readily available tool to monetize the effects of greenhouse gas emissions based on peer-reviewed inputs and widely accepted assumptions. Agencies are every bit as capable of monetizing climate damages as they are of monetizing socioeconomic impacts. The agencies therefore violate NEPA by monetizing social and economic effects in the DEIS while refusing to monetize climate impacts.

B. The Social Cost of Greenhouse Gas Metric Is Appropriate for Analyzing and Disclosing the Significance of This Plan

Seemingly anticipating the objections presented above, the agencies argue that they cannot monetize the resource management plan's effects on greenhouse gas emissions because "there are no feasible and reliable tools to predict the impacts that [greenhouse gas] emissions from an individual project or group of projects would have on global, regional, or local climate."⁶⁷ This statement, however, is simply incorrect: the social cost of greenhouse gas protocol is exactly such a tool to monetize the incremental climate impacts of specific projects or plans, and to contextualize the magnitude of those impacts. NEPA requires the agencies to use the best available science to support their NEPA analysis, and the social cost metrics remain the best estimates yet produced by the federal government for monetizing the impacts of greenhouse gas emissions and are "generally accepted in the scientific community."⁶⁸

Monetization Is Appropriate and Useful in Any Decision with Significant Climate Impacts, Not Just Regulations

The agencies argue that use of the IWG's social cost metrics is inappropriate for this plan because it "is not a rule making for which the [social cost of carbon] protocol was originally developed."⁶⁹ But this argument misses the point: The agencies fail to explain why those metrics should not be used in environmental impact statements when they provide the best available method to convey the climate impacts of a plan that would contribute substantially to greenhouse gas emissions.

Indeed, there is nothing in the development of the social cost metrics that would limit applications to other contexts. The social cost of greenhouse gases measures the marginal cost of any additional unit of greenhouse gases emitted into the atmosphere. The government action that precipitated that unit of emissions—a regulation, the granting of a permit, a project approval, or a resource management plan—is irrelevant to the marginal climate damages caused by its emissions. Whether emitted by a leaking pipeline or the extraction process, because of a regulation or a resource management decision, or in Alaska or Maine, the marginal climate damages per unit of emissions remain the same.

⁶⁷ *Id.* at 3-32.

⁶⁸ See 40 C.F.R. § 1502.21(b)(4).

⁶⁹ DEIS at 3-2.

Indeed, the social cost of greenhouse gases has been used by many federal and state agencies in environmental impact reviews⁷⁰ and resource management decisions.⁷¹

The Social Cost of Greenhouse Gas Metrics Provide a Tool to Assess the Significance of Individual Physical Impacts

The social cost of greenhouse gas methodology is well suited to measure the marginal climate damages of individual projects. These protocols were developed to assess the cost of actions with marginal impacts on cumulative global emissions, and the metrics estimate the dollar figure of damages for one extra unit of greenhouse gas emissions. This marginal cost is calculated using integrated assessment models. These models translate emissions into changes in atmospheric greenhouse concentrations, atmospheric concentrations into changes in temperature, and changes in temperature into economic damages. A range of plausible socioeconomic and emissions trajectories are used to account for the scope of potential scenarios and circumstances that may actually result in the coming years and decades. The marginal cost is attained by first running the models using a baseline emissions trajectory, and then running the same models again with one additional unit of emissions. The difference in damages between the two runs is the marginal cost of one additional unit. The approach assumes that the marginal damages from increased emissions will remain constant for small emissions increases relative to gross global emissions. In other words, the monetization tools are in fact perfectly suited to measuring the marginal effects of individual projects or other discrete agency actions.

Some of the incremental impacts on the environment that the social cost of greenhouse gas protocol captures—and which the DEIS fails to meaningfully analyze—include property lost or damaged; impacts to agriculture, forestry, and fisheries; impacts to human health; changes in fresh water availability; ecosystem service impacts; impacts to outdoor recreation and other non-market amenities; and some catastrophic impacts, including potentially rapid sea-level rise, damages at very high temperatures, or unknown events.⁷² A

⁷⁰ For example, in August 2017, the Bureau of Ocean Energy Management called the social cost of carbon “a useful measure to assess the benefits of CO2 reductions and inform agency decisions,” and applied the metric in an environmental impact statement to monetize the emissions difference of about 5 million metric tons per year between the proposed oil and gas development project and the no-action baseline, *Draft Environmental Impact Statement—Liberty Development Project in the Beaufort Sea, Alaska* at 3-129, 4-50 (2017). More generally, agencies have used IWG’s social cost of greenhouse gas estimates not only in scores of rulemakings but also in NEPA analyses for resource management decisions. See Peter Howard & Jason Schwartz, *Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon*, 42 Columbia J. Envtl. L. 203, 270–84 (2017) (listing all uses by federal agencies through July 2016).

⁷¹ States have used the social cost of greenhouse gases in decisions about electricity planning. See Iliana Paul et al., *The Social Cost of Greenhouse Gases and State Policy: A Frequently Asked Questions Guide* (Policy Integrity Report, 2017), http://policyintegrity.org/files/publications/SCC_State_Guidance.pdf.

⁷² These impacts are all included to some degree in the three integrated assessment models (IAMs) used by the IWG (namely, the DICE, FUND, and PAGE models), though some impacts are modeled incompletely, and many other important damage categories are currently omitted from these IAMs. Compare 2010 TSD, *supra* note 17, with Peter Howard, *Omitted Damages: What’s Missing from the Social Cost of Carbon* (Cost of Carbon Project Report, 2014), http://costofcarbon.org/files/Omitted_Damages_Whats_Missing_From_the_Social_Cost_of_Carbon.pdf. For other lists of actual climate effects, including air quality mortality, extreme temperature mortality, lost labor productivity, harmful algal blooms, spread of West Nile virus, damage to roads and other infrastructure, effects on urban drainage, damage to coastal property, electricity demand and supply effects, water supply and quality effects, inland flooding, lost winter recreation, effects on agriculture and fish, lost ecosystem services from coral reefs, and wildfires, see EPA, *Multi-Model Framework for Quantitative Sectoral Impacts Analysis: A Technical Report for the Fourth National Climate Assessment*

key advantage of using the social cost of greenhouse gas tool is that each physical impact—such as sea-level rise and increasing temperatures—need not be assessed in isolation. Instead, the social cost of greenhouse gases tool conveniently groups together a multitude of climate impacts and enables agencies to assess whether all those impacts are cumulatively significant and to then compare those impacts with other impacts or alternatives using a common metric.

The Tons of Greenhouse Gas Emissions at Stake Here Are Clearly Significant

The agencies quantify upstream and downstream greenhouse gas emissions from the plan, amounting to more than 15 million metric tons per year under their proposed alternative.⁷³ But the agencies refuse to take the straightforward next step of applying the social cost of greenhouse gas values to those quantified tons, claiming that they cannot determine the effects of the resource management plan on climate change and minimizing the significance of the plan's emissions by presenting them as only a small percentage of the global concentration of greenhouse gas emissions.⁷⁴

The threshold for monetization, to the extent that it exists at all, is well below the volumetric emissions estimates that the agencies project here. While the projected emissions in this plan total more than 15 million metric tons annually, numerous courts have held that far lower annual emissions totals warrant monetization. For instance, the court in *High Country* found that it was arbitrary for the Forest Service not to monetize the “1.23 million tons of carbon dioxide equivalent emissions [from methane] the West Elk mine emits annually.”⁷⁵ Likewise, in *Center for Biological Diversity*, the Ninth Circuit found that it was arbitrary for the Department of Transportation not to monetize the 35 million metric ton difference in lifetime emissions from increasing the fuel efficiency of motor vehicles⁷⁶: given the estimated lifetime of vehicles sold in the years 2008-2011 (sometimes estimated at about 15 years on average), this could represent as little 2 million metric tons per year. And in a recent environmental impact statement from the Bureau of Ocean Energy Management (“BOEM”), the agency explained that the social cost of carbon was “a useful measure” for a NEPA analysis of an action anticipated to have a difference in greenhouse gas emissions compared to the no-action baseline of about 25 million metric tons over a 5-year period,⁷⁷ or about 5 million metric tons per year.

While there may not be a bright-line test for significance, the emissions the agencies estimate for this plan are significant and warrant monetization. This is especially true since, once emissions have been quantified, the additional step of monetization through

(2017); U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment* (2017); EPA, *Climate Change in the United States: Benefits of Global Action* (2015); Union of Concerned Scientists, *Underwater: Rising Seas, Chronic Floods, and the Implications for U.S. Coastal Real Estate* (2018).

⁷³ See DEIS tbl. 3-14.

⁷⁴ *Id.* tbl. 3-15.

⁷⁵ 52 F. Supp. 3d at 1191 (quoting an e-mail comment on the draft statement for the quantification of tons).

⁷⁶ 538 F.3d at 1187.

⁷⁷ BOEM, *Liberty Development and Production Plan Draft EIS* at 3-129, 4-50 (2017) (89,940,000 minus 64,570,000 is about 25 million).

application of the IWG's cost estimates entails a simple arithmetic calculation.⁷⁸ It is difficult to understand how NEPA's mandate that an agency take a "hard look" at the environmental impacts of its actions can be satisfied if the agencies fail to take the simple step of analyzing the impacts of the emissions that they quantify.

Monetizing Climate Damages Is Appropriate and Useful Regardless of Whether Every Effect Can Be Monetized in a Full Cost-Benefit Analysis

The agencies further argue that use the social cost of greenhouse gases would be inappropriate because, without a full cost-benefit analysis, "[p]roviding solely an SCC cost analysis would be unbalanced, potentially inaccurate, and not useful."⁷⁹ This is mistaken for several reasons. First, as noted above, the agencies have monetized the full benefits of the plan by calculating total output from oil and gas production.⁸⁰ The agencies' attempts to hide behind their failure to monetize the plan's benefits therefore fails.

But even accepting the agencies' premise that they have not monetized the social benefits of the proposed plan, monetizing the plan's negative climate impacts would still provide useful information for decision-makers and the public, and not skew the analysis. In particular, whether or not other effects are monetized, using the social cost of greenhouse gases will facilitate comparison between alternative options along the dimension of climate change. As discussed above, different alternatives could have varying greenhouse gas consequences over time, and monetization provides an appropriate means of comparing plan alternatives along the dimension of climate change.

Monetizing the plan's climate effects could also provide a framework for making decisions when some effects but not others are monetized, through what is not as "break-even analysis." As described in the Office of Management and Budget's *Circular A-4*,⁸¹ which provides guidance to agencies on conducting economic analysis including methods for weighing monetized and qualitative costs and benefits, agencies should carry out a "'break-even' analysis" when it is "not . . . possible to express in monetary units all of the important benefits and costs."⁸² Under such an analysis, the agency considers "[h]ow small could the value of the non-quantified benefits be (or how large would the value of the non-quantified costs need to be) before the rule would yield zero net benefits."⁸³ Such an analysis could be useful here: Even if the agencies may be unable to fully monetize all costs and benefits, they could consider whether the alleged benefits of this proposal are worth the roughly \$860 million in annual climate costs. Particularly given that projected annual output is

⁷⁸ Agencies simply need to multiply their estimate of tons in each year by the IWG's 2016 values for the corresponding year of emissions (adjusted for inflation to current dollars). If the emissions change occurs in the future, agencies would then discount the products back to present value.

⁷⁹ DEIS at 3-2.

⁸⁰ See *supra* note 66 and accompanying text.

⁸¹ OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT OMB CIRCULAR A-4, REGULATORY ANALYSIS (2003). Though *Circular A-4* focuses on agencies' regulatory analyses under Executive Order 12,866, the document nevertheless more generally has distilled best practices on economic analysis and is a useful guide to all agencies undertaking an assessment of costs and benefits.

⁸² *Id.* at 2.

⁸³ *Id.*

substantially less than this climate-cost estimate,⁸⁴ the agencies may reconsider their preference upon proper evaluation of climate costs.

Moreover, even without using something as formal as a break-even analysis, it is clear that monetizing climate damages provides useful information whether or not every effect can be monetized in a full cost-benefit analysis. NEPA regulations acknowledge that when monetization of costs and benefits is “relevant to the choice among alternatives,” “that analysis” can be presented alongside “any analyses of unquantified environmental impacts, values, and amenities.”⁸⁵ In other words, contrary to the agencies’ argument against the use of the social cost of greenhouse gas metrics, the inability to monetize some impacts should not preclude the monetization of impacts—like climate damages—that can be readily monetized.

C. The Agencies Should Use the Interagency Working Group’s 2016 Estimates of the Social Cost of Carbon, the Social Cost of Nitrous Oxide, and the Social Cost of Methane

In 2016, the IWG published updated central estimates for the social cost of greenhouse gases: \$52 per ton of carbon dioxide, \$1,480 per ton of methane, and \$18,500 per ton of nitrous oxide (in 2019 dollars for year 2020 emissions).⁸⁶ Agencies must continue to use estimates of a similar or higher⁸⁷ value in their analyses and decision-making. A recent Executive Order disbanding the IWG—which the agencies credit in part for their decision not to monetize climate impacts⁸⁸—does not change the fact that the IWG estimates still reflect the best available data and methodologies.

IWG’s Methodology Is Rigorous, Transparent, and Based on the Best Available Data

Beginning in 2009, the IWG assembled experts from a dozen federal agencies and White House offices to “estimate the monetized damages associated with an incremental increase in carbon emissions in a given year” based on “a defensible set of input assumptions that are grounded in the existing scientific and economic literature.”⁸⁹ IWG’s methods combined three frequently used models built to predict the economic costs of the physical impacts of each additional ton of carbon.⁹⁰ The models together incorporate such damage categories as: agricultural and forestry impacts, coastal impacts due to sea level rise, impacts from

⁸⁴ See *supra* notes 6–7 and accompanying text.

⁸⁵ 40 C.F.R. § 1502.22.

⁸⁶ U.S. Interagency Working Group on the Social Cost of Greenhouse Gases, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (2016), *available at* https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf; *id.*, Addendum; *available at* https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/august_2016_sc_ch4_sc_n2o_addendum_final_8_26_16.pdf. Though these documents present cost values in 2007\$, we have converted those values to 2019\$ using the Bureau of Labor Statistics’ consumer price index data, which is available at <https://data.bls.gov/timeseries/CUUR0000SA0>. As this data provides, 2007\$ can be converted to 2019\$ by multiplying by approximately 1.233.

⁸⁷ See, e.g., Richard L. Revesz et al., *Global Warming: Improve Economic Models of Climate Change*, 508 NATURE 173 (2014) (explaining that current estimates omit key damage categories and, therefore, are very likely underestimates).

⁸⁸ DEIS at 3-2.

⁸⁹ 2010 TSD, *supra* note 17.

⁹⁰ *Id.* at 5. These models are DICE (the Dynamic Integrated Model of Climate and the Economy), FUND (the Climate Framework for Uncertainty, Negotiation, and Distribution), and PAGE (Policy Analysis of the Greenhouse Effect).

extreme weather events, impacts to vulnerable market sectors, human health impacts including malaria and pollution, outdoor recreation impacts and other non-market amenities, impacts to human settlements and ecosystems, and some catastrophic impacts.⁹¹ IWG ran these models using a baseline scenario including inputs and assumptions drawn from the peer-reviewed literature, and then ran the models again with an additional unit of carbon emissions to determine the increased economic damages.⁹² IWG's social cost of carbon estimates were first issued in 2010 and have been updated several times to reflect the latest and best scientific and economic data.⁹³

Following the development of estimates for carbon dioxide, the same basic methodology was used in 2016 to develop the social cost of methane and social cost of nitrous oxide—estimates that capture the distinct heating potential of methane and nitrous oxide emissions.⁹⁴ These additional metrics used the same economic models, the same treatment of uncertainty, and the same methodological assumptions that IWG applied to the social cost of carbon, and these new estimates underwent rigorous peer-review.⁹⁵

IWG's methodology has been repeatedly endorsed by reviewers. In 2014, the U.S. Government Accountability Office concluded that IWG had followed a “consensus-based” approach, relied on peer-reviewed academic literature, disclosed relevant limitations, and adequately planned to incorporate new information through public comments and updated research.⁹⁶ In 2016 and 2017, the National Academies of Sciences, Engineering, and Medicine issued two reports that, while recommending future improvements to the methodology, supported the continued use of the existing IWG estimates.⁹⁷ And in 2016, the U.S. Court of Appeals for the Seventh Circuit held that the Department of Energy's reliance on IWG's social cost of carbon was reasonable.⁹⁸ It is, therefore, unsurprising that leading economists and climate policy experts have endorsed the IWG's values as the best available estimates.⁹⁹

Furthermore, uncertainty over the values or range of values included in the IWG's social costs of greenhouse gases metric is not a reason to abandon the social cost of greenhouse gas methodologies;¹⁰⁰ quite the contrary, uncertainty supports higher estimates of the

⁹¹ *Id.* at 6–8.

⁹² *Id.* at 24–25.

⁹³ IWG, *Technical Update of the Social Cost of Carbon* at 5–29 (2016). Available at https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf.

⁹⁴ See 2016 IWG Addendum at 2.

⁹⁵ *Id.* at 3.

⁹⁶ Gov't Accountability Office, *Regulatory Impact Analysis: Development of Social Cost of Carbon Estimates* 12–19 (2014). Available at <http://www.gao.gov/assets/670/665016.pdf>.

⁹⁷ Nat'l Acad. Sci., Engineering & Med., *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* 3 (2017), <https://www.nap.edu/read/24651/chapter/1>; Nat'l Acad. Sci., Engineering & Med., *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update* 1–2 (2016); <https://www.nap.edu/read/21898/chapter/1>.

⁹⁸ *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678 (7th Cir. 2016).

⁹⁹ 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); Revesz, *Global Warming: Improve Economic Models of Climate Change*, *supra* note 87.

¹⁰⁰ *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1200 (9th Cir. 2008) (“[W]hile the record shows that there is a range of values, the value of carbon emissions reductions is certainly not zero.”).

social cost of greenhouse gases, because most uncertainties regarding climate change entail tipping points, catastrophic risks, and unknown unknowns about the damages of climate change. Because the key uncertainties of climate change include the risk of irreversible catastrophes, applying an options value framework to the regulatory context strengthens the case for ambitious regulatory action to reduce greenhouse gas emissions.

Not only was justifying omitted climate damages due to uncertainty rejected by the Ninth Circuit in *Center for Biological Diversity*—in which the court explained that “while . . . there is a range of values, the value of carbon emissions reduction is certainly not zero”¹⁰¹—but the range of values recommended by the IWG¹⁰² and endorsed by the National Academies of Sciences¹⁰³ is rather manageable. In 2016, the IWG recommended values at discount rates from 2.5% to 5%, calculated as between \$12 and \$62 for year 2020 emissions.¹⁰⁴ Numerous federal agencies have had no difficulty either applying this range in their environmental impact statements or else focusing on the central estimate at a 3% discount rate.¹⁰⁵ In August 2017, for instance, BOEM applied the IWG’s range of estimates calculated at three discount rates (2.5%, 3%, and 5%) to its environmental impact statement for an offshore oil development plan,¹⁰⁶ and called this range of estimates “a useful measure to assess the benefits of CO₂ reductions and inform agency decisions.”¹⁰⁷

A Recent Executive Order Does Not Change the Requirements to Monetize Climate Damages

In March 2017, President Trump disbanded the IWG and withdrew its technical support documents.¹⁰⁸ Nevertheless, Executive Order 13,783 assumes that federal agencies will continue to “monetiz[e] the value of changes in greenhouse gas emissions” and instructs agencies to ensure such estimates are “consistent with the guidance contained in OMB Circular A-4.”¹⁰⁹ Consequently, while federal agencies no longer benefit from ongoing technical support from the IWG on using the social cost of greenhouse gases, by no means does the new Executive Order imply that agencies should not monetize important effects in

¹⁰¹ 538 F.3d at 1200.

¹⁰² See Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Update* (2016) (hereinafter 2016 TSD).

¹⁰³ See National Academies of Sciences, *Assessment of Approaches to Updating the Social Cost of Carbon* (2016) (hereinafter First NAS Report) (endorsing continued near-term use of the IWG numbers; in 2017, the NAS recommended moving to a declining discount rate, see National Academies of Sciences, *Valuing Climate Damages* (2017) (hereinafter Second NAS Report).

¹⁰⁴ 2016 TSD. The values given here are in 2007\$. The IWG also recommended a 95th percentile value of \$123.

¹⁰⁵ BLM, *Envtl. Assessment—Waste Prevention, Prod. Subject to Royalties, and Res. Conservation* at 52 (2016); BLM, *Final Env'tl. Assessment: Little Willow Creek Protective Oil and Gas Lease*, DOI-BLM-ID-B010-2014-0036-EA, at 82 (2015); Office of Surface Mining, *Final Env'tl. Impact Statement—Four Corners Power Plant and Navajo Mine Energy Project* at 4.2-26 to 4.2-27 (2015) (explaining the social cost of greenhouse gases “provide[s] further context and enhance[s] the discussion of climate change impacts in the NEPA analysis.”); U.S. Army Corps of Engineers, *Draft Env'tl. Impact Statement for the Missouri River Recovery Mgmt. Project* at 3-335 (2016); U.S. Forest Serv., *Rulemaking for Colorado Roadless Areas: Supplemental Final Env'tl. Impact Statement* at 120–23 (Nov. 2016) (using both the social cost of carbon and social cost of methane relating to coal leases); NHTSA EIS, *Available at* http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf at 9-77.

¹⁰⁶ BOEM, *Liberty Development Project: Draft Environmental Impact Statement*, at 4-247 (2017).

¹⁰⁷ *Id.* at 3-129.

¹⁰⁸ Exec. Order No. 13,783 § 5(b), 82 Fed. Reg. 16,093 (Mar. 28, 2017).

¹⁰⁹ *Id.* § 5(c).

their environmental impact statements. The Executive Order does not prohibit agencies from relying on the same choice of models as the IWG, the same inputs and assumptions as the IWG, the same statistical methodologies as the IWG, or the same ultimate values as derived by the IWG. To the contrary, because the Executive Order requires consistency with Circular A-4, as agencies follow the Circular's standards for using the best available data and methodologies, they will necessarily choose similar data, methodologies, and estimates as the IWG, since the IWG's work continues to represent the best available estimates.¹¹⁰ The Executive Order does not preclude agencies from using the same range of estimates as developed by the IWG, so long as the agency explains that the data and methodology that produced those estimates are consistent with Circular A-4 and, more broadly, with standards for rational decision-making.

Similarly, the Executive Order's withdrawal of the Council on Environmental Quality's guidance on greenhouse gases,¹¹¹ does not—and legally cannot—remove agencies' statutory requirement to fully disclose the environmental impacts of greenhouse gas emissions. As the Council on Environmental Quality explained in its withdrawal, the "guidance was not a regulation," and "[t]he withdrawal of the guidance does not change any law, regulation, or other legally binding requirement."¹¹² In other words, when the guidance originally recommended the appropriate use of the social cost of greenhouse gases in environmental impact statements,¹¹³ it was simply explaining that the social cost of greenhouse gases is consistent with longstanding NEPA regulations and case law, all of which are still in effect today. "The Executive Order in and of itself has no legal impact on the consensus that IWG's estimates constitute the best available science about monetizing the impacts of greenhouse gas emissions."¹¹⁴

Notably, some agencies under the Trump administration have continued to use the IWG estimates even following the Executive Order. For example, in August 2017, the BOEM called the social cost of carbon "a useful measure" and applied it to analyze the consequences of offshore oil and gas drilling.¹¹⁵ In July 2017, the Department of Energy used the IWG's estimates for carbon and methane emissions to analyze energy efficiency regulation, describing the social cost of methane as having "undergone multiple stages of peer review."¹¹⁶ And earlier this year, the Department of Energy issued final rules using the

¹¹⁰ See Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 SCIENCE 6352 (2017) (explaining that, even after Trump's Executive Order, the social cost of greenhouse gas estimate of around \$50 per ton of carbon dioxide is still the best estimate).

¹¹¹ Exec. Order 13,783 § 3(c).

¹¹² 82 Fed. Reg. 16,576, 16,576 (Apr. 5, 2017).

¹¹³ See CEQ, *Revised Draft Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* at 16 (Dec. 2014), available at https://obamawhitehouse.archives.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf ("[A]lthough developed specifically for regulatory impact analyses, the Federal social cost of carbon, which multiple Federal agencies have developed and used to assess the costs and benefits of alternatives in rulemakings, offers a harmonized, interagency metric that can provide decisionmakers and the public with some context for meaningful NEPA review.").

¹¹⁴ *California*, 2020 WL 4001480, at *25.

¹¹⁵ *Draft Environmental Impact Statement—Liberty Development Project in the Beaufort Sea, Alaska* at 3-129.

¹¹⁶ Energy Conservation Program: Energy Conservation Standards for Walk-In Cooler and Freezer Refrigeration Systems, 82 Fed. Reg. 31,808, 31,811, 31,857 (July 10, 2017).

IWG's social cost of carbon, calling the protocol "an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year," and further adding that the metric is "intended to include (but is not limited to) climate-change-related changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services."¹¹⁷

Two agencies have developed new "interim" values of the social cost of greenhouse gases following the Executive Order. Relying on faulty economic theory, these "interim" estimates drop the social cost of carbon from \$52 per ton in year 2020 down to as little as \$1 per ton, and drop the social cost of methane from \$1480 per ton in year 2020 down to \$58. These "interim" estimates are inconsistent with accepted science and economics; the IWG's 2016 estimates remain the best available estimates. The IWG's methodology and estimates have been repeatedly endorsed by reviewers as transparent, consensus-based, and firmly grounded in the academic literature.

By contrast, the "interim" estimates ignore the interconnected, global nature of our climate-vulnerable economy,¹¹⁸ and obscure the devastating effects that climate change will have on younger and future generations. Indeed, as the U.S. Government Accountability Office concluded in a recent report, current agency estimates that seek to capture only the domestic impacts of climate change fail to "us[e] the best available science."¹¹⁹ Accordingly, the agencies should not use the "interim" social cost of greenhouse gas estimates because of their methodological flaws.

Uncertainty Supports Higher Social Cost of Greenhouse Gas Estimates, and Is Not a Reason to Abandon the Metric

Generally, uncertainty is *not* a reason to abandon the social cost of greenhouse gas methodologies.¹²⁰ Quite the contrary, uncertainty supports higher estimates of the social cost of greenhouse gases, because most uncertainties regarding climate change entail tipping points, catastrophic risks, and unknown unknowns about the damages of climate change. Because the key uncertainties of climate change include the risk of irreversible catastrophes, applying an options value framework to the regulatory context strengthens the case for ambitious regulatory action to reduce greenhouse gas emissions.

There are numerous well-established, rigorous analytical tools available to help agencies characterize and quantitatively assess uncertainty, such as Monte Carlo simulations, and the IWG's social cost of greenhouse gas protocol incorporates those tools. To further deal with uncertainty, the IWG recommended to agencies a range of four estimates: three central or mean-average estimates at a 2.5%, 3%, and 5% discount rate respectively, and a

¹¹⁷ Dep't of Energy, Energy Conservation Program: Energy Conservation Standards for Uninterruptible Power Supplies, 85 Fed. Reg. 1477, 1477, 1480 (Jan. 10, 2020).

¹¹⁸ See e.g. U.S. COMMODITY FUTURES TRADING COMM'N, CLIMATE-RELATED MKT. RISK SUBCOMM., MANAGING CLIMATE RISK IN THE U.S. FINANCIAL SYSTEM 1 (Sept. 2020) (explaining that initiatives to better manage climate-related market and financial risks "are in the best interest of the [United States], particularly since neither climate change nor financial crises respect national boundaries").

¹¹⁹ U.S. Gov't Accountability Office, Social Cost of Carbon: Identifying a Federal Entity to Address the National Academies' Recommendations Could Strengthen Regulatory Analysis, GAO-20-254, at 15 (June 2020).

¹²⁰ *Center for Biological Diversity*, 538 F.3d at 1200 ("[W]hile the record shows that there is a range of values, the value of carbon emissions reductions is certainly not zero.").

95th percentile value at the 3% discount rate. While the IWG’s technical support documents disclosed fuller probabilities distributions, these four estimates were chosen by agencies to be the focus for decisionmaking. In particular, application of the 95th percentile value was not part of an effort to show the probability distribution around the 3% discount rate; rather, the 95th percentile value serves as a methodological shortcut to approximate the uncertainties around low-probability but high-damage, catastrophic, or irreversible outcomes that are currently omitted or undercounted in the economic models.

The shape of the distribution of climate risks and damages includes a long tail of lower-probability, high-damage, irreversible outcomes due to “tipping points” in planetary systems, inter-sectoral interactions, and other deep uncertainties. Climate damages are not normally distributed around a central estimate, but rather feature a significant right skew toward catastrophic outcomes. In fact, a 2015 survey of economic experts concludes that catastrophic outcomes are increasingly likely to occur.¹²¹ Because the three integrated assessment models that the IWG’s methodology relied on are unable to systematically account for these potential catastrophic outcomes, a 95th percentile value was selected instead to account for such uncertainty. There are no similarly systematic biases pointing in the other direction which might warrant giving weight to a low-percentile estimate.

Additionally, the 95th percentile value addresses the strong possibility of widespread risk aversion with respect to climate change. The integrated assessment models do not reflect that individuals likely have a higher willingness to pay to reduce low-probability, high-impact damages than they do to reduce the likelihood of higher-probability but lower impact damages with the same expected cost. Beyond individual members of society, governments also have reasons to exercise some degree of risk aversion to irreversible outcomes like climate change.

The National Academies of Sciences, Engineering, and Medicine did recommend that the IWG document its full treatment of uncertainty in an appendix and disclose low-probability as well as high-probability estimates of the social cost of greenhouse gases.¹²² However, that does not mean it would be appropriate for individual agencies to rely on low-percentile estimates to justify decisions. While disclosing low-percentile estimates in a sensitivity analysis may promote transparency, relying on such an estimate for decision-making—in the face of contrary guidance from the best available science and economics on uncertainty and risk—would not be a “credible, objective, realistic, and scientifically balanced” approach to uncertainty, as required by Circular A-4.¹²³

In short, the 95th percentile estimate attempts to capture risk aversion and uncertainties around lower-probability, high-damage, irreversible outcomes that are currently omitted

¹²¹ Peter Howard and Derek Sylvan, *Expert Consensus on the Economics of Climate Change 2* (2015), available at <https://policyintegrity.org/files/publications/ExpertConsensusReport.pdf>. (“Experts believe that there is greater than a 20% likelihood that this same climate scenario would lead to a ‘catastrophic’ economic impact (defined as a global GDP loss of 25% or more).”).

¹²² Nat’l Acad. Of Sci., *Assessment of Approaches to Updating the Social Cost of Carbon* 49 (2016) (“[T]he IWG could identify a high percentile (e.g., 90th, 95th) and corresponding low percentile (e.g., 10th, 5th) of the SCC frequency distributions on each graph.”).

¹²³ CIRCULAR A-4 at 39.

or undercounted by the models. There is no need to balance out this estimate with a low-percentile value, because the reverse assumptions are not reasonable:

- There is no reason to believe the public or the government will be systematically risk seeking with respect to climate change.¹²⁴
- The consequences of overestimating the risk of climate damages (i.e., spending more than we need to on mitigation and adaptation) are not nearly as irreversible as the consequences of underestimating the risk of climate damage (i.e., failing to prevent catastrophic outcomes).
- Though some uncertainties might point in the direction of lower social cost of greenhouse gas values, such as those related to the development of breakthrough adaptation technologies, the models already account for such uncertainties around adaptation; on balance, most uncertainties strongly point toward higher, not lower, social cost of greenhouse gas estimates.¹²⁵
- There is no empirical basis for any “long tail” of potential benefits that would counteract the potential for extreme harm associated with climate change.

Moreover, even the best existing estimates of the social cost of greenhouse gases are likely underestimated because the models currently omit many significant categories of damages—such as depressed economic growth, pests, pathogens, erosion, air pollution, fire, dwindling energy supply, health costs, political conflict, and ocean acidification, as well as tipping points, catastrophic risks, and unknown unknowns—and because of other methodological choices.¹²⁶

Consequently, uncertainty suggests an even higher social cost of greenhouse gases and so is not a reason to abandon the metric, which—per the agencies’ flawed approach in the DEIS—misleadingly suggests that climate damages are worthless.

¹²⁴ As a 2009 survey revealed, the vast majority of economic experts support the idea that “uncertainty associated with the environmental and economic effects of greenhouse gas emissions increases the value of emission controls, assuming some level of risk-aversion.” See *Expert Consensus*, *supra* note 121, at 3 (citing 2009 survey).

¹²⁵ See Revesz, *Global Warming: Improve Economic Models of Climate Change*, *supra* note 87. R. Tol, *The Social Cost of Carbon*, 3 Annual Rev. Res. Econ. 419 (2011) (“[U]ndesirable surprises seem more likely than desirable surprises. Although it is relatively easy to imagine a disaster scenario for climate change—for example, involving massive sea level rise or monsoon failure that could even lead to mass migration and violent conflict—it is not at all easy to imagine that climate change will be a huge boost to human welfare.”).

¹²⁶ See Revesz, *Global Warming: Improve Economic Models of Climate Change*, *supra* note 87; Peter Howard, *Omitted Damages: What’s Missing from the Social Cost of Carbon* (Cost of Carbon Project Report, 2014); Frances C. Moore & Delavane B. Diaz, *Temperature Impacts on Economic Growth Warrant Stringent Mitigation Policy*, 5 NATURE CLIMATE CHANGE 127 (2015) (demonstrating SCC may be biased downward by more than a factor of six by failing to include the climate’s effect on economic growth).

Sincerely,

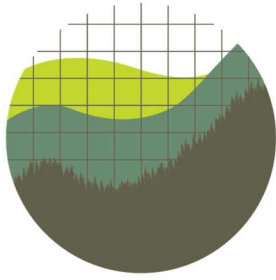
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* No part of this document purports to present the views, if any, of New York University School of Law.

Exhibit B



Institute *for*
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

July 9, 2020

To: Bureau of Land Management, Utah State Office
Subject: Comments on the Draft Environmental Assessment for the Proposed September 2020 Competitive Oil and Gas Lease Sale, Docket No. DOI-BLM-UT-0000-2020-0004-EA

The Institute for Policy Integrity at New York University School of Law¹ respectfully submits comments on the Draft Environmental Assessment for the Bureau of Land Management's (BLM) Proposed September 2020 Competitive Oil and Gas Lease Sale in Utah. In this proposed lease sale, BLM Utah is contemplating offering 77 parcels consisting of 114,049.77 acres located in Juab, Sanpete, Sevier, Emery, Duchesne, Grand, Uintah and San Juan counties in the BLM's Moab, Richfield, Vernal, Price, and Fillmore Field Offices. Many of the tracts that would be offered for lease are located in areas valuable for recreation, wildlife, environmental conservation, cultural use, and tourism. Moreover, many of these tracts have low oil and gas development potential.

In this draft Environmental Assessment (EA), BLM fails to uphold its statutory duty to manage public lands for multiple use, and fails to consider more limited leasing scenarios pursuant to the National Environmental Policy Act (NEPA). Additionally, the agency impermissibly fails to consider the informational value of delay, and is therefore unlikely to fulfill its duty to obtain "fair market value" for the nominated parcels under the Federal Land Policy and Management Act (FLPMA) and Mineral Leasing Act (MLA). Moreover, BLM disregards many of the likely adverse economic effects of the proposed lease sale on the local community. If BLM fails to correct these errors, its analysis would be rendered arbitrary and capricious.

Specifically, in this EA:

- BLM fails to properly account for multiple-use values, in violation of FLPMA;
- BLM fails to analyze several viable alternatives that would reduce environmental and social harms and protect other multiple uses, violating NEPA;
 - BLM should have analyzed one or more environmentally-protective development scenarios that would offer fewer tracts for lease,

¹ This document does not purport to represent the views, if any, of New York University School of Law.

- particularly in popular recreation and scenic areas, including areas close to national parks;
 - BLM should have analyzed the option of deferring some of these parcels to a later date, especially those that have low development potential, in order to account for option value, or the informational value of delay. In particular, BLM's failure to assess option value makes it likely that the agency will violate FLPMA and the MLA by failing to obtain "fair market value" for these parcels;
- BLM fails to give due consideration to adverse economic impacts on the local community, as required by NEPA.

Should BLM proceed with the lease sale based on such incomplete and flawed analysis, the lease sale would be arbitrary and capricious.

I. BLM Fails to Properly Account for Multiple-Use Values in this EA, in Violation of FLPMA.

Enacted in 1976, the Federal Land Policy and Management Act (FLPMA) directs that federal land management adhere to the principles of multiple use and sustained yield.² FLPMA explains that "multiple use" requires "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output."³ The statute also mandates that the Department of the Interior "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."⁴

BLM must manage its lands for a variety of uses, not primarily for oil and gas development.⁵ One of the stated goals of FLPMA is to "preserve and protect certain public lands in their natural condition."⁶ As the Tenth Circuit has held, "[i]t is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses."⁷

² 43 U.S.C. § 1701(a)(7) (instructing that "management be on the basis of multiple use and sustained yield unless otherwise specified by law"); *see also Our Mission*, U.S. BUREAU OF LAND MANAGEMENT, <https://perma.cc/MH7Q-W8C7> ("Congress tasked the BLM with a mandate of managing public lands for a *variety of uses* such as energy development, livestock grazing, recreation, and timber harvesting while ensuring natural, cultural, and historic resources are *maintained for present and future use*." (emphasis added)).

³ 43 U.S.C. § 1702(c).

⁴ *Id.* § 1732(b).

⁵ *Id.* § 1712(c)(1).

⁶ *Id.* § 1701(a)(8); *see also Pub. Lands Council v. Babbitt*, 167 F.3d 1287, 1299 (10th Cir. 1999).

⁷ *New Mexico Ex. Rel. Richardson v. BLM*, 565 F.3d 683, 710 (10th Cir. 2009).

The Court further noted, “[a] parcel of land cannot both be preserved in its natural character and mined.”⁸

In this EA, BLM proposes to offer large amounts of land—including land with low or no oil and gas potential—for oil and gas leasing. BLM even acknowledges that the majority of parcels leased in the Moab region are likely to never see drilling due to their low potential and/or high cost of exploration and development.⁹ The parcels in the Moab region that BLM does expect to be produced will require access roads and related infrastructure that will have adverse effects on the scenic, environmental, and recreational values of the area.¹⁰ Parcel 34 in the Price Field Office likewise has low development potential and oil and gas activity there poses significant multiple-use conflicts, including with nearby national parks and wilderness areas.¹¹

Offering these tracts for lease violates BLM’s statutory duty to manage public lands for multiple uses, as leasing even low potential tracts often forecloses other valuable public land uses like conservation of environmentally valuable areas, recreation, scenic uses, and potential renewable energy development. There is no evidence in the EA or elsewhere in the administrative record that BLM has meaningfully grappled with its multiple-use mandate, for instance, by considering deferring or removing parcels with valuable recreational, scenic, or environmental values such as those parcels within 10 miles of national parks, parcels with important wildlife habitat, and/or parcels with important recreational and scenic value to Moab, Utah, or the United States.

BLM’s omission is remarkable, especially considering the unique and valuable non-extractive uses present within the areas offered for lease. The Moab Field Office encompasses 1.8 million acres of scenic canyon country. Moab’s public lands include a vast variety of striking arches, natural bridges, mesas, and spires, as well as the Colorado and Green Rivers.¹² These canyonlands are home to many types of desert wildlife, from bighorn sheep, mule deer, and white-tailed prairie dogs to the Endangered Species Act-listed Colorado pikeminnow and Mexican spotted owl.¹³ The Moab Field Office is a magnet for recreation and outdoor tourism in Utah, including off-highway vehicles, mountain biking, climbing, base jumping, hiking, horse-back riding, and river rafting.¹⁴ While visitors also

⁸ *Id.* (quoting *Rocky Mtn. Oil & Gas Ass’n v. Watt*, 696 F.2d 734, 738 n. 4 (10th Cir.1982)).

⁹ BUREAU OF LAND MGMT., ENVTL. ASSESSMENT, COMPETITIVE OIL AND GAS LEASE SALE 19–20 (2020) (Docket No. DOI-BLM-UT-000-2020-0004-EA) (hereinafter “EA”).

¹⁰ *See id.*

¹¹ *Id.* at 54; *see also Lower Last Chance Wilderness*, WILDERNESS CONNECT, <https://wilderness.net/visit-wilderness/?ID=796> (last visited July 8, 2020).

¹² *Moab Field Office*, BUREAU OF LAND MGMT., <https://www.blm.gov/office/moab-field-office> (last visited July 8, 2020).

¹³ *Colorado Upcoming Oil and Gas Lease Sales*, ROCKY MTN. WILD, https://rockymountainwild.org/oil_and_gas/colorado (last visited July 8, 2020).

¹⁴ *Moab Field Office*, BUREAU OF LAND MGMT., <https://www.blm.gov/office/moab-field-office> (last visited July 8, 2020).

come to visit Canyonlands and Arches National Parks, they cannot participate in some of these more intensive recreational activities within the national parks themselves, and instead rely on the areas close to the parks to do so – on many of the very same parcels contemplated for lease in this EA. The Moab Field Office is also known for dinosaurs tracks and features the Mill Canyon Tracksite Interpretive Trail.¹⁵

Unfortunately, leasing even low-potential lands often prevents conservation of environmentally valuable areas and interferes with recreation and other uses that BLM must consider and protect pursuant to FLPMA. As just one example, even if oil and gas tracts are not developed, their mere presence often precludes BLM from proactively managing the area for wilderness characteristics or important wildlife habitat. Section 201 of FLPMA requires BLM to maintain an inventory of all public lands and their resources and other values, which includes wilderness characteristics.¹⁶ Land management for wilderness characteristics entails closure to mineral resource production, motorized vehicles, timber production, and roads.¹⁷ When conducting a wilderness characteristics inventory, BLM assesses parcels for the presence or absence of wilderness characteristics including their size (roadless areas with over 5,000 acres of contiguous BLM lands are preferred), naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation.¹⁸ Yet in the past, the presence of mineral leases has foreclosed BLM from managing parcels for wilderness characteristics.¹⁹ In several resource management plans (RMPs) finalized by BLM Utah, the presence of mineral leases prevented the protection, preservation, or maintenance of wilderness characteristics.²⁰ This concern is not merely hypothetical. As recently as 2019, areas directly bordering parcels proposed for lease in this sale were designated as wilderness, such as the Lower Last Chance Wilderness Area that borders parcel 34.²¹

BLM violates FLPMA's multiple-use mandate by offering numerous tracts for lease that have very low development potential, yet have other valuable public uses that are equally important under federal law. In light of its multiple-use mandate, BLM should not offer low-potential lands for leasing, and must manage some public lands for distinct—and potentially more important—land uses. As the next section explains, BLM should have considered the option of a far more tailored lease sale that avoids multiple-use conflicts, as

¹⁵ *Mill Canyon Tracksite Interpretive Trail*, BUREAU OF LAND MGMT., <https://www.blm.gov/visit/mill-canyon-tracksite> (last visited July 8, 2020).

¹⁶ 43 U.S.C. § 1711.

¹⁷ See, e.g., BLM, GRAND JUNCTION DRAFT RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL IMPACT STATEMENT, 4-256 to 258 (2012), <https://perma.cc/Y6A6-KMDC>.

¹⁸ BLM, MANUAL TRANSMITTAL SHEET 6310—CONDUCTING WILDERNESS CHARACTERISTICS INVENTORY ON BLM LANDS (PUBLIC) 6-10 (2012), <https://www.blm.gov/or/plans/rmpswesternoregon/files/lwci-manual.pdf> (last visited July 8, 2020).

¹⁹ See Jayni Hein, et al., *Look Before You Lease* 12 (2020), https://policyintegrity.org/files/publications/Option_Value_Report.pdf.

²⁰ See, e.g., BLM, RECORD OF DECISION AND APPROVED RESOURCE MANAGEMENT PLAN FOR THE MONTICELLO FIELD OFFICE, 9, 38 (2008); BLM, RECORD OF DECISION AND APPROVED RESOURCE MANAGEMENT PLAN FOR THE MOAB FIELD OFFICE 28 (2008).

²¹ See EA at 54.

well as the option of deferring at least part of this lease sale in order to account for the public's valuable option to delay development.

II. The EA Fails to Analyze Several Viable Alternatives That Would Reduce Environmental and Social Harms, Protect Other Multiple Uses, and Help Ensure that BLM Obtains "Fair Market Value"

The EA fails to analyze several viable alternatives that would reduce environmental and social harms and protect other multiple uses better than BLM's identified alternatives. NEPA regulations specify that the agency must "[r]igorously explore and objectively evaluate all reasonable alternatives," so as to "provid[e] a clear basis for choice among the options."²² The agency must also analyze alternatives that are, in fact, distinct.²³

First, in addition to the "no action" alternative, the EA should have analyzed one or more environmentally-protective development scenarios that would offer fewer tracts for lease, particularly in popular recreation and scenic areas, including areas close to national parks. Second, the EA should have analyzed the option of deferring some of these parcels to a later date, especially those that have low development potential, in order to account for option value, or the informational value of delay, and help ensure that BLM obtains "fair market value" for these parcels as required under FLPMA.

A. BLM Fails to Consider the Alternative of Offering Fewer Tracts for Lease in this Sale, Especially in Light of Multiple-Use Conflicts and Low Oil and Gas Potential on Several Parcels.

In the EA, BLM analyzes only two alternatives: offering all of the nominated parcels assessed in the EA for lease, and the "no action" alternative in which a lease sale is not held and no parcels are offered.²⁴ But in light of the low development potential of many of the parcels included in the proposed sale, as well as clear multiple-use conflicts, BLM should have analyzed a middle option: offering fewer parcels in this lease sale, limited to those with high development potential and minimal multiple-use conflicts.

1. BLM acknowledges that many of the parcels to be offered have low development potential, and should have assessed a more limited lease sale alternative that avoids multiple-use conflicts.

BLM acknowledges that numerous parcels in the Moab Field Office identified for the upcoming lease sale have low development potential, and in fact, the majority of them may

²² 40 C.F.R. § 1502.14.

²³ See *Muckleshoot Indian Tribe*, 177 F.3d 800, 813 (9th Cir. 1999) (NEPA analysis failed to consider reasonable range of alternatives where it "considered only a no action alternative along with two virtually identical alternatives"); *Wilderness Society v. Wisely*, 524 F. Supp. 2d 1285, 1312 (D. Colo. 2007) (BLM violated NEPA by failing to consider "middle ground compromise between the absolutism of the outright leasing and no action alternatives").

²⁴ EA at 22–23.

not be developed at all during their lease term. BLM recognizes that of the nearly 48,000 oil and gas leases analyzed in Utah in one government report, just 6.17 percent were drilled and 3.76 percent produced.²⁵ In assessing a subset of parcels in the Moab Field Office, BLM states, “[f]or the purpose of this analysis it is assumed that 50 nominated parcels encompassing 78,790.85 acres will result in 14 wells and 114.8 acres (one well pad and access road disturbance at 8.2 acres).”²⁶ Moreover, past experience in Moab has shown that the region is not particularly productive. BLM notes that, “[o]ver a four-year period from 2016 to 2019, including federal and non-federal lands, 43 percent of APDs [applications for permits to drill] received in Grand County were drilled . . . and 35 percent of APDs received in San Juan County were drilled...”²⁷ In other words, more than half of the leases that received approval to drill between 2016 to 2019 were never even drilled.

When low-potential lands are leased to private developers, those developers may hope that energy prices will rise, that new ways to extract marginal energy will be found, or that the leases can later be sold to another company.²⁸ Over the last 30 years, production of oil or gas has been reported on only one-quarter of all acreage on federal lands leased for oil and gas drilling.²⁹ While private developers use these public lands as a mere poker chip—buying them at low cost and holding them in the event they become more valuable—speculative leases prevent conservation of environmentally valuable areas and often foreclose valuable uses like recreation, scenic and cultural use, designation as wilderness, or even renewable energy production.

Leasing low-potential lands without considering narrower alternatives violates BLM’s legal mandates in multiple ways. For one, BLM is authorized to lease only lands “which are known or believed to contain oil or gas deposits,”³⁰ yet the agency presents no evidence that the parcels it does not expect be drilled contain oil or gas. And as discussed further below, this failure also violates BLM’s obligation to consider reasonable alternatives pursuant to NEPA.³¹

In the Moab Field Office, many parcels identified for leasing have low development potential yet pose several multiple-use conflicts, including recreation, scenic value, wildlife

²⁵ *Id.* at 19 n.5.

²⁶ EA at 19.

²⁷ *Id.*

²⁸ THE WILDERNESS SOCIETY, *No Exit: Fixing the BLM’s Indiscriminate Energy Leasing* 5 (2016), <https://www.wilderness.org/sites/default/files/media/file/Report-No%20Exit-Fixing%20BLM%20Leasing.pdf>.

²⁹ TAXPAYERS FOR COMMON SENSE, *Locked Out: The Cost of Speculation in Federal Oil and Gas Leases* (2017) <https://www.taxpayer.net/energy-natural-resources/locked-out-the-cost-of-speculation-in-federal-oil-and-gas-leases/> (hereinafter “Locked Out”).

³⁰ 30 U.S.C. § 226(a).

³¹ See generally *New Mexico*, 565 F.3d at 711.

protection, cultural and tribal resources, and more.³² Parcels to be offered in this lease sale include several that fall within the Canyon Rims, Labyrinth Rims / Gemini Bridges, and South Moab Special Recreation Management Areas.³³ Other parcels border or contain popular recreation areas including the Old Spanish Trail, the Magnificent Seven Trail System, the Fruit Bowl Highline Area, and the Mineral Bottom Recreation Site.³⁴ Indeed, the Master Lease Plan (MLP) prepared for the Moab region describes the “iconic scenery” of the area, and aims to “reflect[] the balance and benefit of both recreation and the mineral extraction industry.”³⁵ Activities including hiking, wildlife conservation and appreciation, climbing, rappelling, mountain biking, off-roading, and ziplining draw visitors to the area and to many of the parcels at issue, specifically, supporting diverse uses of the public lands and contributing jobs and sustainable revenue to the local economy.³⁶ Moab Field Office parcels of particular note for their recreational and other multiple-use values include parcels 08; 39; 45; 48; 66; 68–80; 83–88; 90; 97; 111–113; 116–124; 132–134 and 136.³⁷ Moreover, some of the parcels are within ten miles of Canyonlands or Arches National Parks.³⁸ Developing these areas for oil and gas would have negative effects on the environmental, scenic, and recreational value of these parcels.³⁹

BLM attempts to minimize such detrimental environmental effects in the EA by noting that the MLP calls for no surface occupancy (NSO) and controlled surface use (CSU) stipulations on many of these parcels.⁴⁰ However, BLM does not offer any assurance that waivers, exemptions, or modifications to these NSO and CSU stipulations will not be granted. In fact, the Moab MLP itself states that such exemptions, waivers, or modifications are possible and may be granted.⁴¹ The Government Accountability Office recently found that BLM rarely involves the public in decisions to grant waivers, exemptions, or modifications to lease stipulations.⁴² In other words, even if BLM claims here that the land

³² See EA at 19–21, 294–299 (App’x D).

³³ See *id.* at 93, 96–101.

³⁴ See, e.g., *id.* at 101, 187.

³⁵ BLM, MOAB MASTER LEASING PLAN: RECORD OF DECISION/ APPROVED PLAN 6 (2016), https://eplanning.blm.gov/public_projects/lup/68430/94904/114786/05_Moab_MLP_ROD_Approved_Resource_Management_Plan_Amendments_508.pdf (hereinafter “Moab MLP”).

³⁶ See generally *infra* Sec. III.

³⁷ See, e.g., EA at 295 (describing these parcels as within special recreation management areas and/or within other special focus areas for recreation or environmental protection and study); *id.* at 14–16 (describing some parcels with proximity to Sole Source Aquifers or Public Drinking Water Source Protection Zones, as well as parcels that may experience negative impacts on recreation due to development); *id.* at App’x A (providing a parcel-specific description of stipulations).

³⁸ See *id.* at 13, App’x A.

³⁹ See *id.*

⁴⁰ *Id.* at 6, App’x A.

⁴¹ Moab MLP, *supra* note 35, at 6, App’x A-1.

⁴² GOV’T ACCOUNTABILITY OFFICE, *Improved Collection and Use of Data Could Enhance BLM’s Ability to Assess and Mitigate Environmental Impacts* 20–21 (2017), <https://www.gao.gov/assets/690/684254.pdf>.

will be free of surface disturbance or occupancy, the public has no guarantee that the leases will remain subject to these stipulations, and the public may never be notified if or when such protections are lifted.

Exempting, waiving, or modifying such stipulations can be very consequential: BLM could approve access roads in areas that are designated as NSO in the Moab MLP and the EA, or BLM could grant surface access to drill new wells in areas currently designated as NSO or CSU in the MLP and EA. It is a red herring for BLM to lean on these stipulations as evidence that drilling and development in these iconic recreational and wildlife areas will have no adverse environmental effects. Moreover, even with stipulations remaining in place, some adverse environmental and social effects are possible, if not likely, including wildlife disruption, scenic impairment, air pollution, noise pollution, light pollution, and more. Such effects are likely if directional drilling, or hydraulic fracturing, is used to access and develop parcels with CSU or NSO stipulations. In fact, the EA acknowledges that NSO or CSU parcels could be developed by directionally drilling into the federal parcels from non-federal lands, yet fails to disclose or assess the environmental risks of such drilling practices.⁴³

Another likely negative effect is increased road traffic to and from production sites, heightening the risk of traffic accidents for tourists and residents.⁴⁴ Even for NSO and CSU parcels, trucks and other infrastructure would be needed to move any oil or gas from production sites to market. For certain parcels, such as numbers 68 through 97, this would require trucks to use Highway 313, one of the region's vital tourist and recreation roads that connects the town of Moab to Canyonlands National Park and Dead Horse Point State Park, as well as dozens of BLM recreation areas and campgrounds. In 2019, Canyonlands National Park had more than 733,000 visitors.⁴⁵ The truck traffic and infrastructure effects from any new leases would have cumulative, adverse environmental and social effects, especially when added to existing federal and state mineral leases, as well as existing traffic from tourism and recreation. BLM does not discuss these traffic and infrastructure effects in this EA, in the Moab MLP, nor the RMP, thus failing to take the requisite "hard look" at environmental effects, in violation of NEPA.⁴⁶

In addition to the Moab Field Office, parcel 34 in the Price Field Office is located just five miles from Capitol Reef National Park (CRNP), which had more than 1.2 million visitors in

⁴³ See EA at 14, 18, 43.

⁴⁴ See, e.g., *id.* at 27.

⁴⁵ *Annual Visitation Report by Years: 2009 to 2019*, NAT'L PARK SERV., [https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20\(1979%20-%20Last%20Calendar%20Year\)](https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20(1979%20-%20Last%20Calendar%20Year)) (last visited July 8, 2020).

⁴⁶ See *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 374 (1989) ("... NEPA does require that agencies take a 'hard look' at the environmental effects of their planned action..."); *Lee v. U.S. Air Force*, 354 F.3d 1229, 1238–40 (10th Cir. 2004) (noting that the "hard look" standard applies to EAs, as well as EISs).

2019.⁴⁷ Parcel 34 directly borders the Lower Last Chance Wilderness Area, which is part of the San Rafael Swell and features brightly colored and wildly eroded sandstone formations, deep canyons, and giant plates of stone tilted upright through geologic upheaval.⁴⁸ Evidence of Native American cultures is common throughout the San Rafael Swell in the form of pictograph and petroglyph panels. From about 1776 to the mid-1850s, the Old Spanish Trail trade route passed through the Swell.⁴⁹ The Swell also provides excellent habitat for wildlife. More than 200 desert bighorn sheep live among the rugged landscape, as well as bald eagles and peregrine falcons, both sensitive species.⁵⁰

BLM states that reasonably foreseeable impacts from oil and gas development on parcel 34 include “[p]otential impacts to [the] viewshed from highly visited areas in CRNP,” and sounds of oil and gas development disrupting solitude or the visitor experience in the park.⁵¹ BLM also notes that oil production on the parcel, while unlikely, would require frequent truck traffic, and natural gas production would require a new gas pipeline to be built to connect into existing pipeline infrastructure 30 miles away.⁵² The region has a history of problematic pipeline projects, resulting in wasteful flaring of natural gas when pipelines were deactivated due to safety concerns.⁵³ BLM also states that light pollution from development could affect dark skies in the park and the Lower Last Chance Wilderness Area.⁵⁴

While the negative effects of drilling on parcel 34 are apparent, the economic upside for BLM is low. BLM states that, “[t]here is little potential for oil production in the area ... [and] low potential for natural gas.”⁵⁵ Moreover, BLM offered two parcels in the same area in a December 2019 lease sale and neither sold; in fact, both are still available for non-

⁴⁷ *Annual Visitation Report by Years: 2009 to 2019*, NAT’L PARK SERV., [https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20\(1979%20-%20Last%20Calendar%20Year\)](https://irma.nps.gov/STATS/SSRSReports/National%20Reports/Annual%20Visitation%20By%20Park%20(1979%20-%20Last%20Calendar%20Year)); EA at 54.

⁴⁸ *Lower Last Chance Wilderness*, WILDERNESS CONNECT, <https://wilderness.net/visit-wilderness/?ID=796> (last visited July 8, 2020).

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ EA at 9.

⁵² *Id.* at 55.

⁵³ Brian Maffly, *Paradox Pipeline Lives Up to Its Name for Utah Regulators*, SALT LAKE TRIBUNE (Feb. 16, 2020), <https://www.sltrib.com/news/environment/2020/02/16/paradox-pipeline-lives-up/> (“Faced with only bad options, the agencies’ governing boards last month chose to ‘deactivate’ the pipeline — purging it of gas and sealing it — and authorize Wesco to torch up to 300,000 cubic feet of gas a day at its Blue Hills plant.”).

⁵⁴ EA at 54.

⁵⁵ *Id.*

competitive leasing.⁵⁶ While BLM may not be strictly prohibited from leasing parcel 34,⁵⁷ it should have considered assessing a lease sale option that removes it from consideration due to low development potential and multiple-use conflicts, including with parks and wilderness areas.

BLM should have more closely scrutinized multiple-use conflicts and analyzed a more limited leasing option pursuant to NEPA that offers exclusively high-potential, low-conflict parcels for lease. Such an analysis is required under NEPA, as multiple federal courts have held in striking down BLM leasing determinations as arbitrary and capricious. The Tenth Circuit, for instance, held that BLM violated NEPA when it failed to consider the alternative of not opening specific lands to leasing in a land use plan that “are extraordinary in their fragility and importance as habitat.”⁵⁸ The Court explained that BLM’s failure to do so violated NEPA’s requirement to “tak[e] a hard look at all reasonable options.”⁵⁹ The court rejected BLM’s consideration of a “full closure” alternative (essentially the no-action alternative) as inadequate, explaining that the option of closing a “portion of the overall plan area ... differs significantly from full closure” and so must also be considered.⁶⁰ Moreover, reinforcing its conclusion, the Court cited BLM’s multiple-use mandate, stating, “[g]iven the powerful countervailing environmental values, we cannot say that it would be ‘impractical’ or ‘ineffective’ under multiple-use principles to close the Mesa to development.”⁶¹

The District of Colorado applied similar logic in a recent case concerning BLM’s NEPA analysis of a draft RMP. The court explained:

I disagree with BLM’s argument that there is no substantive difference between an alternative that opens low and medium potential areas for leasing and one that does not. The basis of BLM’s argument here is that it was not required to consider the latter option because such a low percentage of the low and medium potential areas were projected to be developed. But if those areas were open for leasing,

⁵⁶ *December 10, 2019 Oil & Gas Lease Sale Results*, BLM UTAH STATE OFFICE, https://eplanning.blm.gov/public_projects/nepa/123688/20009968/250011669/SaleResults.pdf. The parcels offered in the December 2019 sale that border the Lower Last Chance Wilderness Area were labelled parcels 9 and 10 in the December 2019 lease sale. They did not receive any bids. *See id*; *see also* BLM, December 2019 Competitive Oil and Gas Lease Sale 54 (2019) (Docket No. DOI-BLM-UT-0000-2019-0005-OTHER NEPA -EA) https://eplanning.blm.gov/public_projects/nepa/123688/20006036/250007087/December_2019_Lease_Sale_EA.pdf (describing the parcels and conflicts).

⁵⁷ *See* EA at 54 (citing BLM, MANUAL TRANSMITTAL SHEET 6340—MANAGEMENT OF BLM WILDERNESS).

⁵⁸ *New Mexico*, 565 F.3d at 711.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

even if there is a minimal chance for development, it would detract from BLM designating that land for other uses.⁶²

The court further explained that “the principle of multiple use does not require BLM to prioritize development over other uses,” and “it seems a reasonable alternative would be to consider what else may be done with the low and medium potential lands if they are not held open for leasing.”⁶³ Further, the court noted that analyzing the “no action” alternative did not relieve the agency of its duty to consider “any other alternative along the spectrum.”⁶⁴ The court held that BLM violated NEPA by failing to consider a reasonable range of alternatives.⁶⁵

So too, here. Failure to consider a more limited leasing scenario that voids multiple-use conflicts in this EA renders the analysis arbitrary and capricious.

2. BLM’s own analysis in a different proceeding reveals environmental sensitivities warranting cessation of recreational activities in the very same areas offered for mineral leasing here.

Unanswered questions about potential wildlife impacts and conflicts with other multiple uses warrant more analysis and explanation in this NEPA process, especially in light of BLM’s actions and statements in a separate proceeding that involves several of the parcels offered for lease here. On May 29, 2020, BLM requested input from the public on “a proposal to protect wildlife and raptors though restricting roped and aerial activities within Mineral and Hell Roaring Canyons.”⁶⁶ The approximately 10,000-acre area identified for potential restrictions provides habitat for golden eagles, Mexican Spotted Owl, desert bighorn sheep, and other wildlife.⁶⁷ BLM states in the news release that recreational activity in the Mineral and Hell Roaring Canyons has increased in recent years, leading to impacts to wildlife habitat, and that BLM is developing a proposal “to help mitigate this conflict.”⁶⁸

⁶² *Wilderness Workshop v. United States BLM*, 342 F. Supp. 3d 1145, 1166–67(D. Colo. 2018) (internal citations omitted).

⁶³ *Id.* (citing *New Mexico*, 565 F.3d at 710).

⁶⁴ *Id.* at 1166 (citing *New Mexico*, 565 F.3d at 711 n.32).

⁶⁵ *Id.* at 1167.

⁶⁶ BLM, NEWS RELEASE: BLM SEEKING COMMENTS ON A PROPOSAL LIMITING ROPED AND AERIAL RECREATION ACTIVITIES IN MINERAL AND HELL ROARING CANYONS (May 29, 2020), https://eplanning.blm.gov/public_projects/nepa/1504945/20018743/250024843/BLM_Utah_News_Release_Moab_Field_Office_Scoping_KFreview_lmc_final052920.pdf.

⁶⁷ *Id.*

⁶⁸ *Id.*

Yet, this EA proposes new oil and gas leases in about half of the proposed restricted aerial and roped activity parcels. These parcels include numbers 71 through 78.⁶⁹ It is very hard, if not impossible, to reconcile BLM's two competing proposals: one that would restrict roped recreational activity due to concerns for wildlife, and the other (in this EA) proposing new mineral leasing and extraction in the exact same parcels.

At the very least, BLM should further analyze these potential wildlife conflicts and the apparent discrepancy between its two proposed actions in the same area. Even with NSO or other stipulations in place—which cannot be entirely guaranteed, as explained above—oil and gas development has many impacts including noise, vibration, visual disturbance, and development infrastructure such as trucks and access roads that can have impacts on wildlife, recreation, and environmental and scenic values. BLM has not explained how or why such mineral development effects will not jeopardize the wildlife in the very same parcels proposed for roped recreational restriction due to their environmental sensitivity. Barring further explanation, proceeding with oil and gas leasing in these areas would be arbitrary and capricious.

B. BLM Fails to Consider a Deferred Leasing Alternative That Would Offer Fewer Parcels for Sale Now, and Defer Other Parcels to a Later Date After Conducting Further Analysis.

BLM also fails to consider a deferred leasing alternative that would offer fewer parcels for sale now, and reserve parcels with possible multiple-use conflicts and/or low development potential to a later date after further analysis can be conducted. This failure violates the agency's legal obligation to consider option value and makes it unlikely that BLM will obtain "fair market value" for these parcels as required by FLPMA and the MLA.

1. Considering a Deferred Leasing Alternative Meets FLPMA and MLA Requirements.

BLM should assess the environmental, social, and economic costs and benefits of deferring at least some of the nominated parcels. BLM must manage federal fossil fuels to earn "fair market value" for the public and to harmonize energy production with resource conservation.⁷⁰ Analyzing a deferred leasing alternative is necessary in order to determine the optimal time to issue any leases and thereby minimize environmental and social risks

⁶⁹ Compare *Mineral and Hell Roaring Canyons Aerial and Roped Activities Management*, BUREAU OF LAND MGMT., https://eplanning.blm.gov/public_projects/nepa/1504945/20015941/250021372/Mineral_and_Hell_Roaring_Map.pdf (last visited July 8, 2020) with *Utah Public Lands & Recreation*, OUTDOOR ALLIANCE, <https://outdooralliance.maps.arcgis.com/apps/webappviewer/index.html?id=91208a5c4b354eb8834181ff8bbae11c> (last visited July 8, 2020); see also Brian Maffly, *Climbers Balk as Feds Seek to Shut Down Roped Activity in Two Popular Canyons Near Moab*, SALT LAKE TRIBUNE (June 18, 2020), <https://www.sltrib.com/news/environment/2020/06/18/climbers-balk-feds-seek/>.

⁷⁰ 43 U.S.C. §§ 1701(a)(8)–(9).

and secure the public's right to obtain "fair market value" for its resources.⁷¹ By setting aside more public lands for conservation and recreational opportunities now, BLM will have time to gather important information on environmental risks and sensitivities; economic risks, including changing resource prices and impacts from development on tourism; and competing land uses, including renewable energy development, recreation, and habitat and watershed protection.

Moreover, the MLA requires BLM to account for conservation and specifically consider the timing—including potential for delay—of mineral lease sales. Specifically, the MLA requires the agency "to [e]nsure the sale of the production of such leased lands to the United States and to the public at reasonable prices, for the protection of the interests of the United States ... and for the safeguarding of the public welfare," including the "prevention of undue waste."⁷² As the Supreme Court explained, the MLA emphasizes "[c]onservation through control," with "one of the main congressional concerns" being "the prevention of an overly rapid consumption of oil resources."⁷³

Yet here, despite legal mandates and practices within other Department of Interior agencies, BLM does not consider the option of deferring particular parcels for this lease sale, as the EA lacks any meaningful evaluation of the timing of the proposed lease sale or consideration of delaying particular parcel sales. BLM's total failure to meaningfully evaluate the potential for delaying leasing—including due consideration of option value—violates FLPMA and the MLA and, should BLM proceed with the lease sale based on such an incomplete analysis, would render the lease sale determination arbitrary and capricious.

2. BLM Must Account for Option Value by Assessing a Deferred Leasing Alternative, Given the Irreversible Nature of Drilling and Development.

At the lease sale stage, BLM has an important opportunity to determine which, if any, tracts to make available to private energy developers. Just because a given tract is nominated and eligible for mineral leasing does not mean that BLM must offer it for lease. In fact, it may be advantageous for BLM to defer part or all of a lease sale altogether, pending more comprehensive environmental information, completion of a relevant cultural or scientific study, or more community input. If BLM learns new information regarding, for instance, environmental or safety hazards, developmental value, recreational value, carbon sink value, or cultural significance, it is much more difficult (if not impossible) to act on this information when land is already leased.⁷⁴

In light of the uncertainty and near-irreversibility associated with leases for mineral development, BLM should account for option value, or the informational value of delay, at

⁷¹ See Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1 (2018); Michael Livermore, *Patience Is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581 (2013).

⁷² 30 U.S.C. § 187.

⁷³ *Boesche v. Udall*, 373 U.S. 472, 481 (1963).

⁷⁴ See Jayni Hein et al., *supra* note 19, at 17.

the lease sale stage by offering only high-potential lands, if any, in lease sales, and deferring other parcels that pose potential resource conflicts.

There Is Option Value to Delaying Oil and Gas Lease Sales

Option value is the informational value of delaying irreversible decisions, such as when and on what terms to sell non-renewable resources to private companies.⁷⁵ BLM holds, on behalf of the American public, a perpetual option to develop or lease its fossil fuel resources. When the government sells the right to develop a tract to a private lessee, it extinguishes the perpetual option that it holds on behalf of the American people, and sells a time-limited option to a private actor, valid for the duration of the lease (typically 10–15 years for the initial term of an oil or natural gas lease). Consideration of option value requires that BLM determine when and where exercising its perpetual options would be most socially opportune, including by accounting for environmental, social, and economic ramifications.⁷⁶ The value associated with the option to delay can be large, especially when there is a high degree of uncertainty about price, extraction costs, and the social and environmental costs imposed by drilling—each of which are present here with respect to the EA.

Even if BLM does not account for option value in its leasing decisions, oil and gas companies will, and they will time extraction and resource decisions in a manner that is privately optimal, rather than socially optimal. Indeed, option value explains the routine practice of companies purchasing tracts and waiting years to develop them, when conditions are optimal from their perspective, if they ever do develop them.⁷⁷ BLM must strategically plan its own lease sales in order to maximize social welfare.

In fact, the federal government uses option value in other resource management determinations. Interior’s Bureau of Ocean Energy Management (BOEM) incorporated option value in its offshore oil and gas leasing program for 2017–2022. BOEM stated that: (i) environmental and social cost uncertainties can affect the size, timing and location of leasing; (ii) option value can be a component of the “fair market value” of a lease; and (iii) BOEM can raise minimum bids, rents, and royalties for leases to account for option value.⁷⁸ BOEM also uses a “hurdle price” analysis to ensure that any areas included in its leasing program are expected to earn positive net economic value.⁷⁹

Likewise, BLM has deferred other parcels and lease sales in order to gather more information about risks and timing. For instance, the BLM Pecos District Office deferred thirty-one parcels from a September 2018 lease sale due to concerns about potential water

⁷⁵ Livermore, *supra* note 71, at 585, 589.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ U.S. BUREAU OF OCEAN & ENERGY MGMT., 2017-2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING DRAFT PROPOSED PROGRAM at 5-20, 8-3 to 8-19 (2015), <https://perma.cc/8AU3-7MS4>.

⁷⁹ *Id.* at 8-2, 8-12 to 8-14.

contamination from oil and gas activity.⁸⁰ For a series of BLM oil and gas lease sales near the Chaco Culture National Historical Park, lease sale protests and public opposition led BLM to defer some parcels until it could conduct more analysis on cultural sites within the proposed leasing area.⁸¹ More recently, the combination of market factors and Covid-19 led BLM, as well as the states of Colorado and Utah, to defer a number of scheduled oil and gas lease sales.⁸²

In a similar vein, the Forest Service decided, in May 2019, to reject expressions of interest for oil and gas drilling on 52,000 acres in the Humboldt-Toiyabe National Forest in Nevada. The Forest Service's analysis revealed:

... unfavorable geologic conditions in the area, meaning that there is little to no potential of oil and gas resources in the area. Additionally, camping, hunting, fishing, and motorized recreation are popular activities in the proposed lease area and represent part of a \$12.5 billion recreation industry in Nevada—an industry that supports 87,000 jobs statewide. The unfavorable geologic conditions, coupled with concerns over potential impacts to wildlife and to the recreational and scenic values of the iconic Nevada landscape, led to the selection of the No Leasing Alternative.⁸³

Additionally, two cases from the U.S. Court of Appeals for the D.C. Circuit hold that consideration of option value is required when assessing “fair market value.” In *California v. Watt*, the Court remanded an offshore leasing determination because Interior failed to “properly consider[] the economic effect of delaying lease sales,” keying in on the fact that the agency “ignored the price rises in crude oil that make delay a factor increasing the value of any recovered resources.”⁸⁴ The Court was even more explicit about the need to consider option value in *Center for Sustainable Economy v. Jewell*, explaining that an agency may “act[] irrationally in failing to [consider] the informational value of delay,” and highlighting the

⁸⁰ See Hein at al., *supra* note 19, at 23.

⁸¹ *Id.* at 28–29.

⁸² See, e.g., *Utah Oil and Gas Lease Sales*, BLM UTAH, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/regional-lease-sales/utah> (deferring the June 2020 oil and gas lease sale to September 2020); *New Mexico Oil and Gas Lease Sales*, BLM NEW MEXICO, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/leasing/regional-lease-sales/new-mexico> (deferring May 2020 lease sale to August 2020); *Oil & Gas Auction Information and Results*, COLO. STATE LANDS BOARD, <https://docs.google.com/document/d/1A8yfmfXmcMtx802wRxktdSuzkFeCrF5tE9XT8ms3Qa0/edit> (cancelling the August 2020 lease sale and moving all nominations to November 2020); *SITLA 2020 Competitive Mineral Lease Offering Schedule*, UTAH SCHOOL AND INSTITUTIONAL TRUST LANDS ADMINISTRATION, <https://trustlands.utah.gov/wp-content/uploads/2020/06/2020-Mineral-Lease-Offering-Schedule-Revised.pdf> (deferring January, April, and July 2020 oil and gas parcels to future lease sales).

⁸³ U.S. FOREST SERVICE, HUMBOLDT-TOIYABE NF NEWS: FOREST SUPERVISOR SIGNS THE DECISION FOR RUBY MOUNTAINS OIL AND GAS AVAILABILITY LEASING ANALYSIS (May 7, 2019), <https://content.govdelivery.com/accounts/USDAFSR4/bulletins/24378ae>.

⁸⁴ 668 F.2d 129, 1319–20 (D.C. Cir. 1981).

Department's "qualitative analysis of the benefits of delaying leasing" as satisfying this standard.⁸⁵ As the Court explained, because "[m]ore is learned with the passage of time"—including about drilling costs, safety and environmental risks, and the economics of the oil and gas industry, among others—the "informational value of delay is a relevant cost" that agencies must consider when assessing "fair market value."⁸⁶

In line with this past agency practice and federal case law, environmental, social, and economic uncertainty support waiting for as much time as possible to develop non-renewable resources, especially areas that have other wildlife, habitat, watershed protection, carbon sink, recreational, or scenic values. BLM should limit the areas it makes available for oil and gas leasing and consider a deferred leasing alternative because there is economic, social, and environmental value in keeping more land protected and off-limits to extraction.

The EA Should Have Considered a Deferred Leasing Alternative and Analyzed Numerous Uncertainties That Weigh Against Fossil Fuel Leasing.

Given the potential for irreversible damage and suboptimal public land uses embedded within BLM's preferred leasing alternative, BLM should have accounted for the following uncertainties in the EA by exploring a deferred leasing alternative:

- Current and expected resource prices in the United States and in global energy markets, especially in light of recent record-low oil prices and volatility (described more below);
- Environmental conditions and risks from drilling including local pollution, habitat effects, endangered species effects, and greenhouse gas emissions;
- Competing uses of the public lands, including recreational activities, preservation, wildlife protection, renewable energy development, cultural and tribal use, and tourism;
- Current and expected effects of climate change on the ecosystem, which affect environmental sensitivities;
- Information on the cost of drilling in the region and bringing those resources to market;
- Safety, pollution-capture, and other drilling technologies;
- Energy efficiency, energy conservation, and fuel economy standards that affect fossil fuel demand; and
- Laws and regulations governing drilling and development on public lands, air pollution, endangered species, and other environmental concerns.

For instance, the Moab MLP describes how NSO stipulations should be applied to any new leases in identified areas for the protection of cultural resources, high use recreation routes and trails, high use climbing and canyoneering areas, Special Recreation Management Areas, important drinking water source protections zones,

⁸⁵ 779 F.3d 588, 610 (D.C. Cir. 2015).

⁸⁶ *Id.*

water resource, ephemeral streams, Areas of Critical Environmental Concern (ACEC), and viewsheds and soundscapes bordering Arches and Canyonlands National Parks.⁸⁷ But rather than defer any of the numerous parcels that pose these conflicts or contain these sensitivities, BLM brushes away any potential conflicts by resting on the MLP's required stipulations. It is far more logical—and in fact required pursuant to FLPMA and NEPA—for BLM to carefully assess these conflicts and sensitivities and at least consider deferring lease sales in the areas that contain important competing resources and values.

Indeed, BLM should learn more about any potential heightened risks or uncertainties through further studies and analysis, rather than lease any such parcels. One fitting, non-exclusive example is the apparent conflict between proceeding with oil and gas leasing on parcels 71 through 78 in the Moab Field Office while BLM considers closing the very same area to roped recreation due to potential wildlife conflicts.⁸⁸

Resource price uncertainty is another factor that counsels strongly towards deferring at least some of these parcels in this lease sale, if not all of them, in order to earn fair market value for the use of public lands. As explained above, many of the parcels offered in this lease sale have low potential for oil and gas, yet pose multiple-use conflicts. However, the mere presence of leased tracts on BLM lands often forecloses BLM managing those areas for wilderness values, important wildlife habitat, ACECs, and myriad other public uses. BLM must at least *consider* deferring the sale of low-potential lands at such low resource prices pursuant to NEPA, FLPMA, and the MLA.

In sum, BLM must at least consider the substantial environmental, cultural, and economic benefits of waiting to lease at some parcels that have important conservation and recreational values and low oil and gas potential. Because BLM has failed to do so here, the EA does not take the requisite “hard look” at environmental effects and does not evaluate reasonable alternatives, in violation of NEPA.⁸⁹

3. BLM's Failure to Consider the Economic Impacts of Delaying Parcels for Lease Sale Violates Its Obligation to Obtain “Fair Market Value” for the Use of Public Lands.

BLM's total lack of consideration of option value also creates a scenario in which BLM is likely to violate its requirement under FLPMA and the MLA to obtain “fair market value” for any lease sale. By neglecting any consideration of option value—contrary to judicial mandates and administrative precedent—BLM risks repeating a pattern of obtaining minimal payments from oil companies to sit on low-potential parcels while depriving the public of the enjoyment of those lands. This outcome is particularly likely in

⁸⁷ Moab MLP, *supra* note 35, at 3.

⁸⁸ *See supra* Sec. I.

⁸⁹ *See, e.g., Marsh*, 490 U.S. at 374.

the present moment, as recent economic trends make it especially unlikely that BLM will derive “fair market value” from the proposed sale.

BLM Is Highly Unlikely to Receive “Fair Market Value” for the Proposed Sale, Emphasizing the Requirement to Consider Delay

While BLM’s failure to consider option value or genuinely analyze the possibility of delaying leasing is unlawful in and of itself, this failure is particularly egregious because—in light of recent BLM leasing and production trends and record-low oil and gas prices—the agency is highly unlikely to receive “fair market value” for the parcels at issue. What’s more, BLM’s repeated failure to assess option value or consider delayed-leasing alternatives is directly responsible for some alarming federal leasing trends.

Particularly in recent years, BLM has regularly offered lease sales for low-potential lands that developers scoop up at negligible prices and sit on without any development, depriving the public of other—and often more valuable—uses of the land for minimal compensation. As of the end of fiscal year 2018, half of the over 25.5 million acres of federal land locked up in oil and gas leases—nearly 13 million acres—was lying idle without production.⁹⁰ The rate is even higher in Utah, where nearly 1.5 of the 2.6 million leased federal acres—over 57 percent—were sitting idle.⁹¹ As the Congressional Budget Office explained, “[m]ost leased parcels have no exploratory drilling or production during the lease term,” with leases issued noncompetitively particularly unlikely to enter production.⁹² These trends are being exacerbated as the Trump administration makes more low-potential lands available for lease: BLM offered more acres for lease during calendar years 2017–2018 than under the entire last four years of the Obama administration, with a lower percentage of those acres receiving bids.⁹³

Companies engage in the practice of speculative leasing and sitting on low-potential lands for multiple reasons. First, companies often have a “perverse incentive ... to sit on undeveloped federal land,” since by having subsurface reserves as assets on a balance sheet, a company can “immediately improve its overall financial health, boost its attractiveness to shareholders and investors, and even increase its ability to borrow on favorable terms.”⁹⁴ Second, although there is frequently “little evidence that much oil or gas

⁹⁰ *Compare Oil and Gas Statistics*, BUREAU OF LAND MGMT. tbl. 2, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics> (last visited July 8, 2020), *with id.* tbl. 6.

⁹¹ *Id.*

⁹² CONGRESSIONAL BUDGET OFFICE, *Options for Increasing Federal Income from Crude Oil and Natural Gas on Federal Lands 2* (2016), <https://perma.cc/SEM7-PNA5> (hereinafter “CBO Report”).

⁹³ *Oil and Gas Statistics*, BUREAU OF LAND MGMT. tbl. 11, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/oil-and-gas-statistics> (last visited July 8, 2020). As these statistics show, BLM made 14,080,439 acres available for lease during calendar years 2013–2016, with 3,275,780 of those acres—roughly 23 percent—receiving bids. During calendar years 2017–2018, BLM made 16,857,751 acres available for lease, with 2,281,123 of those acres—just 13.5 percent—receiving bids.

⁹⁴ CTR. FOR AM. PROGRESS, *Oil and Gas Companies Gain by Stockpiling America’s Federal Land 3* (2018), <https://www.americanprogress.org/issues/green/reports/2018/08/29/455226/oil-gas-companies->

is easily accessible,” buyers may be “hoping that the land will increase in value nonetheless, because of higher energy prices, new technologies that could make exploration and drilling more economical or the emergence of markets for other resources hidden beneath the surface.”⁹⁵ In other words, buyers are considering option value—as rational economic actors do when assessing market value. Yet in this lease sale, BLM fails to consider the prospect of waiting to offer leases until energy prices are higher and justify the costs of leasing, including foregoing opportunities to promote other economically valuable uses, like outdoor recreation—failing to uphold its mandate to earn fair market value.

While it is clear why oil and gas companies often choose to purchase leases with little prospect of near-term drilling, it is far less clear why BLM facilitates these transactions. After all, the nation derives little monetary benefit from unproductive leases. For one, the government does not receive royalties when a parcel is undeveloped, thereby depriving taxpayers of the primary source of income from onshore leasing.⁹⁶ That leaves only lease and rental payments for the land itself, but these are frequently negligible for low-potential lands. The MLA imposes a minimum upfront bid of just \$2 per acre for onshore oil and gas leases—an amount that has not changed since 1987.⁹⁷ Additionally, a parcel that does not receive any bids can still be leased noncompetitively, whereby the first qualified applicant is entitled to lease the land upon payment of a \$435 application fee.⁹⁸ Rental payments for nonproducing lands are also minimal: A company pays an annual rental fee of only \$1.50 per acre during the first five years of the rental term, and just \$2 per acre for the remainder of the term.⁹⁹ For many non-producing parcels, therefore, total revenues are just a few hundred or thousand dollars per year—hardly a fair value for the land’s exclusive use.

gainstockpiling-americas-federal-land/; see also TAXPAYERS FOR COMMON SENSE, *Gaming the System: How Federal Land Management in Nevada Fails Taxpayers* 4 (2019), https://www.taxpayer.net/wp-content/uploads/2019/07/TCS-Nevada-Federal-Oil-Gas-Report_July-2019.pdf (“Certain companies and interests take advantage of the low acquisition and ownership costs for federal leases to amass sizeable lease holdings Their aim is to profit by re-selling some fraction of the leases to major producers who might want to take a gamble and actually explore for oil and gas reserves on the federal land.”).

⁹⁵ Eric Lipton & Hiroko Tabuchi, *Energy Speculators Jump on Chance to Lease Public Land at Bargain Rates*, N.Y. TIMES (Nov. 27, 2018), <https://www.nytimes.com/2018/11/27/business/energy-speculators-public-land-leases.html>.

⁹⁶ The Congressional Budget Office estimates that royalties accounted for 90 percent of the government’s gross income from onshore leasing from 2005 to 2014. CBO Report, *supra* note 90, at 2. Even here, taxpayers receive an unreasonably low benefit from production on federal land, as the federal onshore royalty rate of 12.5 percent “is less than the royalty rate imposed by many states for production of oil and gas on state-owned land. For example, current state royalty rates are 25 percent in Texas, 18.75 percent in Oklahoma, and 16.67 percent in Colorado, Montana, and Wyoming; New Mexico and North Dakota use both 16.67 percent and 18.75 percent rates.” *Id.* at 20.

⁹⁷ 30 U.S.C. § 226(b)(1)(B).

⁹⁸ *Id.* § 226(c)(1); 84 Fed. Reg. 59,730, 59,731 (Nov. 6, 2019).

⁹⁹ 30 U.S.C. § 226(d). Although the MLA provides these amounts as minimums, BLM regulations set annual rents at these statutory-minimum amounts. 43 C.F.R. § 3103.2-2(a).

Indeed, a large and increasing percentage of federal lands are leased either noncompetitively or at or near the minimum bid value. Roughly half of all parcels leased from 2003–2012 went for less than \$10 per acre, including about 4,000 parcels—approximately 15 percent—that did not receive a bid and were leased noncompetitively.¹⁰⁰ During that time, over 25 percent of the parcels that were leased competitively yielded just the \$2 per acre minimum bid.¹⁰¹ Just in Utah from 2007–2017, more than 200,000 acres were leased either noncompetitively or for a low bid of under \$10 per acre.¹⁰² Recent years have only exacerbated this problem: The percentage of leases being given away through noncompetitive sales “surged in the first year of the Trump administration to the highest levels in over a decade” and now “make up a majority of leases given out by the federal government” in numerous states.¹⁰³ In one extraordinary example, one corporation has secured 227 oil and gas leases in Montana since the start of 2018 covering over 113,000 acres of federal land—without submitting a single bid or paying anything beyond application fees and minimum rent amounts.¹⁰⁴

In light of these trends, there is no reason to believe that these proposed parcels will be put to productive use or yield significant revenue if sold in this lease sale. Indeed, BLM’s own estimates in the EA reveal that the majority of the nominated parcels will not see any drilling, with the vast majority of the land remaining unproductive.¹⁰⁵ And if recent history is any guide, BLM is likely to obtain minimal revenue for those lands. For instance, in the most recent BLM Utah State Office lease sale, held this past March, all but four of the 22 bids went for the minimum \$2 per acre.¹⁰⁶ In a BLM Utah lease sale held last year, every single sold parcel went for the statutory minimum.¹⁰⁷ These results are particularly pronounced in the area near the proposed lease sale: Of the 17 parcels that BLM put up for lease in Grand County in 2019, according to one analysis, less than 45% of the acreage sold

¹⁰⁰ CBO Report, *supra* note 90, at 2.

¹⁰¹ *Id.* at 18.

¹⁰² *Locked Out*, *supra* note 29, at 3.

¹⁰³ Lipton & Tabuchi, *supra* note 95. Illuminating examples of this trend abound. As Taxpayers for Common Sense explained in a recent article: “A first quarter lease sale in Colorado that took place in March last year brought in just \$13 per acre with bid revenue totaling under \$14,00 for the 1,055 acres leased. The year before that, taxpayers received an average of just \$5 per acre in exchange for 1,400 acres of federal land in the state. Last year’s first quarter Montana lease sale saw just 62,000 acres or 37 percent of 167,000 acres on offer receive bids. Bids per acre in Mississippi in 2018 averaged \$2.01, a hair above the legal minimum of \$2.” *Now is the Time to Press Pause on Oil and Gas Leasing*, TAXPAYERS FOR COMMON SENSE (Mar. 17, 2020), <https://www.taxpayer.net/energy-natural-resources/time-to-press-pause-on-oil-and-gas-leasing/>.

¹⁰⁴ *Taxpayers Lose in Noncompetitive Montana Lease Sale*, TAXPAYERS FOR COMMON SENSE (Nov. 27, 2018), <https://www.taxpayer.net/energy-natural-resources/taxpayers-lose-in-noncompetitive-montana-lease-sale/>.

¹⁰⁵ See *supra* notes 25–27 and accompanying text.

¹⁰⁶ *Mar. 10, 2020 Oil & Gas Lease Sale Results*, BLM UTAH STATE OFFICE, https://eplanning.blm.gov/public_projects/nepa/1501633/20014476/250019567/Mar2020SaleResults.pdf.

¹⁰⁷ *June 11, 2019, Oil & Gas Lease Sale Results*, BLM UTAH STATE OFFICE, https://eplanning.blm.gov/public_projects/nepa/119572/174906/212465/1-June2019_SaleResults.pdf.

and that acreage all went for the minimum bid of \$2 per acre. As a result, the State of Utah received only a few thousand dollars from these sales.¹⁰⁸

Like in these recent lease sales, it is likely here that many or most of the nominated parcels will receive noncompetitive or minimum bids and remain nonproductive throughout the lease term, depriving the public of the land's unencumbered enjoyment and higher-value uses—such as recreation, tourism activities, wildlife conservation, or even renewable energy production—while yielding negligible revenue. And although BLM briefly suggests otherwise—speculating that “bonus bids (the amount paid at time of auction), annual rent fees (for 10 years regardless of activity on a leased parcel), and royalties (if and when production occurs) may provide substantial income to county governments”¹⁰⁹—it provides no basis for this cursory conclusion, and fails to acknowledge the extensive counterevidence from previous BLM lease sales.

Through consideration of option value, BLM can avoid this result. Specifically, if BLM rationally considers the value of delay (as oil speculators who snatch up low-potential lands already do), it would recognize that parcels currently believed to possess zero- or low-development potential could sell for a much greater future price if later discovered to have high potential. In the meantime, removing these parcels from this lease sale would allow them to be put toward more beneficial uses—such as ecosystem conservation, carbon sink purposes, renewable energy development, watershed protection, or recreation—rather than sitting idly in the hands of energy speculators. Eliminating low-potential lands from this lease sale could also increase the bids for higher potential lands in other lease sales, as it would restrict supply by making far fewer acres available for lease.

Instead, however, BLM fails to consider option value or timing in proposing to lease these parcels, creating the likelihood that the parcels will be snatched up for minimum value, if not leased noncompetitively, and fail to yield substantial revenues over the lease term. Should BLM proceed in this fashion, it will not obtain fair market value for these parcels, in violation of FLPMA and the MLA.

Recent Economic Developments Further Reduce the Likelihood of Obtaining Fair Market Value and Underscore the Option to Delay

On top of the fact that BLM infrequently obtains fair market value for low-potential lands, economic developments in recent months make that possibility especially remote at this time, and further underscore the need for BLM to account for option value and consider delaying the proposed leasing. Specifically, as the national and global economies have contracted as a result of the COVID-19 pandemic, two particular developments have affected the oil-and-gas sector and make it particularly unlikely for the government to reap fair value for its lands.

¹⁰⁸ Letter from Grand County Council to BLM Re: Grand County Opposition to Bureau of Land Management September 2020 Oil and Gas Lease Sale Affecting Acreage in Grand County 2 (July 7, 2020), *available at* https://www.grandcountyutah.net/AgendaCenter/ViewFile/Agenda/_07072020-1215.

¹⁰⁹ EA at 49.

For one, global oil prices have plunged. The price of crude oil is \$40.51 per barrel as of July 6, 2020, according to data from the U.S. Energy Information Administration, which represents a drop of more than one-third since the start of 2020.¹¹⁰ And although oil prices have somewhat rebounded since reaching unprecedented depths in April—including one day in which prices were negative¹¹¹—they still remain far below pre-pandemic levels, with growing concern about when or if they will reach such levels again. Indeed, some forecasters believe that recent dips in oil prices portend long-term declines: BP recently “cut its estimates for oil and gas prices in the coming decades between 20% and 30%,” as it “now sees the prospect of the pandemic having an enduring impact on the global economy, with the potential for weaker demand for energy for a sustained period.”¹¹² Likewise, the International Monetary Fund projects only a modest rebound in oil prices toward “about 25 percent below the 2019 average.”¹¹³ Not only does decreased long-term oil prices mean that the government will receive lesser royalty payments from any oil that is developed, but substantial volatility and uncertainty in the oil market likely means that companies will be more cautious in their approach and even less willing than normal to make high bids for leasing rights. In this economic climate, failing to even *consider* option value and delayed leasing fails to secure fair market value for the public and is arbitrary and capricious.¹¹⁴

Recent royalty-payment moratoriums compound this trend and supply the second reason that BLM is especially unlikely to obtain fair market value at this moment. Specifically, BLM has been granting requests from oil and gas producers to reduce royalty payments from their already-low levels,¹¹⁵ effectively allowing operators to set their own reduced rates.¹¹⁶ Under this policy, BLM has permitted a rate to be reduced all the way down to 0.5 percent (a 96 percent reduction from the normal 12.5 percent royalty rate) and allowed for unlimited extensions in 60-day increments.¹¹⁷ Oil companies have been taking advantage: BLM approved every application for a reduced royalty rate filed in April, with the rate reduced to 2.5 percent for one-third of leases.¹¹⁸ In Utah alone, BLM reduced

¹¹⁰ *Petroleum & Other Liquids*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/dnav/pet/hist/RWTCD.htm> (last visited July 8, 2020).

¹¹¹ *Id.*

¹¹² Laura Hurst & Amanda Jordan, *BP Writes Off Billions as Covid Redraws Rules of Oil Demand*, Bloomberg (June 15, 2020), <https://www.bloomberg.com/news/articles/2020-06-15/bp-sees-quarterly-charges-write-offs-of-up-to-17-5-billion>.

¹¹³ INT’L MONETARY FUND, *World Economic Outlook Update* (June 2020), available at <https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEOUpdateJune2020>.

¹¹⁴ See, e.g., *supra* notes 58–63, 82–84 and accompanying text.

¹¹⁵ See *supra* note 94.

¹¹⁶ See BLM, REGULATORY AND PROCESS INFORMATION FOR ONSHORE OIL AND NATURAL GAS SUSPENSIONS AND ROYALTY RATE REDUCTION APPLICATIONS DUE TO COVID-19 IMPACTS, <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/covid-royalty-rate-reduction-guidance>.

¹¹⁷ *Id.*

¹¹⁸ *No Relief for Taxpayers: BLM Fast-Tracking Royalty Giveaways*, TAXPAYERS FOR COMMON SENSE, <https://www.taxpayer.net/energy-natural-resources/no-relief-for-taxpayers-blm-fast-tracking-royalty-giveaways/>.

royalty rates for 76 leases covering nearly 90,000 acres—some of which are literally adjacent to lands proposed for lease in this sale.¹¹⁹ And a few weeks ago, BLM made it even easier for producers to seek royalty relief, allowing a reduced rate for any leases that are “uneconomic at the current royalty rate.”¹²⁰ Since royalty rates are currently at record lows—and may remain so for the foreseeable future—BLM is likely to receive limited royalty payments for any parcels that are drilled in the near-to-medium term, further diminishing the value that it will receive from the proposed lease sale.

Consideration of option value would account for these developments and counsel strongly towards delay. In particular, low oil prices and royalty rates—coupled with market uncertainty and volatility—make it especially unlikely for BLM to obtain fair market value for the nominated parcels at this time. Ironically, BLM briefly recognizes that “recent changes in the U.S. and global economies and in the oil and gas sectors” have significantly affected “current economic conditions,”¹²¹ yet fails to take account of this effect in any meaningful fashion when assessing whether to proceed with the proposed lease sale.

In short, BLM is highly unlikely to obtain “fair market value” or “reasonable prices” in the proposed lease sale, in violation of FLPMA and the MLA. Its failure to rationally consider option value or the possibility of delaying these leases would render its determination to lease these parcels arbitrary and capricious.

III. BLM’s Analysis of Economic Impacts Presents an Incomplete and Lopsided Picture That Fails to Give a Hard Look at Key Costs.

BLM also fails to consider numerous adverse economic impacts in its assessment of the proposal’s economic effects, most notably lost tourism revenue, that biases its analysis and skirts NEPA’s requirements for a reasoned and balanced assessment of all impacts. While agencies are not necessarily required to monetize all impacts,¹²² NEPA mandates a “balancing” of considerations,¹²³ both for and against the proposed action. These

¹¹⁹ *Id.*

¹²⁰ Rachel Frazin, *Land Management Bureau Lessens Requirements for Oil and Gas Royalty Cut Requests*, THE HILL (June 18, 2020), <https://thehill.com/policy/energy-environment/503411-land-management-bureau-alters-guidance-for-royalty-cuts-prompting>.

¹²¹ EA at 49.

¹²² See 40 C.F.R. § 1502.23 (explaining that a “cost-benefit analysis” may be “relevant to the choice among environmentally different alternatives ... being considered for the proposed action,” but that “the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations,” and “[i]n any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision”).

¹²³ *Sierra Club v. Sigler*, 695 F.2d 957, 978–79 (5th Cir. 1983) (“[I]t is vitally important that [the environmental assessment] fully and accurately disclose ... costs associated with the project.”); see also *Chelsea Neighborhood Ass’n v. U.S. Postal Serv.*, 516 F.2d 378, 387 (2d Cir. 1975) (“NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities.”).

considerations must be provided in detail that “allows those removed from the initial process to evaluate and balance the factors on their own.”¹²⁴

BLM provides detailed projections of the beneficial economic and government-revenue impacts of the proposed oil and gas lease sales in the draft EA, while making only cursory reference to “concern about effects on recreation and tourism activities” without similar analysis or meaningfully taking these impacts into account.¹²⁵ Specifically, BLM monetizes the proposed lease sale’s direct, indirect, and induced employment effects, labor income effects, and output effects on recreation and tourism without accounting for the myriad ways in which drilling infrastructure and resource extraction activity may decrease the region’s tourism and thereby blunt those beneficial impacts. Making matters worse, the EA even presents numerical estimates of increased tourism-related spending from oil and gas employment, noting only briefly and without analysis that “[a] reduction of spending within the same industrial sectors would have opposite effects.”¹²⁶ Not only is decreased activity in key economic sectors as a result of oil and gas development relevant to reasoned and balanced analysis, but it is also readily quantifiable.¹²⁷

Such perfunctory reference to projected adverse economic effects is a clear failure to meet NEPA’s requirements to “indicate those considerations ... which are likely to be relevant and important to a decision.”¹²⁸ Perhaps the most substantial of these considerations is lost tourism revenue in a region for which tourism is the vital economic lifeblood of communities. In Grand County, Utah, where many of the parcels in this lease sale are located, travel and tourism represents 49% of total employment, compared with a national average of just 15.9%.¹²⁹ Seasonality of unemployment, another measure of tourism activity, varies from nearly 13% unemployment in the winter season when visitors are scarce, to under 2% in the summer during high visitation.¹³⁰ Finally, over 42% of Grand County’s employment is in the travel and tourism sector, 15.6% of which is

¹²⁴ *Calvert Cliffs’ Coordinating Comm. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1113-14 (D.C. Cir. 1971) (holding that “NEPA mandates a rather finely tuned and ‘systematic’ balancing analysis” that “provides evidence that the mandated decision making process has in fact taken place”).

¹²⁵ EA at 51.

¹²⁶ *Id.*

¹²⁷ See Janaki R. R. Alavalapati & Wiktor L. Adamowicz, *Tourism Impact Modeling for Resource Extraction Regions*, 27(1) ANNALS OF TOURISM RES. 188 (2000), [https://doi.org/10.1016/S0160-7383\(99\)00064-X](https://doi.org/10.1016/S0160-7383(99)00064-X), for one example of a simple model used to measure the impact of resource extraction on tourism. However, in recent years, techniques for such modeling have developed dramatically and can be used either broadly or for granular analysis. See generally Holger Robert Maier et al., *Introductory Overview: Optimization Using Evolutionary Algorithms and Other Metaheuristics*, 114 ENVTL. MODELLING & SOFTWARE, https://www.researchgate.net/publication/329351246_Introductory_overview_Optimization_using_evolutionary_algorithms_and_other_metaheuristics.

¹²⁸ 40 C.F.R. § 1502.23.

¹²⁹ HEADWATERS ECON., *A Profile of Industries That Include Travel & Tourism: Grand County* 6 (2020).

¹³⁰ *Id.* at 10.

accommodation¹³¹—a visitor-only sector of the local economy that would not be replaced by any purported population increase due to the proposed action.¹³² Even when tourism-specific sectors such as accommodation are patronized by oil and gas workers, the effect is likely to crowd out tourists that also patronize other tourism oriented businesses and are “part of a long-term economic development trajectory for the region,” as opposed to any “boom” from resource extraction that “will be relatively short-term and non-local.”¹³³

Several parcels are located near state and national parklands that attract hundreds of thousands of visitors each year,¹³⁴ as well as wilderness areas, historic trails, and special recreation management areas. BLM itself notes that “development might impair the visitor experience ... through palpable noise and visible impact.”¹³⁵ Research provides that such impacts are likely to reduce local tourism in the long-term, creating a “‘boom-bust’ economic development pattern seen in many resource rich regions and counties.”¹³⁶ For instance, BLM “found that visitation to Utah’s Dinosaur National Monument declined by over 40 percent between 1999 and 2014 as oil production in Uintah County increased by 358 percent and gas production increased by 339 percent”—just one notable and nearby example of many similar instances in which tourism dropped as oil and gas exploration increased.¹³⁷

While BLM indicates that the government may benefit from royalties on oil and gas drilling, it fails to acknowledge the significant potential offsetting losses in tourism tax revenue. Grand County sends \$5.4 million per year to the state of Utah in transient room tax revenue alone,¹³⁸ and in 2018, visitors brought \$312.8 million in total taxable spending to

¹³¹ *Id.* at 14.

¹³² EA at 49.

¹³³ Andrew Rumbach, *Natural Gas Drilling in the Marcellus Shale: Potential Impacts on the Tourism Economy of the Southern Tier*. Prepared for the Southern Tier Central Regional Planning and Development Board 9 (2011), http://greenchoices.cornell.edu/resources/publications/drilling/Impacts_on_Tourism_Economy.pdf.

¹³⁴ *Canyonlands*, NAT’L PARK SERV., <https://www.nps.gov/cany/learn/management/statistics.htm>. (last visited July 8, 2020).

¹³⁵ EA at 13.

¹³⁶ Rumbach, *supra* note 131, at 15 (expanding on how “what is most important, however, is the *cumulative* impact of drilling activity” including roads, truck traffic, drilling stations, “and dozens of other small impacts to the visual environment that combine to create an industrial, rather than scenic, landscape”). See also Susan Christopherson & Ned Rightor, *How Shale Gas Extraction Affects Drilling Localities: Lessons For Regional and City Policy Makers*, 2 J. Town & City Mgmt. 1 (2011), http://greenchoices.cornell.edu/resources/publications/drilling/Effects_on_Drilling_Localities.pdf, (noting that tourism impacts of drilling include accommodation availability, prolonged high-decibel noise disruption, and the economic “crowding out” effect); Jannette M. Barth, *The Economic Impact of Shale Gas Development on State and Local Economies: Benefits, Costs, and Uncertainties*, 23 NEW SOLUTIONS: J. Env’tl. & Occupational Health Policy 85 (2013), <https://journals.sagepub.com/doi/pdf/10.2190/NS.23.1.f>, (naming tourism as an industry “incompatible” with oil and gas drilling).

¹³⁷ W. VALUES PROJECT, *Oil and Gas Development at the Doorstep of “America’s Best Idea”* 1 (2016), <http://westernvaluesproject.org/wp-content/uploads/2016/08/Parks-Drilling-Report-8-24-16-.pdf>.

¹³⁸ *The State of Utah’s Travel and Tourism Industry 2019*, KEM C. GARDNER POLICY INSTITUTE, UNIV. OF UTAH, <https://gardner.utah.edu/wp-content/uploads/2019-TTtrifold.pdf>.

the county.¹³⁹ The local community understands the importance of this revenue for their communities: The Moab City Council recently asked BLM not to proceed with these lease sales, citing the importance of tourism to the economy as well as pollution from the proposed “massive industrial development that traverses some of our prime recreational areas.”¹⁴⁰ Even amidst the Covid-19 pandemic, visitors and locals can participate in many outdoor recreation and tourism activities in the Moab region, such as socially-distanced hiking, camping, climbing, biking, and more.

The stark indicators of the importance of tourism revenue contrast sharply with BLM’s failure to meaningfully evaluate the costs of reduced tourism due to resource extraction in the draft EA as required by NEPA. This leads BLM to falsely suggest that the proposed lease sale will have overwhelmingly positive economic impacts, creating an unrealistic and misleading picture that excludes substantial costs. Proceeding with the lease sale based on such an inconsistent analysis would too be arbitrary and capricious.¹⁴¹

CONCLUSION

For all the foregoing reasons, BLM’s analysis of the proposed lease sale is deficient. Because BLM fails to account for multiple-use values, does not consider viable alternatives including the alternative of delayed leasing, and disregards key adverse economic impacts likely to result from the proposed lease, proceeding with the lease would be arbitrary and capricious in violation of FLPMA, the MLA, and NEPA.

Respectfully,

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¹³⁹ *Utah Travel and Tourism County Profiles 2018*, KEM C. GARDNER POLICY INSTITUTE, UNIV. OF UTAH, <https://travel.utah.gov/wp-content/uploads/Utah-Travel-and-Tourism-County-Profiles-2018.pdf>.

¹⁴⁰ Kate Groetzing, *Moab City Council Asks Trump Administration To Cancel Upcoming Auction of Public Land For Drilling*, KUER NPR (June 25, 2020), <https://www.kuer.org/post/moab-city-council-asks-trump-administration-cancel-upcoming-auction-public-land-drilling>.

¹⁴¹ See, e.g., *Johnston v. Davis*, 698 F.2d 1088, 1094–95 (10th Cir. 1983) (remanding an environmental impact statement because “unrealistic” assumptions “misleading[ly]” skewed comparison of the project’s positive and negative effects); *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1198 (9th Cir. 2008) (finding a NEPA analysis insufficient after agency “put a thumb on the scale by undervaluing the benefits and overvaluing the costs”); see generally *Bus. Roundtable v. SCC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (reversing agency determination for “inconsistently and opportunistically fram[ing] the costs and benefits” of a rule”).

Attachments:

- 1) CONGRESSIONAL BUDGET OFFICE, *Options for Increasing Federal Income from Crude Oil and Natural Gas on Federal Lands* (2016)
- 2) CTR. FOR AM. PROGRESS, *Oil and Gas Companies Gain by Stockpiling America's Federal Land* (2018)
- 3) GOV'T ACCOUNTABILITY OFFICE, *Improved Collection and Use of Data Could Enhance BLM's Ability to Assess and Mitigate Environmental Impacts* (2017)
- 4) HEADWATERS ECON., *A Profile of Industries That Include Travel & Tourism: Grand County* (2020)
- 5) Jayni Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1 (2018)
- 6) Jayni Hein, et al., *Look Before You Lease* (2020)
- 7) INT'L MONETARY FUND, *World Economic Outlook Update* (June 2020)
- 8) Michael Livermore, *Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581 (2013)
- 9) Eric Lipton & Hiroko Tabuchi, *Energy Speculators Jump on Chance to Lease Public Land at Bargain Rates*, N.Y. TIMES (Nov. 27, 2018)
- 10) Andrew Rumbach, *Natural Gas Drilling in the Marcellus Shale: Potential Impacts on the Tourism Economy of the Southern Tier. Prepared for the Southern Tier Central Regional Planning and Development Board* (2011)
- 11) TAXPAYERS FOR COMMON SENSE, *Gaming the System: How Federal Land Management in Nevada Fails Taxpayers*
- 12) TAXPAYERS FOR COMMON SENSE, *Locked Out: The Cost of Speculation in Federal Oil and Gas Leases* (2017)
- 13) U.S. BUREAU OF OCEAN & ENERGY MGMT., *2017-2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING DRAFT PROPOSED PROGRAM* (2015)
- 14) W. VALUES PROJECT, *Oil and Gas Development at the Doorstep of "America's Best Idea"* (2016)
- 15) THE WILDERNESS SOCIETY, *No Exit: Fixing the BLM's Indiscriminate Energy Leasing* (2016)