To: Carlsbad Field Office, Bureau of Land Management

Subject: Comments on Failure to Monetize Greenhouse Gas Emissions in the Environmental Assessment for Big Papi Federal Com Application for Permit to Drill

Docket No.: DOI-BLM-NM-P020-2021-0267-EA


The following comments focus on the failure of the Bureau of Land Management (“BLM”) to reasonably assess climate damages in the above-captioned environmental assessment (“EA”), which concerns an application for permit to drill near Loving, New Mexico. In April of this year, Secretary of the Interior Deb Haaland issued Secretarial Order 3399, which recognizes that the social cost of greenhouse gases provides a “useful measure to assess the climate impacts of [greenhouse gas] emission changes from Federal proposed actions, in addition to rulemakings,” and notes that the metric “is an essential tool to quantify the costs and benefits associated with a proposed action’s [greenhouse gas] emissions” and so is “relevant to the choice among different

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

alternatives being considered.” 3 BLM’s arguments against assessing climate damages using the readily available monetary-damage estimates developed by the federal Interagency Working Group for the Social Cost of Greenhouse Gases (“Working Group”) are misguided and inconsistent with recent executive guidance. As BLM continues to assess the proposal, it should apply the social cost of greenhouse gases to help it determine whether the proposal is justified considering the climate costs involved.

The proposed action is a part of widespread fossil fuel development in New Mexico, which will result in major climate impacts that should merit the agency’s careful consideration. In the EA, BLM forecasts that oil and gas development in the Pecos District region, of which the Carlsbad Field Office area is a part, will produce more than 8 million metric tons of annual direct greenhouse gas emissions and 50 million metric tons of annual indirect greenhouse gas emissions under reasonably foreseeable development scenarios through 20354—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. The application for permit to drill under review in the EA, if approved, would result in between 2 million and 2.8 million metric tons of those downstream greenhouse gas emissions.5 While the National Environmental Policy Act (“NEPA”) requires BLM to disclose and assess the significance of the EA’s contributions to such actual environmental impacts, the agency provides only volumetric emissions estimates per well 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. If it had applied the social cost of greenhouse gases, however, it would have found that each well would conservatively produce between $19 million and $27 million in climate damages6—meaning that the wells covered under the EA would result in between $114 million

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3 Dep’t of the Interior, Secretarial Order 3399 § 5(b) (Apr. 16, 2021).
4 EA at 23.
5 The EA reports that Bone Spring Wells and Wolfcamp Shale Wells would result in “end use combustion” of 341,850 and 479,880 metric tons of carbon dioxide equivalent, respectively. Id. at 23. The EA further specifies that there would be six wells. Id. at 3. If all six wells were of the former type, then together the six wells would produce 2.05 million metric tons of CO2e. If all six wells were of the latter type, then together the six wells would produce 2.88 million metric tons of CO2e. If there were three of each, then together the six wells would produce 2.47 million metric tons of CO2e.
6 According to the latest estimates from the Interagency Working Group on the Social Cost of Greenhouse Gases, the central value (i.e., using a 3% discount rate) of the social cost of carbon for 2025 emissions is $56. INTERAGENCY WORKING GRP. ON THE SOC. COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON, METHANE, AND NITROUS OXIDE – INTERIM ESTIMATES UNDER EXECUTIVE ORDER 13,990, at 5 (2021) [hereinafter IWG TECHNICAL SUPPORT DOCUMENT]. Multiplying the above emissions per well estimates by the ‘central’ estimates of $56 per metric ton for year 2025 emissions, we find that each Bone Spring Well’s emissions would result $19.14 million worth of climate damages and each Wolfcamp Shale Well’s emissions would result in $26.87 million worth of climate damages.

However, we note that the social cost of carbon increases each year, so this is an underestimate and represents the climate damages the project would cause only if the social cost of carbon were worth $56 every year from 2025 forward. However, for year 2045 emissions, for example, the social cost of carbon is $79/metric ton. In a full cost-benefit analysis, the project lifetime climate damages total would be discounted back to present value.
and $161 million of aggregate climate damages as a baseline underestimate.7 These are significant figures that should not be ignored.

Yet rather than using the readily available social cost of greenhouse gases metric to contextualize the significance of the project’s climate impacts, BLM makes several erroneous arguments in a misguided attempt to justify its failure to take this simple but critical step. First, BLM argues that the social cost of greenhouse gases is inappropriate in the NEPA context, both because such application is not the rulemaking context for which the metric was originally developed and because NEPA does not require a cost-benefit analysis.8 Second, BLM claims that the incremental contribution to global greenhouse gases of a land management action “cannot be accurately translated into effects on climate change”9 and that the social cost protocol “does not measure the actual incremental impacts of a project on the environment.” 10 And third, BLM claims the social cost metric does not “include all damages or benefits from carbon emissions,” and so monetization of climate damages “would yield information that is both potentially inaccurate and not useful.”11 As detailed below, these arguments are all erroneous.

Finally, and perhaps most egregiously, BLM cites to an executive order issued by former President Trump that was rescinded by President Biden months before the EA was published. Rather than rely on outdated authorities, BLM should rely on current authorities from the President and Secretary of the Interior that endorse agency use of the social cost of greenhouse gases.

**Monetizing Climate Damages Fulfills the Requirements and Goals of NEPA**

First, BLM is incorrect in its assertion that using the social cost of greenhouse gases is inappropriate in the NEPA context. NEPA requires an assessment of a project’s significance, and whenever possible, agencies should rely on established tools to assess the significance of an environmental impact.12

When a project has climate consequences that must be assessed under NEPA—which the proposed action does—monetizing those climate damages—which BLM fails to do here—fulfills an agency’s legal obligations in ways that simple quantification of greenhouse gas emissions

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7 As the EA specifies there will be six total wells. See EA at 3. This range represents a low-end estimate of all six wells being Bone Spring Wells and a high-end estimate of all six wells being Wolfcamp Shale Wells. The above caveat that this lifetime total is an underestimate because we use the year 2025 emissions value and the social cost of greenhouse gases increases each year applies to this calculation, as well.
8 EA at 20.
9 Id. at 22.
10 Id.
11 Id.
cannot. NEPA requires “hard look” consideration of beneficial and adverse effects of each alternative option for major federal government actions. The 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.” Courts have repeatedly concluded that an environmental impact statement must disclose relevant climate effects. “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 to fail to “provide the necessary contextual information about the cumulative and incremental environmental impacts.”

By monetizing climate damages using the social cost of greenhouse gas metrics, BLM 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. 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. And by presenting climate impacts in the common metric of dollars, the tool makes it much easier for the public and decisionmakers to contextualize and assess the significance of an action’s contributions to climate change. In fact, several agencies, including the Bureau of Land Management, have used the social cost of greenhouse gases to assess a project’s climate impacts under NEPA. By now focusing only on volume estimates, BLM falls short of its legal obligations.

Instead of providing much needed context to the proposal’s climate impacts, BLM simply reports greenhouse gas emissions for reasonably foreseeable development scenarios across a variety of jurisdictions, including regional field offices, states, and the United States as a whole. This

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15 See, e.g., Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008) (“[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.”); 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).
16 Id. at 1217.
information tells the reader almost nothing about the nature and magnitude of the project’s actual environmental effects and is insufficient to inform the agency’s analysis under NEPA.

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

Second, BLM is incorrect in its assertions that an individual project’s greenhouse gas emissions “cannot be accurately translated into effects on climate change,” and that the social cost of greenhouse gases does not reflect the “actual incremental impacts” of a project on the climate. Those claims are erroneous. The social cost metric is precisely such a tool that allows an agency to weigh climate impacts against other effects.

The social cost of greenhouse gas methodology is well suited to measure the marginal climate damages of individual projects. It was developed to assess the social 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 simulations known as “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 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. 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 EA 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. A key advantage of using the social

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19 Sarinsky et al., supra note 13, at 8–12.
20 2010 TSD, supra note 17.
21 Id.
22 Id.
23 Id.
24 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,
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 conveniently groups together a multitude of climate impacts and enables agencies to assess whether all those impacts are cumulatively significant and to compare those impacts with other project effects (and the effects from other alternatives) using a common metric.

Moreover, the tons of greenhouse gases emitted by a project are 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 cardiovascular and respiratory mortality from heat-related illnesses and changing disease vectors like malaria and dengue fever. Even in combination with a general, qualitative discussion of climate change, by calculating only the tons of greenhouse gases emitted, BLM fails to meaningfully assess the actual incremental impacts to property, human health, productivity, and so forth. 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.” The social cost of greenhouse gases, in contrast, assesses the degree of climate impacts from an incremental unit of emissions.


25 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).

26 See id.; High Country Conservation Advocates v. United States 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”).

27 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.”).
BLM claims that the social cost of greenhouse gases “does not include all damages or benefits from carbon emissions” nor does it reflect “the full social benefits of carbon-based energy production,” and so “quantifying only the costs of [greenhouse gas] emissions but not the benefits would yield information that is both potentially inaccurate and not useful.” First, the social cost metric does consider positive effects of climate change. Second, uncertainty due to incomplete information is not a reason to abandon the social cost of greenhouse gas methodologies. To 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. And as a federal court has explained, “BLM cannot ignore scientifically robust methods that exist to assess the actual effects of greenhouse gas emissions by again insisting they are too speculative or not ‘reasonably foreseeable.’”

The models that underly the social cost of greenhouse gases protocol do account for benefits from carbon dioxide emissions. Furthermore, the Working Group has acknowledged that its social cost of greenhouse gases valuations do not capture all impacts of climate change (either positive or negative), and independent experts broadly agree that the interim estimates likely undervalue true climate damages because they omit far more negative effects than positive ones. For instance, the Working Group has explained that several of the underlying economic models omit certain major damage categories such as catastrophic damages and certain cross-regional spillover effects. These effects can be massive: One paper, for instance, finds that the inclusion of tipping points doubles or triples the social cost estimates, while another paper explains that the Working Group’s existing values “may be significantly underestimating the needs for controlling climate change.”

The current consensus of experts puts damages for a 3°C
increase at roughly 5% to 10% of gross domestic product, which is substantially higher than the damages estimated by the IAMs. As the U.S. Court of Appeals for the Ninth Circuit has explained, the presence of some omitted damages does not provide a legal basis to ignore established methodologies to monetize climate damages, since while “there is a range of plausible values, the value of carbon emissions reduction is certainly not zero.”

Finally, numerous federal agencies, including BLM, have had no difficulty applying the social cost metric in their environmental impact statements despite the uncertainty that BLM now raises in the EA. For example, in November 2016, BLM used the social cost of methane in an environmental assessment to illustrate the range of climate benefits that would result from the Waste Prevention Rule. And in August 2017, the Bureau of Ocean Energy Management applied the Working Group’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, and called the estimates “a useful measure to assess the benefits of CO₂ reductions and inform agency decisions.” More recently, the United States Postal Service has applied the social costs of carbon, methane, and nitrous oxide to a draft environmental impact statement for a vehicle procurement proposal.

**BLM Should Adhere to Recent Guidance and Executive Precedent Endorsing the Social Cost Metric**

Finally, rather than trying to meaningfully assess the project’s potential climate impacts, BLM relies on previously used—and now outdated—language to argue against using the social cost of greenhouse gases. In particular, the EA cites Executive Order 13,783, a 2017 order that disbanded the Interagency Working Group on the Social Cost of Greenhouse Gases and

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38 See, e.g., Peter Howard & Derek Sylvan, Inst. for Pol’y Integrity, *Gauging Economic Consensus on Climate Change* 25 (2021) (reporting mean estimate of 8.5% GPD loss and median estimate of 5% loss, based on elicitation of over 700 climate-policy experts).

39 2010 TSD, supra note 17, at 9 fig.1A (showing range of GDP loss below 5% for 3°C temperature increase).

40 *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1,172, 1,200 (9th Cir. 2008).


44 *Id.* at 3-129.


46 Nearly identical language appears in the 2018 Carlsbad Field Office resource management plan. Carlsbad RMP at 2-81-82.
withdrew the group’s technical support documents and the estimates contained therein.\footnote{EA at 20 (citing Promoting Energy independence and Economic Growth, Exec. Order 13,783, 82 Fed. Reg. 16,093 (Mar. 17, 2017)).} Although this executive order did not, in fact, prohibit agencies from using the social cost of greenhouse gases,\footnote{See Joint Carlsbad RMP comments, supra note 12, at 15-16 for a further explanation of why Executive Order 13,783 did not prohibit agencies from using the Working Group’s social cost of greenhouse gases.} it nevertheless has since been withdrawn by Executive Order 13,990, which President Biden issued on his first day in office.\footnote{Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, Exec. Order 13,990, 86 Fed. Reg. 7037 (Jan. 20, 2021).}

In addition to reinstating the Working Group, Executive Order 13,990 recognizes that “an accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions,”\footnote{Id. § 5.} and tasks all federal agencies with addressing the climate crisis. Following this executive order, Secretary of the Interior Deb Haaland issued Secretarial Order 3399, discussed above, which recognizes that social cost of greenhouse gases is useful in the context of “Federal proposed actions,” as well as in rulemakings.\footnote{Dep’t of the Interior, Secretarial Order 3399, supra note 3, § 5(b).} It is therefore incongruous with government-wide and agency-specific guidance for BLM to reject the social cost of greenhouse gases protocol as it has done in the EA.

Most recently, the Council on Environmental Quality (“CEQ”), in its proposed revisions to its NEPA regulations, indicated that the social cost of greenhouse gases is an appropriate tool for use in NEPA review. The proposal states that the consideration of “reasonably foreseeable indirect effects,” like the impacts of greenhouse gas emissions that result from the combustion of fossil fuel, “can provide important information on the selection of a preferred alternative.”\footnote{National Environmental Policy Act Implementing Regulations Revisions, 86 Fed. Reg. 55,757, 55,763 (proposed Oct. 7, 2021).} CEQ then notes that “[a]gencies may consider all available tools and resources in assessing [greenhouse gas] emissions and climate change effects of their proposed actions,” and states that agencies may find the Working Group’s social cost of greenhouse gases valuations “helpful in considering greenhouse gas emission effects and mitigation as part of the NEPA process.”\footnote{Id. at n.25.}

Though conservative, the 2021 interim estimates from the Working Group are currently the best available estimates for the social costs of carbon, methane, and nitrous oxide. The Working Group is expected to release updated values in early 2022, and due to various developments in our understanding of the science and economics of climate change over the past decade, those values could be significantly higher than the existing estimates. BLM should use the 2021 interim estimates until these updated values are available.

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We hereby attach joint comments to the 2018 Carlsbad Draft Resource Management Plan submitted by many of the undersigned organizations, which further discuss the need for BLM to apply the social cost of greenhouse gases in NEPA assessments of fossil-fuel extraction and

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BLM should consider all relevant arguments expressed in the attached comments to be comments made on the EA as well. As these attached comments further explain, and as detailed above, BLM will continue to violate NEPA unless it uses the social cost of greenhouse gases to assess the climate-related impacts of the proposed action.

Sincerely,

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

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54 Joint Comments on RMP, *supra* note 12.
Attachments: