The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”) offers the following comments to the Department of the Interior (“Interior”) to inform its interim report on reforming the federal oil and gas leasing program. 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. We have written extensively on the consideration of greenhouse gas emissions and other environmental impacts in oil, gas, and coal leasing, and have called on Interior to take numerous measures to reduce the environmental impacts of fossil-fuel extraction on federal lands.

Programmatic review of the federal leasing program is long overdue. For decades, the federal government has leased far too many lands and waters to oil and gas developers on far too favorable terms. As a result, fossil-fuel extraction on federal lands now constitutes a substantial share of the nation’s greenhouse gas emissions, to a degree that is incompatible with both Biden administration and international climate goals. Fossil-fuel extraction is also threatening wildlife, increasing the risk of catastrophic oil spills, and restricting other beneficial uses of land including recreation, conservation, and renewable-energy development. All the while, prospectors are receiving federal lands on favorable terms that fail to deter climate pollution, encourage speculation, and deprive taxpayers and local governments of a fair return.

1 These comments do not represent the views, if any, of New York University School of Law.

2 In Executive Order 14,008, President Biden called on Interior to promote renewable energy development on federal lands and waters (including doubling offshore wind production by 2030) and pause oil-and-gas leasing to undertake a “comprehensive review and reconsideration of Federal oil and gas permitting and leasing practices in light of the Secretary of the Interior’s broad stewardship responsibilities over the public lands and in offshore waters, including potential climate and other impacts associated with oil and gas activities.” Exec. Order No. 14,008 §§ 207–08, 86 Fed. Reg 7619 (Jan. 27, 2021).


5 Most notably, federal royalties for both onshore and offshore mineral development are set either at or near statutory minimums, lag behind comparable royalty rates of other jurisdictions, fail to maximize royalty revenue,
Interior should pursue concurrent action on three fronts to restore rationality to the leasing program. First, the agency should revise management plans to curtail leasing and prioritize conservation and other beneficial uses, with a goal of achieving zero, net-zero, or net-negative emissions by 2030. Second, Interior should strengthen mitigation requirements on any fossil-fuel extraction that occurs including restoring restrictions on methane pollution, groundwater contamination, and oil-spill risk and considering greenhouse gas offsets on fossil-fuel extraction. And third, Interior should adjust the fiscal terms of new and modified leases to account for the costs of climate change and ensure a fair return to taxpayers. Additional detail on these recommendations is provided below and in the attached Policy Integrity report from September 2020 titled “A New Way Forward on Climate Change and Energy Development for Public Lands and Waters.”

For any reforms that Interior pursues, it will be critical for the agency to support those reforms with strong analysis that adequately assesses both beneficial and adverse impacts. Because good analysis takes time, Interior should begin assembling its analytical tools as soon as possible including developing an improved energy substitution model that corrects the myriad failures of its existing MarketSim model. The second section of these comments discusses the numerous analytical improvements that Interior should consider to support reforms to the leasing program. Policy Integrity plans to publish additional materials in the coming months on how Interior can legally and economically support long-overdue reforms.

I. Interior Should Comprehensively Reform the Federal Onshore and Offshore Leasing Programs by Curtailing Leasing, Strengthening Mitigation Requirements, and Ensuring a Fair Return

A. Interior Should Substantially Curtail Fossil-Fuel Leasing, Tighten Standards for Lease Suspension, and Promote Renewable Energy Development on Public Lands

Interior has broad authority to manage federal lands to “take[] into account the long-term needs of future generations for renewable and nonrenewable resources,” and to manage federal lands “without permanent impairment of the productivity of the land and the quality of the environment.” And as the President has laid out, “[r]esponding to the climate crisis will require both significant short-term global reductions in greenhouse gas emissions and net-zero global emissions by 2050.”


8 43 U.S.C. § 1702(c).
emissions by mid-century or before.”9 Pursuant to these mandates, Interior should revise resource management plans (“RMPs”) for onshore lands and embark on a new five-year planning process for offshore waters that seeks a drastic reduction in greenhouse gas emissions consistent with the nation’s climate goals.

For onshore public lands, the Bureau of Land Management (“BLM”) should amend RMPs and consider the possibility of no new leasing and/or meeting a target of zero, net-zero, or net-negative emissions by 2030. These options are not mutually exclusive, and could be pursued in combination. The first alternative is consistent with President Biden’s campaign calls to “ban new oil and gas permitting on public lands and waters.”10 The second alternative would sharply curtail new leasing and phase-out emissions from existing wells (which are typically subject to 5–10 year leases) by 2030. To meet a net-zero emissions goal, BLM should also consider using offsets in the form of carbon sequestration, reforestation, greater renewable energy production, and other strategies to reduce emissions within the planning area.

For offshore lands and waters, the Bureau of Ocean Energy Management (“BOEM”) should embark upon a new five-year planning process to develop a program that seeks to achieve net-zero greenhouse gas emissions in the medium-term, by roughly 2030, or at least a sharp reduction in greenhouse gas emissions. The Outer Continental Shelf Lands Act requires BOEM to weigh “the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone,”11 and provides broad discretion for the agency to account for “shift[s] with changes in technology, in environment, and in the nation’s energy needs.”12 While a complete restriction on offshore lease sales may face legal challenge,13 a net-zero emissions approach (which entails a sharp curtailment in leasing plus mitigation and offsets of greenhouse gas emissions, as explained further below) is prudent. The administration should also withdraw sensitive or frontier areas (like the Arctic Ocean)14 and/or refrain from offering any leases in certain planning areas.15

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9 Exec. Order No. 14,008 § 101; see also id. § 201 (calling on agencies to “deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050”).


12 California ex rel. Brown v. Watt (Watt I), 668 F.2d 1290, 1317 (D.C. Cir. 1981); see also California ex rel. Brown v. Watt (Watt II), 712 F.2d 584, 600 (D.C. Cir. 1983) (“[G]reat deference is afforded to the secretary in these areas.”).

13 See Ctr. for Biological Diversity v. U.S. Dep’t of the Interior, 563 F.3d 466, 485 (D.C. Cir. 2009) (explaining that “Congress has already decided that the OCS should be used to meet the nation’s need for energy,” and that BOEM’s duty under OCSLA is to “minimize[] the local environmental damage to the OCS,” but that “Interior simply lacks the discretion to consider any . . . effects that oil and gas consumption may bring about”).

14 See 43 U.S.C. § 1341(a) (“The President of the United States may, from time to time, withdraw from disposition any of the unleased lands of the outer Continental Shelf.”).

15 See, e.g., Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 603–07 (upholding Interior’s decision to not offer any lease sales in some planning areas in Alaska in the 2012-2017 leasing program).
In addition to revising management plans to curtail fossil-fuel leasing, Interior should take additional steps to remove public lands from fossil-fuel developers and promote more beneficial uses. For one, Interior should tighten standards for lease suspensions to ensure that speculative fossil-fuel leases expire in a timely fashion so that lands are restored to federal control. While lease suspensions should be issued only in narrow circumstances, BLM in particular has liberally granted requests for suspensions, and maintained those suspensions long-term. As of 2018, more than 2,700 leases were being suspended by BLM—nearly 1,000 of which had been suspended for ten years or longer. By maintaining these lease suspensions, the agency prevents the natural termination of the lease and prevents the land from returning to federal control where it can be put to more productive use. Moving forward, BLM should both undertake a systemic review of existing lease suspensions and set forth policies tightening standards for their issuance and continuation.

Moreover, Interior should use the planning and leasing processes to facilitate renewable energy generation on public lands and waters. Federal lands and waters offer vast potential for renewable energy development: President Biden has called for the doubling of offshore wind energy generation by 2030, and many public lands are well suited to wind and solar development as well. To unleash this potential, both BLM and BOEM should identify areas with strong renewable potential and expand on the use of programmatic environmental impact statements to facilitate renewable development. As part of this assessment, Interior should evaluate the possibility of siting renewable-energy projects as a means to help revitalize communities that stand to suffer adverse localized effects from a reduction in fossil-fuel development. Interior should also consider efforts to improve timely permitting of solar and wind development, including potentially revising its rule on competitive terms for leasing public lands for solar and wind energy.

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18 Exec. Order No. 14,008 § 207.
20 See Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections, 81 Fed. Reg. 92,122 (Dec. 19, 2016). Common criticisms of this rule include: a fee structure that may be too costly for renewables, especially as compared to fossil fuels; a capacity fee that may favor solar PV over wind energy without adequate justification; and a capacity fee that charges companies for the total capacity of the leasehold, not the amount of power actually being generated.
B. Interior Should Impose Stringent Environmental Mitigation Requirements on Fossil-Fuel Extraction

For fossil-fuel extraction that does occur on federal lands and waters, Interior should strengthen mitigation requirements for both greenhouse gases and other environmental impacts to minimize risks of air and water pollution and alleviate impacts on climate change.

Interior has broad discretion to impose environmental mitigation requirements on fossil-fuel extraction, both through regulation and through individual mitigation requirements reflected in stipulations at the leasing or permitting stage. Indeed, Congress specifically provided that BLM, in overseeing energy extraction, “shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.”21 The Outer Continental Shelf Lands Act likewise authorizes BOEM to pursue “orderly development, subject to environmental safeguards,”22 and requires the agency “to prevent or minimize the likelihood of blowouts, loss of well control, fires, spillages, physical obstruction to other users of the waters or subsoil and seabed, or other occurrences which may cause damage to the environment or to property, or endanger life or health.”23

Interior should exercise its mitigation authority by imposing tight controls on both onshore and offshore drilling both through regulation and stipulation. On the regulatory front, Interior should reestablish and strengthen regulations put in place during the Obama administration (and subsequently rolled back during the Trump administration) to reduce methane waste,24 minimize groundwater contamination from hydraulic fracturing,25 and reduce the risk of catastrophic oil spills from offshore drilling.26 Although those Obama-era rules were typically supported by strong cost-benefit analyses, Interior revised those analyses in rescinding the regulations in ways that were inconsistent with the best available science and economics—such as by disregarding all climate impacts that occur beyond the nation’s borders.27 In restoring and strengthening mitigation regulations, Interior should look to those Obama-era cost-benefit analyses as a starting point.

21 43 U.S.C. § 1732(b). Other provisions of the Federal Land Policy and Management Act further emphasize BLM’s responsibility to act as a steward over the land. For instance, the statute defines “multiple use” as requiring BLM to make “judicious use” of federal lands without “permanent impairment of the . . . quality of the environment,” and for BLM to manage public lands in a manner “that will best meet the present and future needs of the American people.” Id. § 1702(c)

22 Id. § 1332(3).

23 Id. § 1332(6).

24 Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008 (Nov. 18, 2016). This rule was recently vacated by a federal court in the District of Wyoming; the decision has been appealed to the U.S. Court of Appeals for the Tenth Circuit. Attempts by BLM to regulate methane waste through regulation may be challenging until that appeal is decided.


Interior should also consider applying stronger greenhouse gas mitigation and offset requirements at the permitting or leasing stage as a form of compensatory mitigation. The Council on Environmental Quality specifically authorizes agencies to consider “appropriate mitigation measures” for any project, including “compensating for the impact by replacing or providing substitute resources or environments.” And in its 2017 programmatic assessment of the federal coal program, BLM proposed that the agency “receive compensation for unavoidable impacts associated with carbon-based externalities from lessees in the form of a fee paid at lease issuance based on the units of coal produced,” which BLM would then use to “ensur[e] that the desired outcomes of compensatory mitigation are achieved.”

A similar compensatory mitigation requirement in the context of the oil and gas program, by which developers would be required to offset some or all of their emissions as a condition of extraction, would reduce carbon pollution from existing drilling while also reducing drilling by shifting the costs of greenhouse gas pollution onto the producers who are responsible for creating them. Especially because many of the financial measures discussed in the next section to internalize externalities likely cannot be applied after the leasing stage, an offset requirement could be especially critical for reducing greenhouse gas emissions for lands that have already been leased.

C. Interior Should Increase Royalties, Rental Fees, Minimum Bids, and Bonding Requirements to Ensure a Fair Return to Taxpayers

Despite being required to receive “fair market value” for both onshore and offshore lands, Interior has hardly adjusted financial terms in decades even though our understanding of climate change has greatly expanded and inflation has made those financial terms more favorable for developers. Interior should update these lease terms as part of its programmatic evaluation.

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28 40 C.F.R. § 1502.14(e).
29 Id. § 1508.1(s)(5); see also Final Guidance for Federal Departments and Agencies on the Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, 76 Fed. Reg. 3843, 3848 (Jan. 21, 2011) (explaining that “many agencies develop and consider committing to mitigation measures to avoid, minimize, rectify, reduce, or compensate for potentially significant adverse environmental impacts”).
31 See Michael Burger, A Carbon Fee as Mitigation for Fossil Fuel Extraction on Federal Lands, 42 COLUM. J. ENVTL. L. 295 (2017) (describing Interior’s authority to require mitigation of greenhouse gas impacts “beyond question” and explaining that “this approach would achieve the public benefit, economic efficiency, and environmental equity that come with internalizing the external costs of [fossil fuel] extraction.”).
32 See Jamie Gibbs Pleune, John C. Ruple & Nada Wolff Culver, The BLM’s Duty to Incorporate Climate Science into Permitting Practices and a Proposal for Implementing a Net Zero Requirement into Oil and Gas Permitting, 32 COLO. NAT. RES., ENERGY & ENVTL. L. REV. ___ (2021), at 81–88 (arguing that an offset requirement could be imposed after leasing, at the application for permit to drill stage).
34 Id. § 1344(a)(4) (“Leasing activities shall be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government.”).
The royalty rate may be the most important term to adjust, as royalty payments make up roughly 90% of federal revenues from the leasing program. Despite broad authority to adjust royalty rates, Interior has rarely deviated from the statutory minimums, causing federal royalty rates to fall well below those imposed by other jurisdictions. This causes two problems. First, because royalties are set so low, they deprive federal and state governments of potentially substantial royalty revenue, even accounting for an expected production decline from a royalty rate increase. And second, since federal royalty rates are set well below the social costs of extraction, they impose an externality on the public and cause producers to take insufficient environmental precaution.

A significantly higher royalty rate set to internalize climate externalities by incorporating the social cost of greenhouse gases—sometimes called a “carbon adder”—would both reduce greenhouse gas emissions and increase royalty revenue. One recent analysis, for instance, found that an additional 44% royalty charge (on top of existing base royalty rates) would be appropriate to internalize the climate costs of oil and gas extraction assuming a social cost of carbon based on a 2 percent discount rate. That same analysis found that a 44% carbon adder would increase royalty revenue by $6.1 billion annually while decreasing aggregate carbon emissions.

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35 See Revenue, Natural Resources Revenue Data, https://revenuedata.doi.gov/?tab=tab-revenue.
36 Resource-management statutes set floors for royalty rates but give the agency wide latitude to set rates above those minimums. See 30 U.S.C. § 226(b)(1)(A) (setting minimum royalty rate of 12.5 percent of onshore oil and gas revenues); 43 U.S.C. § 1337(a)(1) (setting minimum royalty rate of 12.5 percent of offshore oil and gas revenues).
38 See Prest & Stock, supra note 5, at 2 (finding that a royalty surcharge of 39% would maximize revenue and increase annual royalty receipts by $6.2 billion).
39 See id. at 15 (showing that a royalty surcharge based on the social cost of carbon would decrease emissions while increasing revenue).
40 Id.
41 Prest & Stock, supra note 5, at 4. The social cost of greenhouse gases was first used in federal policymaking starting in 2010 at the recommendation of an interagency working group composed of experts from twelve federal agencies and White House offices, including the Council on Environmental Quality (“Working Group”). The Working Group was disbanded by the Trump administration in 2017, and later reestablished by President Biden through Executive Order in January 2021. Exec. Order No. 13,990 § 5(b), 86 Fed. Reg. 7037 (Jan. 25, 2021). At the moment, the Working Group recommends a central discount rate of 3 percent, producing an estimate of $51 per ton of carbon dioxide released in 2020. Interagency Working Group on the Social 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). In February 2021, however, the Working Group acknowledged that this valuation “likely underestimate[s] societal damages from [greenhouse gas] emissions” due to the high discount rate, and that a discount rate of 2 percent or lower is likely more appropriate for intergeneration effects. Id. at 4, 16–22. The Working Group is currently reevaluating its estimates and expects to revise the social-cost valuations by January 2022. Id. at 1. For cross-agency consistency and to minimize legal risk, Interior should apply the central social cost valuations endorsed by the Working Group as part of any carbon adder.
dioxide emissions (after accounting for leakage) by 42 million metric tons per year.\textsuperscript{42} A carbon adder could alternatively be imposed as a set fee based on greenhouse gas emissions, as opposed to as a set percentage of revenues.\textsuperscript{43}

Interior should also revisit minimum bids and rental fees, both of which are set very low and, in many cases, have not been updated in decades. The minimum bid for onshore oil and gas leasing has been set at $2 per acre since 1987,\textsuperscript{44} while rental rates, also last updated in 1987, are only $1.50 per acre for each of the first five years of the lease term and just $2 per acre annually thereafter.\textsuperscript{45} At bare minimum, these fees should be adjusted for nearly 35 years of inflation (and subsequently be adjusted for inflation every year thereafter). Interior should also consider increasing these fees to account for option value. Option value is the informational value of delay,\textsuperscript{46} and by receiving the long-term option to drill—allowing them to assess drilling and economic conditions and delay extraction until the optimal time—fossil-fuel producers receive a substantial benefit from the government.\textsuperscript{47} As producers derive substantial value for the option to extract, Interior should place a premium on that option by raising minimum bids and rental fees. Additionally, Interior should reform the leasing process to reduce uncompetitive bidding by taking a hard look at lands nominated by developers before approving them for lease.\textsuperscript{48}

\textsuperscript{42} Prest & Stock, supra note 38, at 17 tbl.3.
\textsuperscript{41} A fee tied directly to carbon emissions would most optimally internalize climate damages, since it would not depend on the confounding factor of the resource price. Although royalties are traditionally calculated as a percentage of sale revenues, a carbon fee could also be legally justified as a form of compensatory mitigation.
\textsuperscript{44} 30 U.S.C. § 226(b)(1)(B).
\textsuperscript{45} 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).
\textsuperscript{46} Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 610 (D.C. Cir. 2015) (“[W]aiting [to extract] . . . has benefits, including what is referred to as informational value. More is learned with the passage of time: Technology improves. Drilling becomes cheaper, safer, and less environmentally damaging. Better tanker technology renders oil tanker spills less likely and less damaging. The true costs of tapping . . . energy resources are better understood as more becomes known about the damaging effects of fossil fuel pollutants.”).
\textsuperscript{47} As of the end of fiscal year 2020, nearly half of the over 26.6 million acres of federal land locked up in oil and gas leases—over 12.7 million acres—was lying idle without production. 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. 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 subservice 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.” 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-gainstockpiling-americas-federal-land/. Second, although there is frequently “little evidence that much oil or gas 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.” 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. In other words, buyers are considering option value—as rational economic actors do when assessing market value.
\textsuperscript{48} 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. Id.
Finally, Interior should increase bonding fees to provide adequate insurance against environmental contamination in the case of abandonment or bankruptcy. The Mineral Leasing Act provides that Interior shall require “an adequate bond … to ensure the complete and timely reclamation of the lease tract, and the restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations.”\(^{49}\) Yet current requirements—which also have not been adjusted in decades (despite inflation)—are far too low to ensure complete restoration. For instance, while the average BLM bond totaled $2,122 on a per-well basis in 2018, actual clean-up costs for abandoned onshore wells average between $20,000–$145,000.\(^{50}\) Without financial incentive to remediate, developers abandon hundreds of wells on federal land every year—saddling taxpayers with the cleanup cost while contributing substantially to greenhouse gas pollution.\(^{52}\) Thus, BLM should raise bondage requirements to reflect actual cleanup costs.

II. Interior Should Begin Developing the Analytical Toolkit to Support Comprehensive Programmatic Reforms

For any reforms that Interior pursues, it will be critical for the agency to support those reforms with strong analysis of the environmental and economic impacts. For instance, analyses conducted under the National Environmental Policy Act must “appropriately consider” environmental “effects and values alongside economic and technical analyses.”\(^{53}\) And for any rulemakings, analyses conducted under Executive Order 12,866 must “assess all costs and benefits of available regulatory alternatives,” including beneficial and adverse environmental and economic impacts.\(^{54}\)

Under the Trump administration, in particular, both regulatory and project-level Interior determinations were judicially vacated for failing to carefully assess the environmental harms from energy extraction—with the agency’s failure to reasonably assess climate impacts drawing particularly intense scrutiny.\(^{55}\) Likewise, “NEPA requires agencies to balance a project’s

\(^{49}\) 30 U.S.C. § 226(g).

\(^{50}\) Gov’t Accountability Office, Bureau of Land Management Should Address Risks from Insufficient Bonds to Reclaim Wells 6, 11 (2019).


\(^{53}\) 40 C.F.R. § 1501.2(b)(2); see also id. § 1508.1 (defining “effects” under NEPA regulations to include “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic (such as the effects on employment), social, or health effects”).


\(^{55}\) See, e.g., Ctr. for Biological Diversity v. Bernhardt, 982 F.3d 723, 736–40 (9th Cir. 2020) (vacating BOEM leasing plan for failing to reasonably assess greenhouse gas substitution effects under NEPA); California v. Bernhardt, 472 F. Supp. 3d 573 (N.D. Cal. 2020) (vacating BLM methane rollback for improper and unsupported valuation of methane pollution in regulatory cost-benefit analysis); Citizens for a Healthy Cmty. v. BLM, 377 F.
economic benefits against its adverse environmental effects” and the failure to make reasonable assumptions about economic impacts disturbs this “balancing process.” Accordingly, Interior must assess and fairly balance the environmental and economic impacts of any reforms.

Strong analysis also supports the long-term durability of any policy. For one, strong analysis that rationally assesses both the beneficial and adverse impacts of any reforms will make it more difficult for a future administration to revise that analysis and reverse course. Additionally, a well-considered analysis of policy impacts can help dispel many of the exaggerated and one-sided claims of economic harm that opponents of reform are already advancing, and firmly establish that reforms to the leasing program are justified and greatly benefit society at large.

To support Interior’s decisions and ensure better analysis, we recommend that the agency revise its model of the energy market to reflect reasonable assumptions about long-term trends of fossil-fuel and renewable energy generation. Interior can then use that model to estimate the climate benefits of reduced fossil-fuel extraction, which it can calculate using the social cost of greenhouse gases valuations developed by the Interagency Working Group on the Social Cost of Greenhouse Gases ("Working Group"). Interior may also wish to consider option value—the informational value of delay—as a benefit of any decision to curtail leasing, particularly in environmentally sensitive regions. And while Interior must assess the economic costs of any reform, it should do so consistently with its treatment of greenhouse gas impacts by looking system-wide, including leakage and substitution effects.

**A. Interior Should Look to Develop an Energy Substitution Model that Corrects for the Limitations of MarketSim, and Apply that Model to Assess Both the Benefits and Costs of Chosen Reforms**

Any substantial policy reform is bound to affect energy extraction either directly (such as by curtailing leasing) or indirectly (such as by raising royalty rates, which raises the producer’s

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56 Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 446 (4th Cir. 1996).

57 See, e.g., Watt I, 668 F.2d at 1317–18 (quoting Interior as recognizing that offshore leasing should occur only when “the anticipated benefits outweigh the anticipated costs for an area,” with “costs” defined as encompassing the “economic[,] social and environmental costs of oil and gas activity”); 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”); Bus. Roundtable v. SCC, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (vacating regulation after agency “inconsistently and opportunistically framed the costs and benefits of the rule”); Center for Biological Diversity v. National Highway Traffic Safety Administration, 538 F.3d 1172, 1203 (9th Cir. 2008) (stating that agency’s “decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious” when agency monetized economic costs).

58 See FCC v. Fox Television Stations, Inc., 556 U.S. 502, 515–16 (2009) (“[A] reasoned explanation is needed for disregarding facts and circumstances that underlay or were engendered by the prior policy.”); id. at 537 (Kennedy, J., concurring) (“An agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate.”).

59 See, e.g., Matthew Brown & Matthew Daly, Explainer: Why Is Biden Halting Federal Oil and Gas Sales?, Associated Press (Mar. 23, 2021) (highlighting an industry-supported studying showing job losses roughly five times higher than projected by an independent expert).
Yet in recent years, Interior has failed to adequately capture these market and substitution effects. While both BLM and BOEM have relied on a model developed by BOEM known as MarketSim, that tool suffers from several fatal flaws that cause it to grossly underestimate net greenhouse gas emissions. For one, MarketSim “fail[s] to include emissions estimates resulting from foreign oil consumption” and thereby irrationally “assumes that foreign oil consumption will remain static” despite increases in domestic production. But this assumption violates basic supply-and-demand principles and the global nature of the energy market. For that reason, the U.S. Court of Appeals for the Ninth Circuit recently concluded that the MarketSim model is fundamentally flawed and vacated an offshore extraction project in which BOEM relied on MarketSim to analyze greenhouse gas impacts.

Another limitation with MarketSim is that it assumes a trajectory of domestic emissions over decades by which oil and gas remain the dominant energy source and renewables grow at a slow pace—assumptions that are incompatible with reasonable attempts to meet international targets to curb the pace of climate change. For this reason, analyses applying MarketSim have found nearly 100% leakage and very limited greenhouse gas impacts from the federal leasing program. For instance, the BOEM analysis that was vacated by the Ninth Circuit counterintuitively concluded that a major extraction project would produce a net decline in downstream greenhouse gas emissions.

Especially given the recent Ninth Circuit decision, any future determinations relying on MarketSim in its current form are legally precarious, and the agency should instead revise the

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60 See Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, 41 HARV. ENVT'L. L. REV. 109, 179–81 (2017) (“Inventories of upstream and downstream greenhouse gas emissions can be supplemented by a ‘net emissions’ analysis. This entails examining how the project will affect the supply and consumption of other energy sources in order to determine the incremental emissions impact of the project as compared with a no action alternative.”)

61 *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 736–37 (9th Cir. 2020).

62 *Id.*


64 See, e.g., Willow Master Development Plan Final Environmental Impact Statement App’x E-2 tbl.2 (2020) (finding nearly 97% leakage from project’s emissions, with renewable energy making up for less than 0.4% of substituted demand); Coastal Plain Oil and Gas Leasing Program Final Environmental Impact Statement App’x R (2019) (finding roughly 96% leakage and virtually no displacement from renewable energy).

65 Liberty Development and Production Plan Final Environmental Impact Statement 4-52 (2018) (“Here, lifecycle GHG emissions associated with the No Action Alternative are estimated to be higher than those associated with the Proposed Action, despite the model’s assumption that a slightly lower amount of energy would be consumed domestically overall. This is because the lifecycle GHG emissions associated with the mix of replacement fuels estimated to be consumed under the No Action Alternative are, on average, greater than the lifecycle GHG emissions associated with oil produced from the Liberty prospect[.]”)
model to correct its flaws. Consistent with the Ninth Circuit’s opinion, any model should analyze impacts on foreign emissions as well as domestic emissions. In doing so, the model can incorporate evidence suggesting that curtailing domestic offshore oil production will reduce total foreign consumption by approximately 50% of the curtailed amount.\footnote{See, e.g., Peter Erickson, Final Obama Administration Analysis Shows Expanding Oil Supply Increases CO2, Stockholm Environment Institute (Jan. 30, 2017) & Peter Erickson, U.S. Again Overlooks Top CO2 Impact of Expanding Oil Supply . . . But That Might Change, Stockholm Environment Institute (Apr. 30, 2016) (calculating that forgoing 8.3 billion barrels of U.S. offshore production will decrease global consumption by 4 billion barrels and decrease global emissions by 1.7 billion metric tons of carbon dioxide); Gilbert E. Metcalf, The Impact of Removing Tax Preferences for U.S. Oil and Gas Production, Council on Foreign Relations (2016) (finding a global response of about 0.5 decrease per 1 unit of forgone U.S. production when matching the assumptions used in MarketSim, while also noting that hidden assumptions in MarketSim may lead global production to fall by even more than that, especially depending on the assumption of how OPEC will respond).}

A revised model should also account for the likelihood that domestic fossil-fuel demand will decline over the long term from efforts to reduce greenhouse gas emissions,\footnote{See, e.g., Brad Plummer, Blue States Roll Out Aggressive Climate Strategies. Red States Keep to the Sidelines, NEW YORK TIMES (June 21, 2019) (“Over the past year. . . California, Colorado, Maine, Nevada, New Mexico, New York and Washington have all passed bills aimed at getting 100 percent of their state’s electricity from carbon-free sources like wind, solar or nuclear power by midcentury.”).} and should not assume an admittedly “worst case scenario outcome” whereby fossil-fuel demand grows for decades and produces an unsustainable amount of warming.\footnote{BLM, Coastal Plain Oil and Gas Leasing Program, Final Environmental Impact Statement S-40 (2019); accord U.S. Department of the Interior, Bureau of Land Management, Draft Eastern Colorado Resource Management Plan & Environmental Impact Statement B-65 (2019) (explaining that it is “unlikely” that “emission trajectories follow a historical growth curve . . . over the course of the remainder of the century”).} While exact long-term estimates of demand for fossil fuels and renewables are admittedly difficult to project, Interior could elicit estimates from a range of experts,\footnote{For example, EPA surveyed twelve experts in an expert elicitation on the mortality impacts of a decrease in PM2.5 in the United States. It utilized its responses to specify a concentration-response function, and explore uncertainty. Henry A. Roman, Katherine D. Walker, Tyra L. Walsh, Lisa Conner, Harvey M. Richmond, Bryan J. Hubbell & Patrick L. Kinney, Expert Judgment Assessment of the Mortality Impact of Changes in Ambient Fine Particulate Matter in the US, 42 ENV’T SCI & TECH 2268 (2008).} or generate long-term forecasts of the energy mix from international targets and commitments. Evidence based simply on demand elasticities also suggests that leakage is below the estimates that MarketSim has generated.\footnote{See Brian Prest, Supply-Side Reforms to Oil and Gas Production on Federal Lands, Resources for the Future (2020) (using elasticities to estimate total leakage of 53–74%).} The model should then incorporate a short-run to long-run transition of energy demand.

As Interior revises its model, it should also review other technical limitations and perform holistic updates. For instance, some of MarketSim’s elasticities are questionable or outdated, so a revision to the model should incorporate the latest elasticity estimates.\footnote{See BOEM, Consumer Surplus and Energy Substitutes for OCS Oil and Gas Production: The 2017 Revised Market Simulation Model (MarketSim) 20 (assuming equality between onshore and offshore supply elasticities for the lower 48 states, and using two-decade-old supply elasticities for the lower 48 states).} A revised model could also incorporate smaller regions and/or improve within-region substitution, which MarketSim currently does not model.\footnote{See id. at 11.} Ideally, moreover, more work should be done to test the accuracy of...
any model that Interior develops. In particular, each model should be run against theoretical and known scenarios (including back-casting of power sector models) to test their relative strengths. Performing this testing at the outset will enable Interior to avoid MarketSim’s problem of generating counterintuitive and indefensible results.

It is also critical that Interior apply substitution equally to costs and benefits. In other words, however Interior generates its model, it must apply that model to analyze both climate and economic impacts. In the past, the agency has used substitution analysis as a one-way ratchet: offsetting the environmental costs of fossil-fuel extraction but not the economic benefits. In reality, however, the ratchet works both ways. Strong analysis of substitution impacts on both sides would allow the agency to dispel exaggerated claims from reform opponents about economic harm, and facilitate a fair comparison of the costs and benefits of programmatic reform.

B. Interior Can Support the Climate Impacts of Any Reforms by Monetizing Climate Benefits Using the Social Cost of Greenhouse Gases

Once Interior has estimated the net greenhouse gas impacts of any reform, it should then apply the social cost of greenhouse gases to assess the scale and magnitude of those benefits. This will help Interior convey the enormous public benefits of restricting fossil-fuel pollution from resource extraction.

Without context, it is challenging for decisionmakers and the public to assess the magnitude of a particular amount of carbon dioxide emissions. All too often, decisionmakers (including Interior agencies in previous analyses) mistakenly disregard massive climate impacts as insignificant by trivializing them as a small percentage of global greenhouse gas emissions. Monetization, by contrast, allows agencies to weigh costs and benefits of an action—and to compare alternatives—using the common metric of money. Monetizing climate costs, therefore, better informs the public and helps “bring[] those effects to bear on [the agency’s] decisions.”

And several courts have held that analyses under NEPA that fail to apply the social cost of greenhouse gases are insufficient, particularly when the agency quantified and monetized many of the economic benefits and distributional effects of resource management decisions such as expected resource yields, revenue, or job gains.
Interior analyses sometimes applied the social cost of greenhouse gases until 2017, but since then the agency has taken the position that Executive Order 13,783—which disbanded the Working Group and rescinded its technical support documents—precludes the use of the social cost metrics in NEPA analysis. In January 2021, however, President Biden withdrew Executive Order 13,783 and reconvened the Working Group, concluding that “[i]t is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible,” and that doing so “facilitates sound decision-making.” Subsequently, in February 2021, the Working Group restored its prior social-cost valuations on an interim basis (adjusted for inflation), while acknowledging that these values “likely underestimate societal damages from [greenhouse gas] emissions” and beginning a process to holistically update these values consistent with the latest science and economics. Accordingly, Interior should apply the social cost valuations in all assessments, and should update those valuations pursuant to future updates from the Working Group, which are currently expected by January 2022.

C. Interior Can Highlight Option Value as a Benefit of Any Leasing Curtailment

Option value is the informational value of delaying a decision. The value associated with the option to delay can be large in light of the uncertainty and near-irreversibility associated with leases for mineral development, especially when there is a high degree of uncertainty about price, extraction costs, and the social and environmental costs imposed by drilling. And courts have held that Interior must assess option value when considering mineral leasing. Yet while

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81 Exec. Order No. 13,990 § 5(a), 86 Fed. Reg. 7037 (Jan. 25, 2021). This Executive Order calls on the Working Group to provide additional guidance by September 2021 on how the executive branch can make the best use of the social cost estimates including in “decision-making, budgeting, and procurement.” Id. § 5(b)(ii)(C).


83 In February 2021, the Working Group restored its prior social cost valuations and adjusted them for inflation. See id. The Working Group acknowledged that these valuations “likely underestimate societal damages from [greenhouse gas] emissions” and is currently in the process of updating those valuations to reflect the most recent science and economics. It expects to complete this review and update its valuations by January 2022. Id. at 3–4.


85 Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 610 (D.C. Cir. 2015) (recognizing that 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,” and explaining that 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).
BOEM assessed option value in its most recent five-year plan, BLM does not account for option value at any stage (either regional planning or leasing).

More consistent and rigorous consideration of option value would help both BLM and BOEM to support any curtailment on leasing, along with policies such as raising rental fees that deter speculation. Both BLM and BOEM should build upon the analysis that BOEM has conducted in the past. For instance, while BOEM did consider option value with respect to environmental, social, and technological uncertainty in determining when to schedule certain lease sales during the five-year assessment period, it did not appear to include those option values as part of its determination of whether to schedule those lease sales to begin with since they did not factor into the “hurdle price” analysis. To the extent feasible, Interior should quantify option value using available economic tools.

But even if a quantitative analysis is not feasible, a strong qualitative analysis of option value can strongly support curtailing fossil-fuel leasing. Option value is particularly high when the decision involves irreversibility or a high degree of uncertainty. For fossil-fuel leasing, irreversibility is high because resource extraction (and the consequences flowing from it) is very difficult to prevent once a leasing decision is made. Uncertainty is also quite high, with various dimensions of uncertainty including effects on the environment (including climate change) and the pace of technological development. Accordingly, option value provides strong support for curtailing fossil-fuel leasing until further information is available. This is particularly true in environmentally sensitive regions like the Arctic, where uncertainty surrounding effects on species or oil-spill risk can be particularly high.

D. Interior Should Quantify the Net Economic Impacts of Its Reforms Using Its Revised Energy Substitution Model, and Seek to Mitigate Any Adverse Impacts on Local Communities Through Beneficial Land Usage

In prior analyses, Interior has estimated the localized revenue, royalty, and jobs impacts of extraction projects, but avoided further economic analysis that considers how those impacts could be offset through substitution, leakage, and broader economic effects. As noted above, this has produced a lopsided analysis whereby Interior offsets the environmental costs of extraction

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87 Id. at 10-6 (“BOEM does not quantify the quasi-option value of each of these uncertainties given difficulties in quantifying the informational value of delay and lack of well-established methods to quantify such considerations.”).

88 For further discussion of well-established methodologies that Interior can use to fully capture option value, see Institute for Policy Integrity, Comments on the Draft Proposed 2017-2022 Outer Continental Shelf (OCS) Oil and Gas Leasing Program App’x C (Mar. 30, 2015).

89 Office of Mgmt. & Budget, Circular A-4 at 39 (2003) (“The costs of being wrong may outweigh the benefits of a faster decision. This is true especially for cases with irreversible … investments.”).

90 Livermore, supra note 83, at 593–94.

91 Id. at 605–14.
but assesses economic impacts without any consideration of substitution effects.\textsuperscript{92} Because the revenue impacts of fossil-fuel extraction are partially offset due to leakage and substitution effects, they do not represent economic “benefits” in the true sense.\textsuperscript{93}

With a robust energy substitution model, Interior could estimate the actual forgone economic benefits of reduced fossil-fuel extraction.\textsuperscript{94} Interior should estimate and report those forgone economic benefits, as doing so would facilitate an apples-to-apples comparison to climate benefits and other monetized benefit estimates from reduced extraction such as a reduction in oil-spill risk. A full analysis using an energy substitution model would also allow Interior to place the forgone economic benefits of reduced fossil-fuel extraction into the context of the economic benefits from increased renewable generation on federal lands and waters, and for the agency to assess the net economic impacts of all reforms. Additionally, a market-wide analysis would enable Interior to project broader economic impacts such as aggregate price increases or supply declines. Assessing and reporting all of these impacts would provide the public with detailed information about the economic impacts of programmatic reforms, and enable Interior to rationally justify its decisions to pursue any reforms through a transparent consideration of the costs and benefits.

While localized impacts on revenues, jobs, and royalties are not themselves economic costs of reduced fossil-fuel extraction due to offset effects, they nonetheless provide important context to help Interior gauge the impacts of programmatic reforms on communities that have historically relied on energy generation. To help mitigate any adverse effects on these communities, Interior should identify renewable resource generation potential in areas that are expected to experience a decline in fossil-fuel production and seek to site renewable projects in these areas.\textsuperscript{95} For instance, Interior should identify new opportunities to use abandoned or reclaimed coal-mine lands as renewable-energy production sites. Interior should seek to partner with agencies such as the Departments of Energy and Labor to identify locations for job training programs.

**Conclusion**

Interior’s programmatic review provides an enormous and overdue opportunity to implement needed reforms to the oil and gas leasing program. We are hopeful that Interior will

\textsuperscript{92} See supra notes 73–74 and accompanying text.

\textsuperscript{93} The revenue generated from the sale of fossil fuels represents society’s marginal willingness to pay for those resources, and thus represents the economic “benefit” in the true sense. Subsidiary economic impacts from revenues generated, such as increased wages, royalties, and taxes, are transfers rather than economic benefits because they are derivative of those revenues and “do not affect total resources available to society.” Office of Info. & Regulatory Affairs, Regulatory Impact Analysis: A Primer 8 (2011) (“Transfer payments are monetary payments from one group to another that do not affect total resources available to society,” such as “[c]hanges in sales tax revenue due to changes in sales”).

\textsuperscript{94} For actions that directly reduce fossil-fuel extraction like curtailing leasing, those costs are two-fold: the reduced economic revenue from any forgone production representing reduced demand (i.e. not offset by substitute production from another source), plus any additional production costs of substitute production compared to the production forgone.

\textsuperscript{95} See supra note 19 and accompanying text.
use this opportunity to mitigate climate and other environmental impacts from the program, and implement reforms that benefit the public rather than the fossil-fuel industry. The attached Policy Integrity report from September 2020, titled “A New Way Forward on Climate Change and Energy Development for Public Lands and Waters,” provides additional detail on the reforms that Interior should undertake. Policy Integrity looks forward to producing additional scholarship that we hope will inform Interior’s ongoing reform efforts.

Sincerely,

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Enclosure: Jayni Hein, Inst. for Pol’y Integrity, A New Way Forward on Climate Change and Energy Development for Public Lands and Waters (2020)
A New Way Forward on Climate Change and Energy Development for Public Lands and Waters

Institute for Policy Integrity
NEW YORK UNIVERSITY SCHOOL OF LAW

September 2020
Jayni Foley Hein
Executive Summary

Comprising more than one-fifth of the country’s landmass and 1.7 billion offshore acres, U.S. federal lands and waters are the source for almost 30 percent of annual domestic energy production—primarily from fossil fuels. However, the Department of the Interior (Interior) has yet to develop a comprehensive plan to accurately account for, manage, and mitigate the greenhouse gas (GHG) emissions that result from the extraction and combustion of fossil fuels from public lands and waters. The next administration has a key opportunity to modernize federal land use planning and align natural resources management with climate change and conservation goals. This document describes immediate and longer-term actions that Interior’s Bureau of Land Management (BLM) and Bureau of Ocean Energy Management (BOEM) should take to reform public lands management consistent with climate change, conservation, and fiscal reform priorities.

In the first 100 days of the next administration:

1. The President should issue a new Climate Action Plan that specifies a declining cap on GHG emissions from public lands and a zero-emissions target date (such as 2030), for both onshore and offshore land management;

2. Interior should commit to an annual GHG inventory for public lands;

3. Interior should issue a pause on all new coal, oil, and natural gas leasing on federal lands and launch programmatic environmental reviews of these programs as an expeditious way to halt all new leasing while complying with the National Environmental Policy Act (NEPA);

4. Interior should revoke all Trump administration secretarial orders and replace them with orders that require accounting for climate change effects, making decisions guided by the best available science, and managing public lands to account for environmental, recreational, and scenic values—not merely energy production; and

5. Interior should enforce the BLM’s Waste Prevention Rule and the Office of Natural Resources Revenue’s Valuation Rule, both of which were reinstated following successful legal challenges to repeals, and launch new rulemakings to reinstate and strengthen BLM’s Hydraulic Fracturing Rule and the offshore Well Control Rule, each of which was weakened during the Trump administration.

In the first year, Interior should:

1. Revive landscape-level planning for Interior agencies, with particular attention to selecting priority areas for conservation, restoration, and renewable energy development, and consider a new landscape-level planning rule following the demise of BLM’s “Planning 2.0 Rule” pursuant to the Congressional Review Act;

2. For onshore public lands, amend resource management plans (RMPs) in accordance with a zero GHG emissions by 2030 strategy, consider an immediate net-zero emissions strategy for RMPs that uses offsets in the form of greater carbon sequestration, renewable energy production, or other strategies, and revive Master Leasing Plans if any leasing continues;
(3) If any new fossil fuel leasing occurs, adjust the fiscal terms of new and modified leases—royalty rates, minimum bids, and rental rates—in order to account for climate change costs and earn a fair return to taxpayers, such as through implementing a carbon adder;

(4) For offshore lands and waters, embark upon a new five-year planning process that seeks to achieve zero GHG emissions by 2030, or alternatively, net-zero emissions;

(5) For offshore public lands and waters, consider withdrawing areas of the Outer Continental Shelf from oil and gas leasing using Presidential authority;

(6) Remove inefficient barriers to renewable energy production on federal lands, both onshore and offshore, such as by using RMPs and Designated Leasing Areas to identify more areas with strong renewable energy potential and low environmental conflict, improving timely permitting, retraining displaced fossil fuel workers to work in renewable energy, identifying more offshore Wind Energy Areas, and establishing a taskforce to streamline offshore wind permitting; and

(7) Develop a policy for the appropriate treatment of GHG emissions and the use of the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane in environmental impact statements, consistent with legal precedent and best practices for agency decisionmaking.

These recommendations are designed to lead to a more rational federal natural resources program that better serves current and future generations. The next administration should modernize federal natural resources policy by taking steps to align public lands management with national climate change goals and commitments.
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II. Policy Recommendations for the First Year  

A. Revive landscape-level planning for Interior agencies, with particular attention to selecting priority areas for conservation, restoration, and renewable energy development, and consider a new landscape-level planning rule following the demise of BLM’s “Planning 2.0 Rule” pursuant to the Congressional Review Act.  

B. For onshore public lands, amend resource management plans (RMPs) in accordance with a zero GHG emissions by 2030 strategy, consider the alternative of an immediate net-zero emissions strategy for RMPs, and revive Master Leasing Plans if any leasing continues.  

C. If any new fossil fuel leasing occurs, adjust the fiscal terms of new and modified leases—royalty rates, minimum bids, and rental rates—in order to account for climate change costs and earn a fair return to taxpayers.  

D. For offshore lands and waters, embark upon a new five-year planning process that seeks to achieve zero GHG emissions, or alternatively net-zero emissions, by 2030.  

E. For offshore public lands and waters, consider withdrawing areas of the Outer Continental Shelf from oil and gas leasing using Presidential authority.  

F. Remove inefficient barriers to renewable energy production on federal lands, both onshore and offshore.  

G. Develop a strategy for the appropriate treatment of GHG emissions and the use of the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane in environmental impact statements, consistent with legal precedent and best practices for agency decisionmaking.  

Conclusion
I. Recommendations for the First 100 Days

In the first 100 days of the next administration, Interior and the White House should prioritize actions that will lay important groundwork for climate change and other reforms with respect to natural resources management.

A. The President should issue a new Climate Action Plan that specifies a declining cap on GHG emissions from public lands and a zero-emissions target date (such as 2030), for both onshore and offshore federal lands.

President Obama’s Climate Action Plan and subsequent pronouncements committed to the goal of reducing greenhouse gas emissions 17 percent by 2020, and 26 to 28 percent by 2025, with “best efforts” to reduce emissions by 28 percent by 2025. However, the United States has lost valuable time during the Trump administration to reduce emissions, and is currently far short of these Obama administration goals. Working closely with Interior and other key departments, the next administration should release a new Climate Action Plan that sets forth an ambitious yet achievable goal for reducing GHG emissions from activities on federal lands and waters.

In the absence of an economy-wide carbon tax or cap on GHG emissions, the President’s new Climate Action Plan should set forth a declining cap or “carbon budget” for emissions from fossil fuels extracted from federal lands and waters. This carbon budget could then be allocated by Interior among existing onshore oil, gas, and coal, and offshore oil and gas leases. In addition, the Climate Action Plan should set a zero-emissions target date (such as 2030), for both onshore and offshore federal lands, which includes existing leases.

The Climate Action Plan is an ideal vehicle in which to announce this cap and zero-emissions target date, as the administration can set and allocate target emission reductions to other sectors beyond Interior’s jurisdiction—such as transportation, the power sector, and building energy efficiency—and arrive at total reductions that would best meet national goals and international commitments (such as those made in the process of rejoining the Paris agreement). Baseline values for a federal lands carbon budget could be derived from the results of an GHG inventory, as described below. Target GHG emission reductions should be set at a level to achieve or exceed the prior U.S. goal of reducing emissions by 26 to 28 percent by 2025, and include longer-term reduction targets, such as 2030 and 2040.

B. Interior should direct the U.S. Geological Survey (USGS) to finalize an annual GHG inventory for public lands.

Interior announced during the Obama Administration that it would establish a database of carbon emissions and carbon sinks on federal lands in 2018. However, under the Trump administration, no such database was ever established. In fact, USGS—Interior’s sole scientific agency—has stopped updating its website tools on GHG emissions. The last report that USGS published on GHG emissions was released in 2018 and covers emissions from 2005 to 2014.

In the first 100 days, Interior should direct USGS to update its reports and website tools on GHG emissions and carbon sinks. It should also direct USGS to prepare an inventory of all direct and indirect GHG emissions from
existing federal fossil fuel production, including downstream emissions from the transportation, processing and end-use of federal coal, oil, and gas. Currently, there is no official measure or public database of the GHG emissions from coal, oil, or gas produced on public lands. Analysis from non-governmental organizations suggests that the emissions from these activities on public lands could amount to up to 28 percent of the nation’s annual total energy-related emissions. The USGS public database should detail the source of all GHG emissions by resource type, location, and production method. This database would help decisionmakers and the public better understand and manage emissions from public lands.

Interior should recommit to an ambitious yet achievable timeline for completing this public database (before December 2021, if possible), and to updating it annually. It should also ensure that the personnel and database architecture is in place to carry out this inventory.

C. Interior should issue a pause on all new coal, oil, and natural gas leasing on federal lands and launch programmatic environmental reviews of these programs as an expeditious way to halt all new leasing while complying with the National Environmental Policy Act (NEPA).

In the first 100 days, Interior should issue a pause on all new coal, oil, and natural gas leasing on federal lands while a programmatic environmental review of these programs is completed. The Biden campaign has announced the goal of “banning new oil and gas permitting on public lands and waters.” Issuing a pause and launching a programmatic environmental review would achieve this goal expeditiously, and complementary efforts to reform plans and processes like resource management plans (RMPs) could be pursued in parallel or in succession (See Part II.B). Prior administrations, including the Obama administration, issued pauses on the federal coal program and launched programmatic environmental reviews.

A key rationale for the pause and programmatic review is the need to account for the climate change and other environmental impacts of fossil fuel production from federal lands. Any pause of the federal leasing programs would require an environmental impact statement (EIS) in order to comply with NEPA. The Obama administration never completed its review of the federal coal program, and the federal oil and gas programs have never been reviewed programmatically. A programmatic environmental review would give Interior the opportunity to determine how to best account for the environmental and social costs associated with producing and burning fossil fuels, including climate change impacts, using modern economic tools like the Interagency Working Group’s (IWG) Social Cost of Carbon and Social Cost of Methane. The alternatives analysis that Interior would conduct as part of such a review would provide useful information on how different moratoria, mitigation measures, and fiscal terms (such as royalty rates) would affect GHG emissions, energy markets, revenue, and more.

In such a process, Interior should specifically consider the alternatives of a “no leasing” scenario, a zero GHG emissions by 2030 scenario, and a net-zero GHG emissions by 2030 scenario that could allow some ongoing production in regions where RMPs use offsets to achieve net-zero emissions in a planning area. While it conducts this review, Interior should maintain a moratorium on all new coal, oil, and natural gas leasing on public lands, as failure to do so could impair efforts to meet climate change goals, especially considering the 5 to 20-year duration of fossil fuel leases.
D. Interior should revoke all Trump administration secretarial orders and replace them with orders that require accounting for climate change effects, making decisions guided by the best available science, and managing public lands to account for environmental, recreational, and scenic values.

Interior should **revoke all Trump administration secretarial orders** and replace them with orders that require accounting for climate change effects, making decisions guided by the best available science, and managing public lands to account for scenic, environmental, and recreational values—not merely energy production.

For example, **Secretarial Order 3349**, issued March 29, 2017, implemented a directive from President Trump to “immediately review existing regulations that potentially burden the development or use of domestically produced energy resources. . .” 12 Secretarial Order 3349 called for reevaluating the mitigation and climate change policies and guidance that Interior issued during the Obama administration, as well as reviewing regulations related to oil and natural gas development.

**Secretarial Order 3360**, issued December 22, 2017, rescinded Interior’s climate and mitigation policies, including the Departmental Manual on Climate Change Policy, Departmental Manual on Landscape-Scale Mitigation Policy, the BLM Mitigation Manual, and the BLM Mitigation Handbook. 13 The Secretarial Order also directed BLM to reconsider the Draft Regional Mitigation Strategy for the National Petroleum Reserve-Alaska and to begin revisions to ensure its compliance with the Trump administration’s energy goals.

As these examples illustrate, Interior’s secretarial orders issued during the Trump administration should be revoked and new secretarial orders should be issued in line with a science-based approach that accounts for all multiple uses on public lands, not just mineral production, and addresses the critical need to reduce and mitigate GHG emissions.

E. Interior should enforce BLM’s Waste Prevention Rule and the Office of Natural Resources Revenue’s Valuation Rule, and launch new rulemakings to strengthen BLM’s Hydraulic Fracturing Rule and BOEM’s offshore Well Control Rule, both of which were weakened during the Trump administration.

Interior should **enforce the BLM’s Waste Prevention Rule**, which imposed new regulations on natural gas producers to reduce waste, primarily in the form of methane emissions, on public lands from venting, flaring, and leaks. 14 Although the Trump administration repealed the Waste Prevention Rule in 2018, 15 this rule was reinstated when a federal district court granted summary judgment to plaintiffs contesting the repeal on the grounds that it violated the Administrative and Procedure Act (APA). 16

Interior should also **enforce the Office of Natural Resource Revenue’s (ONRR) Valuation Rule**, which updated regulations dealing with royalty valuation and reporting practices for oil, natural gas, and coal production from Federal
and Indian leases. The Trump administration repealed the Valuation Rule in 2017. Following this repeal, however, the Valuation Rule was reinstated on March 29, 2019, when a court granted summary judgment to plaintiffs who argued that the repeal violated APA requirements. Shortly thereafter, ONRR issued guidance to lessees giving them until January 1, 2020 to comply with the reinstated rule. ONRR issued two more guidance documents pushing back this compliance deadline, first to July 1, 2020 and then to October 1, 2020. A motion to enforce the rule by the original deadline of January 1, 2020 was denied. In August 2020, ONRR proposed a new Valuation Rule, but it is unclear whether a new rule will be finalized before a change in the administration. Accordingly, Interior should ensure that lessees begin complying with the existing (Obama-era) Valuation Rule as soon as possible.

Interior should also initiate a rulemaking to reinstate BLM’s Hydraulic Fracturing Rule, which the Trump administration repealed in 2017. BLM finalized the Hydraulic Fracturing Rule in 2015 to ensure that companies using new hydraulic fracturing methods to extract natural gas on Federal and Indian lands were doing so in an environmentally responsible way that did not contaminate groundwater sources. California and citizen groups challenged the Rule’s 2017 repeal on the grounds that it violated the APA, the Federal Land Policy and Management Act (FLPMA), the Mineral Leasing Act (MLA), and NEPA, among other claims. The court granted summary judgment to defendants on all of these claims. California has appealed the case to the Ninth Circuit. Interior should initiate a new rulemaking to reinstate the Hydraulic Fracturing Rule and strengthen it, if necessary.

Lastly, Interior should initiate a rulemaking to reinstate the Bureau of Safety and Environmental Enforcement’s Well Control Rule, which the Trump administration weakened when it amended the rule in 2019. The Well Control Rule was finalized in 2016 to improve the safety of offshore oil and gas drilling following the Deepwater Horizon incident in 2010. The 2019 revisions weakened requirements related to well design, well control, casing, cementing, real-time monitoring, and subsea containment. Ten environmental groups challenged the revised Well Control Rule in the Northern District of California on the grounds that these rollbacks violated the APA and NEPA. The case was transferred to Eastern District of Louisiana, and litigation is ongoing as of August 2020. Interior should initiate a new rulemaking to reinstate—or even strengthen—the regulations promulgated under the 2016 Well Control Rule that were relaxed by the 2019 revisions.

With respect to new rulemakings to reinstate and strengthen the Hydraulic Fracturing Rule and Well Control Rule, any new rules should be promulgated as quickly as possible, within reason, in order to avoid time-sensitive rollback tools. This ideally involves promulgating new rules within the first 2.5 years of a presidential term so that any litigation concerning the rules can be completed before the end of the concurrent presidential term (to avoid delays in court by a subsequent administration), setting compliance dates that become effective prior to the end of the concurrent presidential term (to avoid suspensions and delay rules under a subsequent administration), and—at the very least—promulgating the rule prior to the final eight months of the presidential term, to avoid elimination by way of the Congressional Review Act.

In reinstating and strengthening the Hydraulic Fracturing Rule and Well Control Rule, the next administration could rely on the evidentiary record and justifications developed by the Obama administration when promulgating the original rules. To the extent that the Obama-era analysis is still up-to-date, the next administration should take advantage of that work, including prior economic analyses, to hasten the promulgation of stronger rules. Interior could also save time and strengthen its reasoned explanations by expressly casting changes to the two rules as “follow-on” rulemakings to the Obama-era rules, and incorporating the factual findings of the original rules.
II. Policy Recommendations for the First Year

The next administration has a key opportunity to modernize how federal natural resources are managed in order to benefit current and future generations, as called for in the Federal Land Policy and Management Act (FLPMA). Interior must shift to a more rational land management process that contributes to climate change goals by minimizing GHG emissions and increasing renewable energy production on public lands, and that safeguards important land use values like recreation, wildlife protection, and carbon sequestration.

A. Revive landscape-level planning for Interior agencies, with particular attention to selecting priority areas for conservation, restoration, and renewable energy development, and consider a new landscape-level planning rule following the demise of BLM’s “Planning 2.0 Rule” pursuant to the Congressional Review Act.

Interior should revive landscape-level planning, paying particular attention to selecting priority areas for conservation, restoration, and renewable energy development. Such an approach would help facilitate climate change and public land conservation goals, such as one stated goal to “leverage natural climate solutions by conserving 30% of America’s lands and waters by 2030.” Landscape-level planning aims to encourage adoption of conservation priorities across jurisdictions and across many resources in an effort to create a single, collaborative conservation effort that also meets stakeholder needs.

By taking a landscape approach to public land management, Interior can better account for and respond to climate change considerations, from the need to rapidly reduce GHG emissions resulting from existing mineral development to land use planning that prioritizes climate adaptation and carbon sequestration. Interior could pursue this strategy in stages, first conducting a landscape-scale analysis of planning areas, and then selecting priority areas for conservation and restoration. Interior should also assess and account for climate change adaptation, and evaluate the proper distribution of resources across the landscape, consistent with the multiple use and sustained yield mandates of FLPMA. These uses include, but are not limited to, conservation, restoration, habitat protection, recreation, renewable energy development, grazing, and mineral development or mineral reserves.

Planning at a landscape scale should encourage agencies to plan across jurisdictions where appropriate to address cross-jurisdictional concerns. For example, planning decisions across jurisdictions may help facilitate the connectivity of wildlife habitat, as migration often occurs beyond political boundaries. Landscape-scale planning could also include planning for energy development opportunities while simultaneously mitigating or offsetting the impacts of that use by increasing conservation or carbon sequestration management in the area.

The Desert Renewable Energy Conservation Plan (DRECP) in California provides one example of BLM first identifying suitable areas in the Mojave Desert for biological, cultural and wilderness conservation, as well as recreation management areas, before siting renewable energy development. The DRECP designates California Desert National Conservation Lands, lands managed to protect wilderness characteristics, areas of critical environmental concern, wildlife management
areas, and recreation management areas. The DRECP also designates Development Focus Areas, where renewable energy development is most appropriate, as well as variance process lands, where the agency can evaluate potential renewable energy development.

**Interior should also consider whether to initiate a new landscape planning rulemaking, following the demise of BLM’s “Planning 2.0 Rule” pursuant to the Congressional Review Act.** In December 2016, BLM finalized new regulations regarding land use planning, referred to generally as “Planning 2.0.” The prior planning rule had not been substantially updated since 1983. The new planning rule called for BLM to adopt planning at a landscape scale and to provide more opportunities for public participation during the land use planning process. The final rule did not prescribe any specific planning area boundary, but provided flexibility for agencies to determine the appropriate planning area boundary based on relevant landscapes and management concerns.

Planning 2.0 was short-lived, however, as Congress passed a joint resolution in March 2017, which President Trump signed, disapproving the rule under the Congressional Review Act (CRA). The CRA revocation prohibits the agency from promulgating any rule that is “substantially the same” in the future without congressional approval. However, there is no case precedent regarding what constitutes a rule that is “substantially the same” under the statute. It is likely that the incoming administration could prove that a future regulatory rule that adds new protections is not “substantially the same” as a prior rule. Moreover, some courts may be unwilling to hear challenges to agencies promulgating similar rules, in the same way that some district courts have found that agency compliance with other CRA procedures is unreviewable. If that is the case, then the CRA’s ban on similar regulations may be unenforceable in court.

Therefore, Interior should consider whether to initiate a new landscape planning rulemaking, or whether to instruct agencies to adopt a similar approach through less formal means, like instructional memoranda or guidance.

**B. For onshore public lands, amend resource management plans (RMPs) in accordance with a zero GHG emissions by 2030 strategy, consider the alternative of an immediate net-zero emissions strategy for RMPs, and revive Master Leasing Plans if any leasing continues.**

Given its capacious statutory mandates, Interior has the authority to manage federal lands to help meet national GHG emission goals and commitments. Among other requirements, Interior has the duty to “take[] into account the long-term needs of future generations for renewable and nonrenewable resources,” and to manage federal lands “without permanent impairment of the productivity of the land and the quality of the environment.”

Given the pivotal role of RMPs in setting public land priorities and protections, **BLM should amend RMPs and consider three climate-sensitive alternatives as part of that revision process: (1) no new leasing; (2) meeting a zero emissions by 2030 target; and (3) meeting an immediate net-zero emissions goal.** These three options are not mutually exclusive, and could be pursued in combination. In addition, if any new leasing does occur, BLM should revive the use of Master Leasing Plans (MLPs), in order to increase public participation and transparency and reduce conflicts with other important land values.
In May 2010, former Interior Secretary Ken Salazar issued BLM Instruction Memorandum 2010-117, which had several components related to land use planning. First, it required BLM field offices to conduct a land use plan review that considered whether their existing RMPs “adequately protect[] important resource values in light of changing circumstances, updated policies and new information.” Next, it established the concept of MLPs, which directed BLM, before any leasing, to “reconsider RMP decisions pertaining to leasing” by analyzing likely development scenarios and varying mitigation levels at a site-specific level in an MLP. The MLP process considered phased leasing, phased development, requirements to reduce or capture emissions, and additional mitigation for wildlife and other potential resource conflicts. In 2018, BLM withdrew Instruction Memorandum 2010-117 and eliminated the use of MLPs.

Interior should use its existing statutory and regulatory authority to revise RMPs in order to meet national climate change goals, such as a zero emissions by 2030 target, or an immediate net-zero emissions target. The RMP revision process requires preparation of corresponding environmental impact statements (EISs) that analyze the environmental consequences of proposed actions; therefore, Interior should use this review to weigh these alternatives. Revised RMPs should be consistent with any carbon budget or emissions goal set forth in a new Climate Action Plan, as well as with any final PEIS conducted for these federal programs as a whole, once such a process is completed. Note that Interior could choose to forgo the programmatic EIS for its programs (and corresponding national pause on new leasing) entirely, and just use the RMP process to revise land use plans. However, in order to halt new leasing, BLM would need to cancel or postpone scheduled quarterly lease sales within planning areas while individual RMPs are revised (a process expected to take well over a year for each RMP), and such cancellations or postponements could be subject to litigation. Still, it is worth considering this approach if Interior lacks the resources for a programmatic EIS for entire federal programs or prefers a more regional, tailored approach.

BLM should consider at least three climate-sensitive options—which are not mutually exclusive and could be pursued in concert—as part of the RMP revision process: (1) no new leasing and no lease renewals or extensions; (2) meeting a zero emissions by 2030 target; and (3) meeting an immediate net-zero emissions goal. The first alternative is consistent with calls to “ban new oil and gas permitting on public lands and waters.” The second alternative would sharply curtail all new leasing and phase-out emissions from all existing wells (which are typically subject to 5-10 year leases) by 2030.

For the third alternative, meeting a net-zero emissions goal, BLM could consider using offsets in the form of carbon sequestration, reforestation, greater renewable energy production, and other strategies to achieve immediate (or near-term) net-zero emissions within the planning area, even accounting for emissions from existing leases. In pursuing a net-zero emissions strategy, Interior should consider how to best define and apply the concept of “net-zero fossil fuel emissions” from public lands. In general, this would entail balancing the lifecycle GHG emissions stemming from fossil fuel development on U.S. federal lands (from production to burning by end users) with an equal amount of GHG emissions offset over a specified period of time through a combination of active management of land to protect and increase natural carbon storage (such as through reforestation), increased renewable energy development, and/or the purchase carbon credits from accredited sources. Interior could follow its traditional mitigation hierarchy to avoid, minimize, and compensate for GHG emissions, and evaluate and adopt best practices for carbon accounting. Moreover, each of the three RMP alternatives should identify areas best suited for the development of renewable energy and related transmission on federal lands.

While this document emphasizes climate-sensitive approaches to RMPs, consistent with scientific urgency to reduce GHG emissions, if any new leasing does occur, BLM should consider reinstating MLPs. The purpose of MLPs is to increase public participation and transparency and reduce conflicts with other important public land...
values, such as recreation, habitat protection, carbon sequestration, and more.\footnote{MLPs could even theoretically be used to achieve net-zero GHG emissions, through the use of offsets. The use of MLPs could be revived through issuance of an instructional memorandum.}

C. If any new fossil fuel leasing occurs, adjust the fiscal terms of new and modified leases—royalty rates, minimum bids, and rental rates—in order to account for climate change costs and earn a fair return to taxpayers.

FLPMA requires that Interior earn “fair market value” for the use of the public lands and their resources.\footnote{Moreover, the Mineral Leasing Act of 1920 and Federal Coal Leasing Amendments Act of 1976 require that federal fossil fuel leases be offered competitively.\footnote{But for decades, Interior has run a noncompetitive program that effectively cedes control to coal, oil, and gas companies over where and when to lease. In addition, Interior has never accounted for the pollution costs—including climate change costs—that leasing and developing fossil fuels imposes. While this document calls for a complete halt on all new fossil fuel leasing accompanied by programmatic NEPA review, if any new fossil fuel leasing does occur, Interior should adjust the fiscal terms of any new and modified leases—royalty rates, minimum bids, and rental rates—in order to account for climate change costs and earn a fair return to taxpayers.} if any new fossil fuel leasing does occur, Interior should adjust the fiscal terms of any new and modified leases—royalty rates, minimum bids, and rental rates—in order to account for climate change costs and earn a fair return to taxpayers.

Myriad studies have documented Interior’s failure to earn a fair return for leasing the public’s coal, oil, and natural gas resources to private developers, including its failure to account for climate change costs.\footnote{In 2013, the U.S. Government Accountability Office found that approximately 90 percent of all federal coal lease sales since 1990 attracted only one bidder.\footnote{About 40 percent of existing onshore oil and gas leases were issued noncompetitively.\footnote{The result is a noncompetitive program that does not adequately serve the public interest and fails to account for the mounting costs that climate change poses.}}

Interior should adjust the fiscal terms of any new or modified leases in order to account for climate change costs and earn a fair return to taxpayers. The Mineral Leasing Act and Outer Continental Shelf Lands Act direct Interior to collect three types of payment from leaseholders: an initial lease bid (or “bonus bid”) payment for the right to produce mineral resources on federal lands or waters; annual rental payments; and royalties paid on the value of the resource produced.\footnote{Interior has broad authority to set these payments. Federal leases must provide the American people with fair and adequate compensation for the rights surrendered and resources extracted.\footnote{Interior should consider applying a “carbon adder” to royalty rates, in order to recoup the social costs of fossil fuel extraction. Externalities from coal, oil, and gas production include: methane emissions; carbon dioxide emissions from production, transportation, and end-use combustion; other air pollution; water use; water pollution; habitat impacts; and more. Some of these externalities are not regulated at all, such as methane emissions from coal production; others are regulated at a less than socially optimal level because private actors do not pay for the full externality cost, shifting the burden to the public. For instance, BLM’s reinstated Waste Prevention Rule would fall into the latter category because the stringency of the regulation is not calibrated to the marginal cost of emissions.\footnote{Interior should model royalty rate scenarios as part of its programmatic EIS processes that account for the full social and environmental costs of fossil fuel production, such as applying a “carbon adder” that captures full lifecycle GHG emissions costs. Specifically, it should analyze the use of a methane and/or carbon adder, using the}}

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Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane.\textsuperscript{69} Raising royalty rates to recoup the social and environmental costs of production will have the effect of reducing GHG emissions from fossil fuel production and combustion, as some production will be expected to shift to less environmentally costly sources, including renewables.\textsuperscript{70} As such, increased rates would result in significant social benefits. However, ceasing to issue any new leases and declining to renew existing leases would achieve greater emissions reductions on a faster timeline.

In addition to royalty rates, \textit{interior’s minimum bids and rental rates should be adjusted upwards to keep pace with inflation and account for option value, or the informational value of delay}. The minimum bid for coal leasing has been set at $100 per acre since 1982,\textsuperscript{71} and at $2 per acre for onshore oil and gas since 1987. Accounting for inflation, alone, would raise the minimum bid to $267 per acre for coal, and to $4.50 per acre for onshore oil and gas. Rental rates, which are paid by companies that hold leases but are not currently producing, should also be increased to account for inflation.\textsuperscript{72} BLM’s onshore oil and gas rental rates were last updated in 1987, and are lower than the rental rates charged by other oil and gas-producing states, such as Texas.\textsuperscript{73}

\textit{Interior should also account for option value, or the informational value of delay, in setting minimum bids and rental rates, as well as deciding when and where to lease, if ever}. There is value in waiting to lease the public’s non-renewable resources while gathering more information on environmental and social costs (including GHG emissions, water use, and water pollution), as well as future technological changes that could make development more efficient or reduce pollution.\textsuperscript{74} In fact, companies themselves routinely account for option value with respect to resource pricing, which explains their longstanding practice of stockpiling leases, yet waiting years to begin production.\textsuperscript{75}

Interior’s failure to account for option value systematically undervalues public non-renewable resources, and may contribute to leasing too much coal, oil, and gas too early, and at too low of a price. As the D.C. Circuit indicated with respect to offshore leasing, there is “a tangible present economic benefit to delaying the decision to drill,” and failing to account for option value undervalues public resources.\textsuperscript{76} BOEM itself recently acknowledged that option value is a component of the fair market value of the right to develop public resources.\textsuperscript{77} However, BOEM does not yet \textit{quantitatively} assess environmental or social option value, and thus, option value is not yet fully incorporated into BOEM’s internal bid adequacy assessments or planning process.

Ideally, both BLM and BOEM should quantify economic, environmental, and social option value, and use this value when determining whether and when to offer leases, in developing internal fair market value assessments, and in setting minimum bid prices and rental rates. To the extent that any new leasing is contemplated, Interior should consider organizing a working group to evaluate methods to use and quantify option value for both offshore and onshore natural resources.

\textbf{D. For offshore lands and waters, embark upon a new five-year planning process that seeks to achieve zero GHG emissions, or alternatively net-zero emissions, by 2030.}

The Outer Continental Shelf Lands Act (OCSLA) Section 18(a) requires that the Secretary of the Interior “prepare . . . and maintain an oil and gas leasing program . . . ”\textsuperscript{78} The leasing program “shall consist of a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity which [the Secretary] determined will best meet national energy needs for the five-year period following its approval or reapproval.”\textsuperscript{79} Pursuant to OCSLA,
the next administration should embark upon a new five-year planning process to develop a 2022-2027 program that seeks to achieve zero GHG emissions by 2030, or alternatively, net zero emissions. The Trump administration began to develop a 2019-2024 leasing program, which the next administration should either abandon (the most likely scenario) or revise to meet its policy goals.

The Obama administration inherited both a 2007-2012 leasing program and a draft 2010-2015 leasing program that the Bush administration had begun. To implement its policy goals, the Obama administration first abandoned the draft 2010-2015 leasing program by delaying its completion. Second, it postponed and cancelled lease sales that had been scheduled under the 2007-2012 program. Third, it revised the 2007-2012 leasing program in December 2010, after the U.S. Court of Appeals for the D.C. Circuit found that the original 2007-2012 program had failed to balance the requisite factors under OCSLA Section 18(a). The revised program placed the entire Pacific Coast, the entire Atlantic Coast, the Eastern Gulf of Mexico, and much of Alaska off-limits to future energy production. Finally, Interior prepared a new 2012-2017 program, which better aligned with the administration’s policy goals.

When preparing a new leasing program, the Secretary must base the program upon consideration of the eight factors listed in Section 18(a)(2), including environmental factors. The Secretary must also comply with Section 18(a)(3), which calls for balancing “the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.” These three elements are not equally important, and do not need to receive equal weight. Rather, the Secretary has “discretion to weigh the elements so as to ‘best meet national energy needs.’ The weight of these elements may well shift with changes in technology, in environment, and in the nation’s energy needs.” Courts recognize that the “facts used by the Secretary in performing the analysis are largely predictive in nature. . . . Thus, . . . great deference is afforded to the secretary in these areas.”

Given clear and mounting climate change and other environmental costs from offshore oil and gas production, the next administration can and should take a more climate sensitive approach in the next five-year plan. Interior should harmonize offshore management with meaningful action to address climate change, and address sensitive or “frontier” areas, like the Arctic Ocean, where the option value of leasing (or the informational value of delay) is likely greatest.

While the Secretary is afforded a great amount of discretion in adopting five-year programs and could sharply curtail leasing, it is not clear that any subsequent program could include no lease sales at all, barring statutory changes to OCSLA. A new program that included no lease sales at all would need to contend with the D.C. Circuit’s opinion in Center for Biological Diversity v. U.S. Department of the Interior. The next administration could also encourage legislation to amend OCSLA to allow for no new leasing in five-year plans, explicitly.

Alternatively, a net-zero emissions approach may be prudent, whereby Interior sharply curtails new leasing in most OCS areas and requires any new lessees to mitigate GHG emissions to the maximum extent feasible and contribute toward an offset fund for any remaining, unavoidable GHG emissions. Such an approach would ideally align with a new Climate Action Plan that sets national and Interior-specific GHG emission goals. Interior should also refrain from offering any leases in certain planning areas, such as sensitive or frontier areas. To mitigate emissions, Interior could require better pollution control technology. And for unavoidable, remaining emissions, Interior could either charge a mitigation fee, directing the proceeds toward offset projects including offshore wind, or raise bid prices and royalty rates to account for any unavoidable climate change costs and direct the proceeds to offset projects.
Finally, while not explored in this document, Congress could impose offshore leasing moratoria in certain areas of the OCS, as it has done in the past, or even a leasing moratorium for the full OCS.93

E. For offshore public lands and waters, consider withdrawing areas of the Outer Continental Shelf from oil and gas leasing using Presidential authority.

OCSLA Section 12(a) provides that “The President of the United States may, from time to time, withdraw from disposition any of the unleased lands of the outer Continental Shelf.”94 Previous Presidents have used this authority to withdraw significant portions of land from the OCS from disposition through leasing. For example, President Obama, through a number of executive actions, used this authority to withdraw over 40 million acres of the OCS in the Arctic Ocean and off the Atlantic coast.95 Most of these withdrawals were set to last “for a time period without specific expiration.”96 At least one federal district court has interpreted this language to mean that the withdrawals cannot be overturned by a subsequent President, while Congress retains authority to modify such withdrawals.97 The Ninth Circuit Court of Appeals is currently reviewing an appeal on this issue.98

Pursuant to Section 12(a) authority, the next administration should consider withdrawing areas of the OCS from oil and gas leasing. There is ample precedent for withdrawing large portions of the OCS from leasing, including for conservation purposes.99 One untested, potential limit on Section 12(a) authority would be withdrawing the entire OCS from leasing. No prior presidential withdrawal has come close to withdrawing all 1.7 billion acres of the OCS, and such an action would almost certainly be subject to litigation. Nevertheless, withdrawals of large areas of the OCS similar to those done by previous Presidents are a legally sound, efficient method of withdrawing federal lands and waters from offshore oil and gas leasing.

F. Remove inefficient barriers to renewable energy production on federal lands, both onshore and offshore.

During the Obama administration, Interior approved 60 commercial-scale renewable energy projects on public lands that have the potential to produce 15,500 megawatts, or 15.5 gigawatts of energy.100 The Trump administration approved 3,481 MW, or 3.5 GW, during its nearly four-year tenure.101 Since 2009 in the United States as a whole, cumulative renewable electricity capacity has grown 90.6%—from 130.9 GW to more than 249.4 GW in 2018, representing about 17.6% of total annual generation in the United States.102 With ample wind and solar potential, public lands can become an important source renewable energy generation, while providing economic benefits at the local, state, and federal levels.103

Onshore Renewable Energy

First, Interior should set an ambitious, achievable target for new, permitted renewable energy capacity on public lands, and approve new rights-of-way for solar and wind energy projects. Demand for wind and solar is likely to continue to grow in the near future, as many states have recently passed renewable energy mandates.104 The renewable energy industry, consumers, and state governments have continued to push for renewable energy development in spite of the Trump administration’s tariffs, policies, and withdrawal of the United States from the Paris climate agreement.105
Second, as part of an improved planning process described in Parts II.A and II.B, Interior should expand on the successful use of programmatic EISs and renewable energy “zones” to identify more areas with strong renewable resource potential and low environmental (or other) conflict. Smart use of RMPs and Designated Leasing Areas (DLAs)\textsuperscript{106} can aid in this process. BLM should also consider improving timely permitting to the extent feasible and streamlining the solar variance process in order to allow more opportunities for utility-scale solar development.\textsuperscript{107}

Third, Interior should identify renewable resource generation potential in areas that have experienced or are expected to experience a decline in fossil fuel production, and consider identifying them as DLAs where applicable. For instance, Interior should identify new opportunities to use abandoned or reclaimed coal mine lands as renewable energy production sites. Interior should also collaborate with partner agencies like the Departments of Energy and Labor to identify promising locations for job training programs, based on its knowledge of fossil fuel production trends, potential job impacts (such as loss of fossil fuel industry jobs), and appropriate locations for renewable energy production. In particular, sites with existing energy infrastructure that is being phased out, such as the proposed Shiprock Solar Project, may be prime locations for new solar projects; repurposing existing transmission lines and substations can reduce costs, and a skilled workforce already exists in such communities.\textsuperscript{108}

A new interagency task force could be established with the dual goals of removing barriers to renewable energy production on federal lands and retraining displaced and potentially displaced workers. This taskforce could build on President Obama's POWER+ Plan, which provided resources for economic diversification, job creation, job training, and other employment services for workers and communities affected by layoffs at coal mines and coal-fired power plants.\textsuperscript{109} Retraining dislocated coal miners to work in solar and wind energy development is a promising avenue for such programs.\textsuperscript{110} In 2015 the Department of Energy publicly announced a goal to train 75,000 people to enter the solar workforce by 2020,\textsuperscript{111} but the program's funding expired in 2019,\textsuperscript{112} and is not on pace to meet this target.\textsuperscript{113}

BLM should also solicit feedback on whether to revise its rule on competitive terms for leasing public lands for solar and wind energy development in order to help facilitate responsible renewable energy development.\textsuperscript{114} Critics from the renewable energy industry and conservation organizations have flagged potential issues with the 2016 rule that may hinder renewable energy development on public lands.\textsuperscript{115} BLM should consider meeting with diverse stakeholders to discuss reopening the rule, or soliciting feedback through other means.

Finally, the Department of Energy should update and publish its Renewable Energy Data Book.\textsuperscript{116} New editions have not been published since 2018. The book provides useful information about renewable energy to researchers, scientists, policymakers, and the renewable energy industry. New editions should include renewable energy projects on federal land managed by Interior, both onshore and offshore.

**Offshore Renewable Energy**

The United States has the potential for thousands of gigawatts of offshore wind generation\textsuperscript{117} but currently has just one operating offshore wind farm.\textsuperscript{118} To-date, BOEM has issued 15 commercial leases for offshore wind development that could support more than 21 gigawatts of generating capacity once operational.\textsuperscript{119} The Biden campaign has announced the goal of doubling offshore wind output by 2030,\textsuperscript{120} and the next administration should take concrete steps to accelerate offshore wind development in an environmentally responsible manner.
First, Interior should launch a comprehensive study on the best locations to permit offshore wind capacity in the Outer Continental Shelf, expanding on existing state-specific and region-specific reports published by BOEM. The study should identify opportunities to construct wind turbines and floating wind farms with minimal ecological, fishing industry, and tourism impacts, while maximizing energy output. Any future fossil fuel leasing or lease renewals should be directed away from areas with the greatest renewable energy potential. In addition, the study’s findings should be incorporated into regional ocean plans. Special attention should also be paid to offshore wind potential on the Pacific Outer Continental Shelf, which has received less analysis and industry interest to-date, despite favorable resource potential and neighboring states with strong renewable portfolio standards.

Second, BOEM should identify additional offshore renewable energy “zones” in the OCS as Wind Energy Areas (WEAs): areas with strong renewable resource potential and low environmental conflict. BOEM could also prepare a programmatic EIS for offshore wind in these new WEAs, opening the door for more streamlined project-level environmental reviews in the future.

Third, BOEM should consider creating a taskforce to streamline the offshore wind permitting process. Policy changes between administrations, the complex relationship between state and federal offshore regulations, and permitting hurdles have previously stalled offshore wind projects like Vineyard Wind. A more transparent and efficient process would likely attract more private sector investment in this industry. A new taskforce on offshore wind could build off the previously implemented Intergovernmental Renewable Energy Task Forces established by BOEM.

G. Develop a strategy for the appropriate treatment of GHG emissions and the use of the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane in environmental impact statements, consistent with legal precedent and best practices for agency decisionmaking.

Interior, in consultation with the Council on Environmental Quality (CEQ), should develop a strategy to ensure that NEPA analyses disclose all direct and indirect emissions of proposed projects and monetize GHG emissions using the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane. Interior’s sub-agencies have been inconsistent in their treatment of upstream and downstream GHG emissions, as well as in their GHG emissions quantification methods. And recent changes to CEQ guidance and NEPA regulations during the Trump administration warrant attention and action in the next administration.

Pursuant to NEPA, environmental impact statements (EISs) for any action significantly affecting the environment must describe the affected environment and any foreseeable impacts accruing from the action and reasonable alternatives. The dual purpose of these requirements is to ensure that agencies take a “hard look” at the potential consequences of their activities and disclose this information to the public.

CEQ’s 2016 final guidance on assessing the climate impacts of federal actions subject to NEPA made clear that upstream and downstream GHG emissions should be included in environmental impact statements and quantified. The 2016 guidance also stated that the Interagency Working Group’s Social Cost of Carbon, which estimates the marginal damages associated with an increase in carbon dioxide emissions in a given year, “provides a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review.”
However, in 2017, CEQ withdrew its 2016 guidelines. In June 2019, CEQ published a draft of weaker replacement guidance. The new guidance allows a qualitative analysis of GHG emissions when “an agency determines that the tools, methods, or data inputs necessary to quantify a proposed action’s GHG emissions are not reasonably available, or [quantification] otherwise would not be practicable.” This language opens the door to avoiding consideration of GHGs and represents a departure from CEQ’s longstanding presumption in favor of gathering information, barring extraordinary circumstances. Moreover, CEQ claims that the social cost of carbon was “not intended for socio-economic analysis under NEPA or decision-making on individual actions, including project-level decisions,” thus discouraging its use. CEQ should update this guidance to clarify that direct and indirect GHG emissions should be quantified and monetized, using the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane, to the fullest extent possible.

Moreover, for decades, CEQ regulations implementing NEPA required agencies to consider direct, indirect, and cumulative impacts accruing from the proposed action. However, CEQ finalized new NEPA regulations in July 2020. The new regulations contain sweeping changes, some of which appear designed to limit climate change considerations. As just one example, the new regulations appear to take aim at indirect GHG emissions by stating that, “[e]ffects should generally not be considered significant if they are remote in time, geographically remote, or the product of a lengthy causal chain.” Many GHG emissions occur downstream from points of production, at locations that might be considered “geographically remote,” “remote in time,” or even “the product of a lengthy causal chain.” Given the sweeping nature of these changes and the timing of their release, the new NEPA regulations may be a good candidate for Congressional Review Act repeal. Barring CRA repeal or invalidation through litigation, CEQ should embark upon a new rulemaking process to amend the NEPA regulations to better reflect NEPA’s purpose and legal mandates.

To achieve NEPA’s goals of informing decisionmakers and the public, monetizing the costs and benefits of changes in GHG emissions is necessary for EISs and environmental assessments (EAs) for resource management decisions that have GHG effects. The U.S. Supreme Court has called the disclosure of impacts the “key requirement of NEPA,” and has 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.” Without context, it is challenging for decisionmakers and the public to assess the magnitude and climate consequences of, for example, an additional million tons of carbon dioxide. Monetization, however, allows agencies to weigh all costs and benefits of an action—and to compare alternatives—using the common metric of money. Monetizing climate costs, therefore, better informs the public and helps “brings those effects to bear on [the agency’s] decisions.” While NEPA does not require a formal cost-benefit analysis, agencies’ approaches to assessing costs and benefits must be balanced and reasonable. To the extent that agencies quantify and monetize many of the economic benefits and distributional effects of resource management decisions (such as expected resource yields, revenue, or jobs), multiple courts have held that agencies must also treat environmental costs with proportional analytical rigor.

The Interagency Working Group’s Social Cost of Carbon and the Social Cost of Methane are peer-reviewed methodologies that are the proper metrics for monetization. These metrics estimate the dollar figure of damages for one extra ton of GHG emissions, and as such, are appropriate to use when assessing the cost of actions with “marginal” impacts on cumulative global emissions.

Interior, in consultation with CEQ, should develop a strategy to ensure that programmatic and project-level EISs and EAs analyze upstream and downstream GHG emissions and use the Social Cost of Carbon and the Social Cost of Methane to monetize the impact of these emissions. Agency best practices could be set forth in a memorandum or guidance document in order to improve clarity and consistency.
Conclusion

These federal energy development and climate change recommendations aim to increase planning and transparency and align natural resources policies with climate change goals, in order to meet the needs of current and future generations.

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1 In pursuing such a strategy, Interior should consider how to best define and apply the concept of “net-zero fossil fuel emissions” from public lands. See infra Section II.B for more detail.


3 See Rhodium Group, Preliminary US Emissions Estimates for 2018 (Jan. 2019), https://perma.cc/RE7C-PH58 (describing how the “US was already off track in meeting its Paris Agreement targets,” and “[t]he gap is even wider headed into 2019.”). For instance, total U.S. emissions increased by about 3.4% in 2018. Id.

4 If an economy-wide carbon tax or greenhouse gas emissions cap were in place—for example, if a cap were developed pursuant to Clean Air Act Section 115—a carbon budget for emissions from public lands could interfere with allowing the market to find the lowest-cost emission reductions possible.


8 The Biden Plan for a Clean Energy Revolution and Environmental Justice, JoeBiden.com, https://perma.cc/2YV7-WDUA; see also https://perma.cc/HU8B-S3UJ.

9 See Dept. of Interior, Secretarial Order No. 3338 (2016), https://perma.cc/8RYA-ZVZD.


Under the Bureau of Land Management’s Planning 2.0


Id.


5 U.S.C. § 801(a)(1)(A). If signed by the President, the regulation is not only revoked but no regulation “in substantially the same form” may be promulgated unless approved by Congress. 5 U.S.C. § 801(b)(2).

Davis Noll & Jacewicz, supra note 34, at 17-18.


43 U.S.C. § 1702(c).

BLM, INSTRUCTION MEMORANDUM 2010-117, OIL AND GAS LEASING REFORM - LAND USE PLANNING AND LEASE PARCEL REVIEWS (May 17, 2010).


Id.

The regulatory impact analysis for the rule shows that the stringency of the regulation is not calibrated using the full global Social Cost of Carbon. See BLM, Regulatory Impact Analysis for Revisions to 43 CFR 3100 (Onshore Oil and Gas Leasing) and 43 CFR 3600 (Onshore Oil and Gas Operations); Additions of 43 CFR 3178 (Royalty-Free Use of Lease Production) and 43 CFR 3179 (Waste Prevention and Resource Conservation) (Jan. 14, 2016).


See 43 C.F.R. § 3473.3-1(a).


See Michael A. Livermore, Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil, 84 U. Colo. L. Rev. 581 (2013).


Center for Sustainable Economy v. Jewell, 779 F.3d 588, 610 (D.C. Cir. Mar. 6, 2015). Policy Integrity served as counsel to Petitioner, Center for Sustainable Economy.

See BUREAU OF OCEAN ENERGY MANAGEMENT, OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED PROGRAM 2017–2022 (2016).


Id.

NGI Staff Reports, Salazar Sees New OCS Leasing Plan by Around 2010, NATURAL GAS INTELLIGENCE (Mar. 18, 2009), https://perma.cc/XQZ7-RNHX.

See, e.g., 75 Fed. Reg. 44,276 (July 28, 2010) (cancelling lease sales because “[c]ancellation . . . will allow time to develop and implement measures to improve the safety of oil and gas development in Federal waters, provide greater environmental protection, and substantially reduce the risk of catastrophic events”).
See, e.g., Ctr. for Biological Diversity v. U.S. Dep’t of the Interior, 563 F.3d 466 (D.C. Cir. 2009).


Id. at 1317.

Id. § 1344(a)(3).

Id.


See, e.g., Ctr. for Biological Diversity v. U.S. Dep’t of the Interior, 563 F.3d 466, 485 (D.C. Cir. 2009). The court explained that Interior has a “continuing duty to promulgate five-year Leasing Programs under OCSLA. Id. The court stated that "Congress has already decided that the OCS should be used to meet the nation’s need for energy," and held that Interior’s obligation under OCSLA is to “minimize[] the local environmental damage to the OCS,” but "Interior simply lacks the discretion to consider any . . . effects that oil and gas consumption may bring about." Id. Instead, in the court’s view, decisions “regarding the role of oil and gas . . . in the Nation’s overall energy policy” are within Congress’s domain. Id.

See, e.g., Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 603-07 (upholding Interior’s decision to not offer any lease sales in some planning areas in Alaska in the 2012-2017 leasing program).

See Curry L. Haggerty, Cong. Research Serv., R41132, Outer Continental Shelf Moratoria on Oil and Gas Development 5-7 (2011).


Exit Memorandum from Sally Jewell on Dep’t of the Interior’s Record of Progress (Jan. 5, 2017), https://perma.cc/N6HI-R42Z.

The Trump administration approved seven solar projects (four of which were already underway when it took office) compared to the Obama administration’s 11 projects at the same point in his presidency, and Trump approved one wind project compared to Obama’s 4. See Nicole Gentile & Kate Kelly, The Trump Administration Is Stifling Renewable Energy on Public Lands and Waters 6 figs.1 & 2 (Ctr. for Am. Progress 2020).


Bobby Magill, States Give Solar Industry Leader Hope Amid Era of Uncertainty, BLOOMBERG (Jan. 29, 2019), https://perma.cc/CMW7-C4E8. The Trump administration subjected the solar industry to tariffs on solar panels, aluminum, and steel, hindering renewable energy development on both private and public lands. These tariffs are set to expire in 2021, and should not be renewed.

DLAs are parcels of land with specific boundaries identified by the BLM land use planning process as being a preferred location for solar or wind energy development that may be offered competitively. 43 C.F.R. § 2801.5.
Offshore Wind Strategy could produce 7,200 TWh per year, which is almost twice the total 2015 U.S. electricity generation. U.S. coastal waters have a technical offshore wind capacity of 2,058 GW, which could produce 7,200 TWh per year, not the amount of power actually being generated.

Identified criticisms include: a fee structure that may be too costly for renewables, especially as compared to fossil fuels; a capacity fee that may favor solar PV over wind energy without adequate justification; and a capacity fee that charges companies for the total capacity of the leasehold, rather than the amount of power actually being generated.


For instance, Interior could consider public-private partnerships, working with organizations such as the Offshore Winds Skills Academy. Univ. of Del., Offshore Wind Skills Academy, https://perma.cc/P9FR-SUGT.


Identified criticisms include: a fee structure that may be too costly for renewables, especially as compared to fossil fuels; a capacity fee that may favor solar PV over wind energy without adequate justification; and a capacity fee that charges companies for the total capacity of the leasehold, not the amount of power actually being generated.

See Karl-Erik Stromsta, Vineyard Wind’s Timeline Slips as Trump Administration Further Delays Permits (Feb. 2020), https://perma.cc/E3HM-ZSKE.


See Bureau of Ocean Energy Management, A Message from BOEM’s Acting Director: The Path Forward for Offshore Wind Leasing on the Outer Continental Shelf (June 11, 2019), https://perma.cc/7C23-BGDW.


The 30 megawatt, five turbine Block Island Wind Farm began commercial operations in December 2016. See Rhode Island Coastal Resources Mgmt. Council, Deepwater Wind Block Island, https://perma.cc/Z64F-6KCH.


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131 Id. at 33.
133 See id. at 30,098.
134 Id.
135 See 40 C.F.R. § 1502.22; Hein & Jacewicz, supra note 127.
138 See id. at 43,375.
139 Balt. Gas & Elec. Co. v. NRDC, supra note 129 at 96.
140 See id.
141 40 C.F.R. § 1502.23 (“[T]he weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis.”)
144 Id.