A New Way Forward on Climate Change and Energy Development for Public Lands and Waters

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September 2020
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Acknowledgements:
Thank you to Kim Chen, Star Gulant, and Charlotte McCary for research and drafting assistance.

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**[1] 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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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.[2] 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.[3] 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.**[4] 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.[5] The last report that USGS published on GHG emissions was released in 2018 and covers emissions from 2005 to 2014.[6]

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.[7] 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."[8] Issuing a pause and launching and 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.[9]

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,[10] 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.[11] 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.[17] The Trump administration repealed the Valuation Rule in 2017.[18] 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.[19] Shortly thereafter, ONRR issued guidance to lessees giving them until January 1, 2020 to comply with the reinstated rule.[20] ONRR issued two more guidance documents pushing back this compliance deadline, first to July 1, 2020 and then to October 1, 2020.[21] A motion to enforce the rule by the original deadline of January 1, 2020 was denied.[22] 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.[23] 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.[24] 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.[25] 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.[26] The court granted summary judgment to defendants on all of these claims.[27] California has appealed the case to the Ninth Circuit.[28] 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.[29] 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.[30] The 2019 revisions weakened requirements related to well design, well control, casing, cementing, real-time monitoring, and subsea containment.[31] 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.[32] The case was transferred to Eastern District of Louisiana, and litigation is ongoing as of August 2020.[33] 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.[34] 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.[35]

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.[36] 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.[37]

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).[38] 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."[39] 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.[40]

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.[41] 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.[42] These uses include, but are not limited to, conservation, restoration, habitat protection, recreation, renewable energy development, grazing, and mineral development or mineral reserves.[43]

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.[44] 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."[45] 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).[46] The CRA revocation prohibits the agency from promulgating any rule that is "substantially the same" in the future without congressional approval.[47] 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.[48] 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.[49] 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."[50]

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.[51] 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."[52] 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.[53] The MLP process considered phased leasing, phased development, requirements to reduce or capture emissions, and additional mitigation for wildlife and other potential resource conflicts.[54] In 2018, BLM withdrew Instruction Memorandum 2010-117 and eliminated the use of MLPs.[55]

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."[56] 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,[57] 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.[58]

While this document emphasizes climate-sensitive approaches to RMPs, consistent with scientific urgency to reduce GHG emissions,[59] 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.[60] 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.[61] Moreover, the Mineral Leasing Act of 1920 and Federal Coal Leasing Amendments Act of 1976 require that federal fossil fuel leases be offered competitively.[62] 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.**

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.[63] 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.[64] About 40 percent of existing onshore oil and gas leases were issued noncompetitively.[65] 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.[66] 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.[67]

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.[68]

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

Interagency Working Group's Social Cost of Carbon and Social Cost of Methane.[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.[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, **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,[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.[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.[73]

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.[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.[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.[76] BOEM itself recently acknowledged that option value is a component of the fair market value of the right to develop public resources.[77] However, BOEM does not yet *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.

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. . ."[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."[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.[80] Second, it postponed and cancelled lease sales that had been scheduled under the 2007-2012 program.[81] 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).[82] 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.[83] Finally, Interior prepared a new 2012-2017 program, which better aligned with the administration's policy goals.[84]

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.[85] 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."[86] These three elements are not equally important, and do not need to receive equal weight.[87] 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."[88] 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."[89]

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.[90]

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*.[91] 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.[92] 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)[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**.[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.[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.[109] Retraining dislocated coal miners to work in solar and wind energy development is a promising avenue for such programs.[110] In 2015 the Department of Energy publicly announced a goal to train 75,000 people to enter the solar workforce by 2020,[111] but the program's funding expired in 2019,[112] and is not on pace to meet this target.[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.[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.[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.**[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[117] but currently has just one operating offshore wind farm.[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.[119] The Biden campaign has announced the goal of doubling offshore wind output by 2030,[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.[121] 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.[122] 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.[123] 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.[124]

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.[125] 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.[126]

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.[127] 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.[128] 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.[129]

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.[130] 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."[131]

However, in 2017, CEQ withdrew its 2016 guidelines.[132] In June 2019, CEQ published a draft of weaker replacement guidance.[133] 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."[134] 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.[135] 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.[136] **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.[137] 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.").[138] 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."[139] 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."[140] While NEPA does not require a formal cost-benefit analysis,[141] 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.[142]

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.[143] These metrics estimate the dollar figure of damages for one extra ton of GHG emissions,[144] and as such, are appropriate to use when assessing the cost of actions with "marginal" impacts on cumulative global emissions.[145]

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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Endnotes

[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.

[2] The White House, President Obama's Climate Action Plan: 2nd Anniversary Progress Report 2 (June 2015), https://perma.cc/3CA3-8H7K.

[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.

[5] *See, e.g.,* USGS, *Federal Lands Emissions and Sequestration in the United States: Estimates 2005-14*, https://eerscmap.usgs.gov/fedghg/.

[6] *See, e.g.,* Merrill, M.D., et al., *Federal Lands Greenhouse Gas Emissions and Sequestration in the United States—Estimates for 2005–14*, U.S. Geological Survey Scientific Investigations Report 2018–5131, https://perma.cc/W5YH-H9LJ.

[7] Center for American Progress & The Wilderness Society, Cutting Greenhouse Gas from Fossil-Fuel Extraction on Federal Lands and Waters (Mar. 19, 2015), https://perma.cc/GYP6-X8BN; *see also* U.S. Dep't of the Interior & U.S. Dep't of Agriculture, New Energy Frontier: Balancing Energy Development on Federal Lands (May 2011), https://perma.cc/8GWJ-AW6H.

[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.

[10] *See* Bureau of Land Management, *Federal Coal Program: Programmatic Environmental Impact Statement—Scoping Report, Volumes I and II* (January 2017), https://perma.cc/Z2DQ-6T3D.

[11] Policy Integrity provided detailed recommendations for the coal PEIS process in a June 2016 report. *See* Jayni Foley Hein, *Priorities for Federal Coal Reform: Twelve Policy and Procedural Goals for the Programmatic Review*, Institute for Policy Integrity, NYU School of Law (June 21, 2016), https://perma.cc/T4ZC-FUTZ.

[12] Dep't of the Interior, Secretarial Order No. 3349, American Energy Independence (Mar. 29, 2017); Exec. Order No. 13783, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

[13] Dep't of the Interior, Secretarial Order No. 3360, Rescinding Authorities Inconsistent with Secretary's Order 3349, "American Energy Independence" (Dec. 22, 2017), https://perma.cc/7VDB-B956.

[14] BLM, Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008, 83,008 (Nov. 18, 2016).

[15] BLM, Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 Fed. Reg. 49,184 (Sept. 28, 2018), https://perma.cc/WSL6-J6VF.

[16] California v. Bernhardt., No. 18-cv-05712-YGR, 2020 U.S. Dist. LEXIS 128961, 48, 56 (N.D. Cal. July 15, 2020).

[17] Office of Nat. Res. Revenue, Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform, 81 Fed. Reg. 43,338, 43,338 (Jul. 1, 2016), https://perma.cc/AY5S-4Z29; *see also* U.S. Dep't of the Interior, Press Release, Interior Department Announces Final Regulations to Ensure American Public Receives Every Dollar Due of Oil, Gas & Coal on Public Lands (June 30, 2016), https://perma.cc/TM8V-5SME.

[18] Office of Nat. Res. Revenue, Repeal of Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform, 82 Fed. Reg. 36,934 (Aug. 7, 2017).

[19] California by & through Becerra v. U.S. Dep't of the Interior, 381 F. Supp. 3d 1153 (N.D. Cal. 2019).

[20] Office of Nat. Res. Revenue, Dear Reporter Letter on Reinstatement of the Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform Rule (June 13, 2019), https://perma.cc/W4FC-7923.

[21] Office of Nat. Res. Revenue, Dear Reporter Letter on Extending the Deadline for 2016 Valuation Rule Compliance to 07/01/2020 (Nov. 20, 2019), https://perma.cc/LY3V-7V4J; Office of Nat. Res. Revenue, Dear Reporter Letter on Extending the Deadline for 2016 Valuation Rule Compliance to 10/01/2020 (June 30, 2020), https://perma.cc/6PKA-47ZE.

[22] California v. U.S. Dep't of the Interior, No. 17-cv-05948-SBA, slip op. (N.D. Cal. Mar. 16, 2020).

[23] Office of Nat. Res. Revenue, ONRR 2020 Valuation Reform and Civil Penalty Rule (Aug. 2020), https://perma.cc/6R4N-U6VZ.

[24] BLM, Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands; Rescission of a 2015 Rule, 82 Fed. Reg. 61,924 (Dec. 29, 2017), https://perma.cc/5AAT-RK5F.

[25] BLM, Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 80 Fed. Reg. 16,128, 16,128 (Mar. 26, 2015), https://perma.cc/5HT4-TP7K.

[26] California v. Bureau of Land Mgmt., No. 18-cv-00521-HSG, 2020 WL 1492708 (N.D. Cal. Mar. 27, 2020), *appeal docketed*, No. 20-16157 (9th Cir. June 12, 2020)

[27] *Id*.

[28] The appeal was docketed on June 12, 2020. *See id.*

[29] Bureau of Safety & Environmental Enforcement, Oil and Gas and Sulfur Operations in the Outer Continental Shelf—Blowout Prevent Systems and Well Control Revisions, 84 Fed. Reg. 21,908 (May 15, 2019), https://perma.cc/VS7P-29JT [hereinafter "Revised Well Control Rule"].

[30] Bureau of Safety & Environmental Enforcement, Oil and Gas and Sulfur Operations in the Outer Continental Shelf—Blowout Prevent Systems and Well Control, 81 Fed. Reg. 25,888 (Apr. 29, 2016), https://perma.cc/E7Y3-5PA7.

[31] Revised Well Control Rule, 84 Fed. Reg. at 21,908.

[32] Complaint at 3, Sierra Club v. Angelle, No. 19-cv-03263-RS, 2019 U.S. Dist. LEXIS 229376 (N.D. Cal. Nov. 26, 2019), https://perma.cc/AD3A-LK35.

[33] Order Granting Motion to Transfer, Sierra Club v. Angelle, No. 19-cv-03263-RS, 2019 U.S. Dist. LEXIS 229376 (N.D. Cal. Nov. 26, 2019).

[34] Bethany Davis Noll & Natalie L. Jacewicz, Inst. for Pol'y Integrity, A Roadmap to Regulatory Strategy in an Era of Hyper-Partisanship Part I.B (2020).

[35] *See id.*

[36] *See id.* at Part II.C.2.c.ii.

[37] *Id*.

[38] 43 U.S.C. § 1702(c).

[39] The Biden Plan for a Clean Energy Revolution and Environmental Justice, JoeBiden.com, https://perma.cc/2YV7-WDUA.

[40] Michael C. Bloom & Olivier Jamin, *The Trump Public Lands Revolution: Redefining "The Public" in Public Land Law*, 48 Envt'l Law 311, 339 (2018).

[41] *See* Nada Culver, *The Energy Landscape Ahead: Planning Under the Bureau of Land Management's Planning 2.0*, 2017 No. 1 RMMLF-INST 2A, 2A-6–7 (2017).

[42] *Id*.

[43] *See* 43 U.S.C. § 1702(c).

[44] *See* Culver, *supra* note 41; California Energy Commission, Desert Renewable Energy Conservation Plan, https://perma.cc/3N3P-E253.

[45] BLM, Resource Management Planning, 81 Fed. Reg. 89,580, 89,629, 89,631 (Dec. 12, 2016); Press Release, Bureau of Land Mgmt., *BLM Finalizes Rule to Make Land Use Plans More Responsive to Community Needs* (Dec. 1, 2016), https://perma.cc/9977-9TNK.

[46] 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).

[47] 5 U.S.C. § 801(b)(2).

[48] Davis Noll & Jacewicz, *supra* note 34, at 17-18.

[49] *Id.* (citing Via Christi Reg'l Med. Ctr., Inc. v. Leavitt, 509 F.3d 1259, 1271 n.11 (10th Cir. 2007) (declining to review compliance with the Congressional Review Act in reviewing denial of reimbursement of Medicare depreciation expenses by the Secretary of Health and Human Services); Kansas Nat. Res. Coal. v. Dep't of Interior, 382 F. Supp. 3d 1179, 1185 (D. Kan. 2019) (finding failure to submit rule to Congress unreviewable because of statutory bar on judicial review under 5 U.S.C. § 805); Montanans for Multiple Use v. Barbouletos, 568 F.3d 225, 229 (D.C. Cir. 2009) (declining to review amendments of a forest plan by the U.S. Forest Service for compliance with the Congressional Review Act reporting requirement). *But see* Tugaw Ranches v. Dep't of Interior, 362 F. Supp. 3d 879, 883 (D. Idaho 2019) (finding 5 U.S.C. § 805 to be ambiguous in light of statutory text, legislative history, and policy concerns and thus allowing judicial review); United States v. S. Ind. Gas & Elec. Co., IP99-1692-C-M/S, 2002 U.S. Dist. LEXIS 20936, at *11–18 (S.D. Ind. Oct. 24, 2002) (holding that court was not barred from reviewing EPA's compliance with the CRA)).

[50] 43 U.S.C. § 1702(c).

[51] BLM, Instruction Memorandum 2010-117, Oil and Gas Leasing Reform - Land Use Planning and Lease Parcel Reviews (May 17, 2010).

[52] *Id.* at 2; *see also* Matthew J. McKeown, *Views from the Agencies and the Hill: Interior Public Lands at the End of the Obama Era*, 2017 No. 1 RMMLF-INST 3A, 3A-1 (Jan. 26, 2017).

[53] *Id.*

[54] *See, e.g.,* BLM, Notice of Availability of the Moab Master Leasing Plan and Proposed Resource Management Plan Amendments/Final Environmental Impact Statement for the Moab and Monticello Field Offices, UT., 81 Fed. Reg. 48,840 (July 26, 2016).

[55] BLM, Instruction Memorandum 2018-034, Updating Oil and Gas Leasing Reform - Land Use Planning and Lease Parcel Reviews (Jan. 31, 2018), https://perma.cc/4JPK-KGDX.

[56] *See, e.g.,* The Biden Plan for a Clean Energy Revolution and Environmental Justice, JoeBiden.com, https://perma.cc/9UBA-UPHM.

[57] *See* Dep't of the Interior, Landscape-Scale Mitigation Policy, 600 DM 6 (Oct. 23, 2015), https://perma.cc/B843-T47S ("The elements of mitigation [are] summarized as avoidance, minimization, and compensation...").

[58] *See id.*

[59] *See, e.g.,* Intergov'tl Panel on Climate Change, Summary for Policymakers, Global Warming of 1.5°C: An IPCC Special Report 15 (2018), https://perma.cc/4KE4-ZM6B ("Pathways limiting global warming to 1.5°C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems (high confidence)."); Ilona Otto, et al., *Social Tipping Dynamics for Stabilizing Earth's Climate by 2050*, 5 Proc. Nat'l Acad. Sci. 2354 (2020) ("Limiting global warming to 1.5 °C as stipulated in the Paris Climate Agreement scientifically implies a complete net decarbonization of the world's energy and transport systems, industrial production, and land use by the middle of this century.").

[60] *See, e.g.,* BLM, Moab Master Leasing Plan, *supra* note 54.

[61] 43 U.S.C. § 1701(a)(9).

[62] 30 U.S.C. § 201(a)(1); Federal Coal Leasing Amendments Act of 1975, Pub. L. No. 94-377, 90 Stat. 1083, 1087 (1976), *codified as amended* at 30 U.S.C. § 181 et seq.

[63] *See, e.g.,* White House Council of Economic Advisors, The Economics of Coal Leasing on Federal Lands: Ensuring a Fair Return to Taxpayers (June 2016); Spencer Reeder & James H. Stock, *Federal Coal Leasing Reform Options: Effects on CO2 Emissions and Energy Markets: Executive Summary* (Feb. 2016); Jayni Hein & Peter Howard, *Illuminating the Hidden Costs of Coal*, Institute for Policy Integrity, NYU School of Law (Dec. 2015), https://perma.cc/ERH3-XTLB; U.S. Gov't Accountability Office. No. GAO-08- 691, The Federal System for Collecting Oil and Gas Revenues Needs Comprehensive Reassessment (Sept. 2008), https://perma.cc/9UQW-H4MU.

[64] U.S. Gov't Accountability Office, No. GAO-14-140, Coal Leasing: BLM Could Enhance Appraisal Process, More Explicitly Consider Coal Exports, and Provide More Public Information 3 (Dec. 2013), https://perma.cc/Y5T5-HSQW.

[65] BLM, Advance Notice of Proposed Rulemaking: Oil and Gas Leasing; Royalty on Production, Rental Payments, Minimum Acceptable Bids, Bonding Requirements, and Civil Penalty Assessments, 80 Fed. Reg. 22,148, 22,150 (April 21, 2015).

[66] 30 U.S.C. §207(a).

[67] 43 U.S.C. §§ 1344(a), 1701(a)(9); 30 U.S.C. § 201(a)(1).

[68] 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).

[69] *See* Institute for Policy Integrity, Social Costs of Greenhouse Gases (2017), https://perma.cc/249Z-XQPW; *see also* Reeder & Stock, *supra* note 63; Hein & Howard, *supra* note 63.

[70] Vulcan Philanthropy, *Federal Coal Leasing Reform Options: Effects on CO2 Emissions and Energy Markets: Summary of Modeling Results* 34-39 (Jan. 26, 2016).

[71] *See* 43 C.F.R. § 3422.1(c)(2). For the Bureau of Labor Statistics' Inflation Calculator, see Bureau of Labor Statistics, CPI Inflation Calculator, https://perma.cc/D4RW-5XR7.

[72] *See* 43 C.F.R. § 3473.3-1(a).

[73] *See* U.S. Gov't Accountability Office, No. GAO-09-74, Interior Could Do More to Encourage Diligent Development 13 (Oct. 2008), https://perma.cc/BC7P-6D9A.

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

[75] Jayni Hein, et al., *Look Before You Lease: Reducing Fossil Fuel Dominance on Public Lands by Accounting for Option Value*, Inst. for Pol'y Integrity, NYU School of Law (Jan. 2020), https://perma.cc/8YCF-LB7Z.

[76] *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.

[77] *See* Bureau of Ocean Energy Management, Outer Continental Shelf Oil and Gas Leasing Proposed Program 2017–2022 (2016).

[78] 43 U.S.C. § 1344(a) (2018).

[79] *Id.*

[80] NGI Staff Reports, *Salazar Sees New OCS Leasing Plan by Around 2010*, Natural Gas Intelligence (Mar. 18, 2009), https://perma.cc/XQZ7-RNHX.

[81] *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").

[82] Dep't of the Interior, Revised Program Outer Continental Shelf Oil and Gas Leasing Program 2007-2012 1 (Dec. 2010). *See also* Ctr. for Biological Diversity v. U.S. Dep't of the Interior, 563 F.3d 466 (D.C. Cir. 2009).

[83] H.R. Rep. No. 112-69, at 2 (2011).

[84] Bureau of Ocean Energy Mgmt., *2012-2017 OCS Oil and Gas Leasing Program*, https://perma.cc/RKY8-CVPP.

[85] *See* 43 U.S.C. § 1344(a)(2).

[86] *Id*. § 1344(a)(3).

[87] California ex rel. Brown v. Watt (*Watt I*), 668 F.2d 1290, 1316 (D.C. Cir. 1981).

[88] *Id*. at 1317.

[89] California ex rel. Brown v. Watt (*Watt II*), 712 F.2d 584, 600 (D.C. Cir. 1983).

[90] *See* Institute for Policy Integrity, *Comments on BOEM–2016–0003, the 2017-2022 Outer Continental Shelf (OCS) Oil and Gas Leasing Proposed Program* (June 16, 2016), https://perma.cc/J7U4-MBYX.

[91] 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*.

[92] *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).

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

[94] 43 U.S.C. § 1341(a) (2018).

[95] *See* Nat. Res. Def. Council & Earthjustice, Briefer on Presidential Withdrawal Under OCSLA Sec. 12(a) (2016) https://perma.cc/69JV-APQV; *see also* Memorandum on Withdrawal of Certain Areas off the Atlantic Coast on the Outer Continental Shelf from Mineral Leasing, 2016 Daily Comp. Pres. Doc. 861 (Dec. 20, 2016) https://perma.cc/283L-TKZ2.

[96] *See, e.g.,* Memorandum on Withdrawal of Certain Areas of the United States Outer Continental Shelf from Leasing Disposition, 2014 Daily Comp. Pres. Doc. 934 (Dec. 16, 2014), https://perma.cc/669B-F7BF.

[97] League of Conservation Voters v. Trump, 363 F. Supp. 3d 1013, 1022 (D. Alaska 2019) ("The wording of President Obama's 2015 and 2016 withdrawals indicates that he intended them to extend indefinitely, and therefore be revocable only by an act of Congress").

[98] *See* League of Conservation Voters v. Trump, No. 19-35460 (9th Cir., argued June 5, 2020).

[99] *See* Nat. Res. Def. Council & Earthjustice, *supra* note 95; *see also* Proclamation No. 3339, 25 Fed. Reg. 2352 (Mar. 17, 1960) https://perma.cc/G5DY-VP5E (noting in an OCS withdrawal that the "unique coral formation and associated marine life [were] of great scientific interest and value to students of the sea" and that it was "in the public interest to preserve this formation of great scientific and esthetic importance for the benefit and enjoyment of the people"); Jayni Hein, *Monumental Decisions: One-Way Levers Towards Preservation in the Antiquities Act and Outer Continental Shelf Lands Act*, 48 Envtl. L. 125, 145 (2018).

[100] Exit Memorandum from Sally Jewell on Dep't of the Interior's Record of Progress (Jan. 5, 2017), https://perma.cc/N6HJ-R42Z.

[101] 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).

[102] Koebrich, Samuel, Bowen, Thomas, & Sharpe, Austen, *2018 Renewable Energy Data Book*, U.S. Department of Energy (DOE), Office of Energy Efficiency & Renewable Energy (EERE) 20 (2018), https://perma.cc/P8P6-5EXA.

[103] Nikki Springer & Alex Daue, The Wilderness Society, *Key Economic Benefits of Renewable Energy on Public Lands* 9 (May 2020), https://perma.cc/C5F7-9GW3.

[104] Bobby Magill, *State Mandates Could Spur Solar, Wind Demand on Federal Land*, Bloomberg (Apr. 30, 2019), https://perma.cc/J9DL-YW8L.

[105] 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.

[106] 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.

[107] Variance areas are BLM-administered lands that are outside of solar energy zones (SEZs) but not otherwise excluded by the Solar Energy Program. BLM considers right-of-way applications for utility-scale solar energy development in variance areas on a case-by-case basis based on environmental considerations; coordination with appropriate federal, State, and local agencies and tribes; and public outreach. This evaluation is referred to as the variance process. BLM, *Variance Process*, https://perma.cc/R9R9-7CDM.

[108] *See* Karl Cates et al., Institute for Energy Economics and Financial Analysis, Federal Land Agency Lags on Solar Development Approvals Across Southwest U.S. 1, 8-12 (June 2020), https://perma.cc/2EPD-AFDK.

[109] The White House, The President's Budget, Fiscal Year 2016: Investing in Coal Communities, Workers, and Technology: The POWER+ Plan, https://perma.cc/5VAW-TJR5.

[110] 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.

[111] The White House, Office of the Secretary, Press Release, Fact Sheet: Administration Announces Actions to Drive Growth in Solar Energy and Train Workers for Clean-Energy Jobs (Apr. 3, 2015), https://perma.cc/MZD6-9CNG.

[112] Solar Training Network, American Solar Workforce, https://perma.cc/DYQ2-Q4MR.

[113] The Solar Foundation, National Solar Jobs Census 2019 (Feb. 2020), https://perma.cc/6ADB-NKR4.

[114] Dep't of the Interior, Bureau of Land Management, Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and Corrections, 81 Fed. Reg. 92122 (Dec. 19, 2016); *see also* H.R. 2663 § 213(b) (2015).

[115] 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.

[116] Koebrich, Samuel, et al., *2018 Renewable Energy Data Book*, *supra* note 102.

[117] U.S. coastal waters have a technical offshore wind capacity of 2,058 GW, which could produce 7,200 TWh per year, almost twice the total 2015 U.S. electricity generation. *See* Dep't of Energy and Dep't of Interior, National Offshore Wind Strategy (Sept. 2016), https://perma.cc/F5L7-27HC.

[118] 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.

[119] 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.

[120] The Biden Plan for a Clean Energy Revolution and Environmental Justice, JoeBiden.com, https://perma.cc/F8QH-FHCH.

[121] *See* Bureau of Ocean Energy Management, Renewable Energy Research Completed Studies, https://perma.cc/T9P5-BV9H.

[122] For an example of a project-specific EIS, *see* Bureau of Ocean Energy Management, Vineyard Wind 1 Offshore Wind Energy Project Supplement to the Draft Environmental Impact Statement (June 2020), https://perma.cc/EG99-E4Q7.

[123] *See, e.g.,* Bureau of Ocean Energy Management, Draft Mid-Atlantic Regional Ocean Action Plan Executive Summary (July 2016), https://perma.cc/2A59-TJJF.

[124] BOEM, Offshore Renewable Energy in the Pacific Region (Oct. 4, 2017), https://perma.cc/NK2U-BXTD.

[125] *See* Karl-Erik Stromsta, Vineyard Wind's Timeline Slips as Trump Administration Further Delays Permits (Feb. 2020), https://perma.cc/E3HM-Z5KE.

[126] *See* Bureau of Ocean Energy Management, Strengthening The Intergovernmental Renewable Energy Task Forces (Feb. 2018), https://perma.cc/8K86-7D22; Bureau of Ocean Energy Management, Wind Energy Commercial Leasing Process (Jan. 2017), https://perma.cc/Z2MF-NHFN.

[127] *See, e.g.,* Jayni Hein & Natalie Jacewicz, *Implementing NEPA in the Age of Climate Change*, Mich. J. Envt'l & Admin. L. (forthcoming 2020); Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions: The Proper Scope of NEPA Review*, Sabin Center for Climate Change Law (March 2016), https://perma.cc/M7UF-4R95.

[128] 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.14-1502.16.

[129] *Balt. Gas & Elec. Co. v. Natural Resources Defense Council, Inc.,* 462 U.S. 87, 97-98 (1983) (hereinafter "*Balt. Gas & Elec. Co. v. NRDC*").

[130] Council on Environmental Quality, Executive Office of the President, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews 4 (Aug. 1, 2016), https://perma.cc/KMS8-24G6.

[131] *Id*. at 33.

[132] Council on Environmental Quality, Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions, 84 Fed. Reg. 30,097, 30,097 (June 26, 2019).

[133] *See id.* at 30,098.

[134] *Id*.

[135] *See* 40 C.F.R. § 1502.22; Hein & Jacewicz, *supra* note 127.

[136] 84 Fed. Reg. at 30,099.

[137] Council on Environmental Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020).

[138] *See id.* at 43,375.

[139] *Balt. Gas & Elec. Co. v. NRDC*, *supra* note 129 at 96.

[140] *See id.*

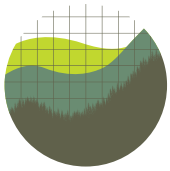
[141] 40 C.F.R. § 1502.23 ("[T]he weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis.")

[142] *See, e.g.,* High Country Conservation Advocates v. Forest Service, 52 F. Supp. 3d 1174, 1191 (D. Colorado, 2014); California v. Bernhardt, No. 4:18-cv-05712-YGR (July 15, 2020).

[143] *See* Institute for Policy Integrity, Social Costs of Greenhouse Gases (2017), https://perma.cc/C483-8G8M.

[144] *Id*.

[145] Interagency Working Group on Social Cost of Carbon, Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12,866, 1 (February 2010), https://perma.cc/B6H2-UQHM.



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